

# THE AI BUSINESS PLAYBOOK

## GENE MARKS



IN PARTNERSHIP WITH

**COX**  
BUSINESS

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## **Small and Mid-Sized Businesses Adopting AI? Don't Believe It.**

A recent report from Goldman Sachs caught my eye. The survey found that about 68 percent of small and mid-sized business owners said they are “already using AI,” with another 9 percent planning to begin using it within the next year.

“It’s a significant jump from the 51 percent of small and mid-sized business owners who were using the technology to increase productivity and expand their capabilities two years ago,” the report said. “Most small and mid-sized businesses using AI, about 80 percent, said it is enhancing rather than replacing their workforce. About 74 percent of small and mid-sized business owners using AI planned to grow their business in 2025. That compared to 65 percent of those not using AI or unsure about adoption. Nearly 40 percent of small and mid-sized businesses using the technology said it would allow them to create new jobs in 2025.”

This isn’t the only survey I’ve seen purporting that AI growth among small and mid-sized businesses is proliferating. Other reports — mostly from tech companies with their own agendas — have been sent to me confirming this. In addition, the U.S. Chamber of Commerce found that, in 2025, businesses “doubled their adoption of AI, increasing from 23 percent in 2023 to 58 percent.”

My advice: Be dubious about these studies.

My firm has more than 600 clients in the mid-Atlantic area. I frequently visit other small and mid-sized businesses around the country doing consulting work. I also speak to thousands of business owners at more than 50 industry conferences each year. I talk about AI. I ask them about their usage of AI. And here’s the reality: They’re not really using AI. At least, not yet.

Of course, tech companies want to give the illusion that AI is proliferating among small and mid-sized businesses so that business owners will experience FOMO and be made to feel like they should be jumping on the bandwagon too. And, of course, the media want their audience to believe the same because it’s a good story and leads into the “AI is going to take away your job” narrative that gets lots of clicks. And the AI industrial complex — software, hardware, infrastructure, data centers, consultants, venture capitalists, startups and all the others making money in this new wave — want to keep that narrative going.

But let's get real: AI usage among small and mid-sized businesses is in its infancy. Barely.

What these businesses are actually doing is dabbling. They're playing with chatbots like ChatGPT, Gemini, Copilot, Claude and Grok. They're using these platforms for research. They're getting help crafting e-mails. They're leaning on these platforms to review contracts, write policies and enhance research. Some businesses are using generative AI to create images, update websites and create marketing documents. This is good. This is productive. This is helpful. But it's not "adopting" AI.

The really core adoption — where AI agents are being used to reconcile accounts, place orders, send e-mails, converse with customers, apply cash, analyze transactions and produce quotes, estimates and proposals automatically based on historical transactions — is nowhere near happening at small and mid-sized businesses. There are no robots packing boxes, lifting pallets or cleaning offices. Workforces aren't being cut. Devices aren't running on their own. None of this is happening. Yet. Why not? Three reasons: cost, reliability and trust.

Big companies are spending billions on their AI models and — after a couple of years of doing this — seeing a benefit to the bottom line. Although some claim to be using AI to eliminate jobs, a recent report from MIT researchers revealed that 95 percent of generative AI pilots at companies are failing. Small and mid-sized business owners aren't going to risk their limited resources on technology that can't prove its ROI. Big companies have the funds to waste on these projects. Some will succeed and expand, and these innovations will ultimately trickle down to small and mid-sized companies when their value is proven. But for now, the cost to implement what is still an unproven and immature AI solution at a small and mid-sized business is too prohibitive.

And is AI reliable yet? Certainly not. Hallucinations are still very common and, according to some sources, are even getting worse. Even simple research requests on the most popular chatbots oftentimes return incorrect answers. And some reports say that problem is worsening too. The average age of the U.S. small and mid-sized business owner is over 55 years old. We've been hurt before by bad and buggy software. We're wary of this stuff and are hard pressed to rely on it until it's clear that it's reliable.

Finally, AI applications and agents raise all sorts of security concerns. Hackers are using AI to deepfake executives and for all sorts of nefarious purposes. To use these AI platforms, we're asked to send our most critical and confidential data to the Cloud, with promises from tech companies with a poor track record of

trustworthiness that those data are protected and secured and won't be used for any other purposes. Many of my clients are very hesitant to do this.

Don't believe what you read. "Adopting AI" means monkeying around with a chatbot. Many small and mid-sized business owners are doing this and good for them. But are they really using AI to generate more profits and increase productivity? Not yet.

## **Your Employees Are Terrified of AI. Here's How to Prepare Them.**

If you've been anywhere on the planet over the past few years, you have likely seen the countless predictions of how AI is going to take away jobs. Hundreds of millions of jobs globally according to another report! How can people not be terrified of this? Well, they are. Your employees are terrified too. And it's hard not to empathize.

AI is already replacing workers at some companies, and some fear greater job losses in the not-too-distant future. More companies are now publicly admitting how they're using this technology to reduce their headcounts. Other cost-cutting measures — driven by AI and other technology advances — are leading big brands to lay off tens of thousands of workers. Many articles pinpoint the jobs most likely to go away thanks to AI. Others discuss how job seekers face challenges finding work, not only because of a slowing economy but because of cutbacks fueled by technology.

So it's understandable why your employees would be concerned. But, as business owners, we know that they really shouldn't be. We need them. Especially the good ones. So here's how you can prepare your workforce for the inevitable, unavoidable, inescapable impact that AI will have on your business and their livelihoods.

### **Drill Down on Your Software Vendors**

Big brands are spending hundreds of millions of dollars to build their own internal systems for writing code, interacting with customers and performing tasks behind the scenes. But what about small and mid-sized organizations? Most will not be writing their own AI applications. They'll be leaning on the features introduced by their software vendors. As I write this, the technology firms that make accounting, customer relationship management, human resources, order entry, inventory management and other business applications are doing just that: investing millions in new AI capabilities for their platforms.

Owners and managers need to spend time with their most significant software vendors and understand what AI features and functionality they're rolling out and then choose which of these functions will provide the most ROI for their companies. The reality is that AI isn't going to impact all aspects of a business. But it will impact certain parts where it makes the most sense. Those parts need to be determined. Why? Because people will be affected.

### **Train Your People. For Real This Time.**

Let me guess: Your business has Microsoft Office or Google Workspace and you're using...what...20 percent of their features? Don't make this mistake again and don't do this with your AI investments. Once you choose which AI features you'll be focusing on (see above), then spend the money on training your people for real this time and then lean heavily into those features. Not only is it critical for your business to leverage whatever automation tools are available, but you'll find it making a huge positive impact on your employees' attitudes towards these technologies. Help your employees to become experts in AI for their jobs. They'll gain confidence in themselves and a new appreciation for how AI will make their jobs easier and their lives better. Most fear is caused by uncertainty and ignorance. Training will remove those factors.

### **Understand Your Demographics.**

A recent report found that a staggering 85 percent of ChatGPT's mobile users are male. Other studies have shown that older people use it less than younger generations. And more than six in 10 GenZers use AI for education, while 30 percent of younger generations use it weekly. Meanwhile, most older generations rely on AI mainly for work and professional tasks like helping with e-mails. It's important to tailor your training and your approach to AI based on who your people are.

### **Don't Advertise Your Intentions.**

Shopify's CEO said that his company won't hire workers unless it can be proven that AI won't do their job instead. Consumer financing firm Klarna revealed that their AI model would replace 700 customer service agents. Many CEOs have already publicly stated that AI will be helping them to cut headcount.

To me, none of these announcements say "Hey, we love our people." Imagine working at one of these firms. What would you think? You'd be afraid for your job. And that will impact your productivity and commitment. My advice: Don't be like these CEOs. Whatever AI plans you have for your business, keep them close to the chest. It's likely that, as a small and mid-sized business owner, these plans will not involve cutting headcount, only increasing productivity. But your employees won't know that and could interpret your statements differently. And given AI's rapid changes, those plans can change. Even Klarna's CEO revised his claims after realizing that, depending on the issue, customers want to speak with humans. Duh!

## **Change Your KPIs.**

Speaking of change, AI should cause you to change the Key Performance Indicators (KPIs) that you're likely using to measure your people. Your AI investments are intended to increase productivity, and that's what your metrics should be about. The whole reason why you're investing in this stuff is not to get rid of people but to help them do things quicker. Because of this, you should change your focus to KPIs that emphasize productivity like output per employee, revenue per employee, task completion rates, billable utilization rates and error rates.

## **Finally, Be Realistic and Transparent.**

The narrative is that employers will leap at the opportunity to replace their workers with bots, fire their employees, save money and increase their profits. And there's no denying that some jobs will be replaced. New technologies have a way of doing that.

But business owners like me — and just about all my clients — know better. There's myth, and there's reality. The myth is that everything will be done by AI, and few workers will be needed. The reality is that AI is in its infancy, and it's nowhere near the stage where we can rely on it to take away the core responsibilities that are being done by our very valuable employees.

But make no mistake: These tools will get better, more accurate and more reliable over time. AI agents will start assuming tasks behind the scenes. And employers will be using them to do the work that employees are now doing. Which means you should be realistic and transparent with your people. If they don't lean into these tools or their KPIs lag behind others, then you may have to make changes. You have a business to run. If employees don't adapt to other tasks and adjust to this new reality, then, yes, they may be out of a job. This is just a fact.

But, if you provide your people with the right training and context for your AI investments, your best workers will see the opportunity and step up to the plate. Those will be the ones who will not only help your business succeed but will themselves grow into better professionals.

## **No, It's Not Time to Replace Your Workers With AI. Not Yet.**

According to an April 2025 survey of more than 1,000 business leaders by organizational design and planning software platform Orgvue, more than half of those that laid off employees because they thought AI would replace their jobs are now regretting the decision. Does this come as any surprise? Not to me. And not to most of the business owners I work with.

I question the sanity of the people running those above-mentioned companies. They just laid off workers and replaced them with AI? They must have been reading quotes like this from Tim Cook, the CEO of Apple:

*"AI is already making businesses more efficient, more responsive, and more personalized. It's a growth driver."*

Except Tim Cook didn't actually say that. I asked ChatGPT to give me quotes from tech leaders "telling businesses about the importance of AI for their companies," and it gave me that response. But, when I asked where it got that specific quote, the chatbot retreated and said:

*I apologize for any confusion earlier. The quote attributed to Tim Cook does not appear to have a direct source from a verified interview, speech, or official Apple communication.*

Oops. This actually happened. And that was just the simplest of simple tasks I asked of ChatGPT. This tells the story of AI in 2025.

But apparently there are executives who don't know this? They actually fired employees because they thought that AI would do their jobs? Those executives are the ones who should be fired. The reality is that AI wasn't at the place where it was replacing people in 2025. And business managers — particularly in small and mid-sized companies — who thought it was better are probably thinking again.

At best, generative AI platforms like ChatGPT, Claude, Gemini, Copilot and Grok provide answers to questions, help us to compose better e-mails and create recipes for chicken pot pies. What they actually do is perform an enhanced version of search so that, instead of sifting through dozens of websites, lists and articles to figure out how to choose a great hotel in Costa Rica, fix a broken microwave oven or translate a phrase from Mandarin to English, we simply ask our chatbot a question and it provides the best answer it finds. These platforms are getting better and more accurate and are indeed useful tools for many of us.

But these chatbots are nowhere near replacing our employees.

“AI chatbots have had no significant impact on earnings or recorded hours in any occupation,” concluded two researchers who looked at the labor market impact of AI chatbots on 11 occupations, covering 25,000 workers and 7,000 workplaces in Denmark in 2023 and 2024. “Employers are also shifting gears and actively encouraging it. But, when we look at the economic outcomes, it really has not moved the needle.”

In most of today's workplaces, particularly amongst the 33 million small business owners, some of whom are my clients, AI is not being used in any core operation. Believe me, business owners would love to replace their employees and have their accounting, customer relationship management, inventory, order and payroll and systems do the work in lieu of them. But that's just not reality and won't be a reality for the foreseeable future. Why? For three reasons.

For starters, the technology doesn't exist, and what exists doesn't work very well. Sure, well-known players like Salesforce, Microsoft and Intuit are rolling out AI features designed to do everything from processing accounts payable to sending out e-mail marketing campaigns. But these are limited, immature and unreliable. Business owners aren't going to trust any of these tools to do data entry, make decisions or execute transactions without a human being involved. No thank you.

Second, to build these things means giving up data and intellectual property to the likes of Microsoft, Google, OpenAI and others and, to put it mildly, most businesses have little confidence that these companies will secure this data, let alone not sell it or use it for their own purposes no matter how many promises, guarantees, disclaimers and assurances they make. We're not even sure our data are safe, secure and protected when they're hosted in the Cloud, let alone allowing these companies even more access and watching how we're using our data. No one I know is comfortable about this.

Finally and most importantly, it's too expensive to build an AI system. Sure, Buy-Now-Pay-Later platform Klarna is replacing hundreds of workers with its internally developed customer service system leveraging OpenAI's large language model. And Meta is using AI to replace many of its programmers. And J.P. Morgan and other Wall Street firms are building in-house AI platforms to do the work of its Harvard MBA graduates. But, right now, AI is just a big corporate play. These systems cost tens if not hundreds of millions of dollars. Most smaller companies have data in multiple places and can't afford to hire an AI-experienced developer to bring together all of these data — even with the tools available — to create their own internal model and then — yikes — build agents on top of this messy, out-of-date and likely inaccurate information to actually perform tasks. Not yet.

But that doesn't mean never.

There's no doubt that big things are coming. Of course, the systems rolling out today will — like the generative AI platforms we're using — become more accurate and reliable. Businesses will give in to the loss of their privacy for the benefits it will provide. Their AI

platforms will one day be able to validate when data are potentially incomplete and inaccurate with other sources before launching into tasks.

Yes, the robots driven by firms like Boston Dynamics will one day be performing the work that construction and manufacturing workers are doing. Drones will one day deliver packages, monitor workplaces and count inventory. Driverless trucks will deliver our packages, autonomous forklifts will move pallets and bots that are indistinguishable from humans will talk to our customers and prospects like our people do now.

I, like many business owners, have no doubt that all of this is coming and that one day AI technology will indeed reduce our labor costs. But that day is still years away. My smartest clients know this and are waiting. Others — like the ones in the survey above — were simply duped into believing that this stuff actually exists

## **Security, Trust and “Agent Sprawl”: The Head of AI at Cox Communications Offers AI Advice to Smaller Companies**

Eric Pace is the Head of AI at Cox Communications, a job that didn't exist until just a few years ago. He brings years of technology experience, and, among his many responsibilities, Pace is charged with getting thousands of workers at the largest private broadband company in America to adapt and adopt AI so that they are as productive as possible and provide a better experience for customers.

You may not be running a multi-billion-dollar business, but I'm sure you and your management team have the same concerns. How can your company leverage AI so that your employees are productive and you're staying ahead of the competition? Pace has some advice.

### **Centralize**

For starters, the use of AI should be a centralized strategy across your organization. It shouldn't be scattered across departments, functions or locations. For Pace, the use of AI across the board should be tied to specific objectives and applied with the benefit of the entire enterprise as its goal, not just little pieces of it.

“At Cox, we chose to centralize the AI function when we got started so that it can grow the entire company's objectives in mind,” he said.

Pace says that Cox leadership realized that they should have at least one person responsible for distributed elements of its strategy, which is how he's developed into his role. Other businesses, in his opinion, should be doing the same.

### **Stay Current**

Pace's job is to know all there is to know about AI so that it can be used effectively at his company. Of course, this is an impossible task. But regardless, he devotes a significant amount of time to keeping up to speed on the latest tools and trends that will have an impact, and he strongly advises business owners and leaders to do the same.

“My AI education comes less from manuals and more from conferences, conversations and hands-on experimentation,” he said. “I follow certain experts and sites, and I'm constantly reading.”

Pace also admits that one of the best places to learn about AI is...AI.

“People need to stop thinking that AI Assistants like ChatGPT or Copilot are search engines and instead consider them as collaborators,” he said.

## **Trust But Verify**

Pace has also learned not to trust everything that comes out of his AI Assistant. He uses these platforms to research and summarize issues, but he also aggressively interrogates when something seems missed. He challenges his chatbots frequently by revising their summarizations and then asking for the things that they left out.

“You’d be surprised how much is missed,” he said. “No assistant, even an AI Assistant, is perfect. Coaching your AI Assistant is important.”

The same goes for agents. Cox is using AI agents in limited cases, mostly behind the scenes to check on the performance of its communications systems. Agents will grow in popularity and usage over the next few years. But they shouldn’t be blindly trusted.

“I don’t trust AI,” says Pace. “In the end, humans must own the final product, especially for anything that’s public facing. It’s still you that’s producing the output or representing whatever it is.”

## **Build vs. Buy**

As I’ve been writing about AI over the past few years, it’s mostly been a big company play. Many companies are building their own large language models and training data primarily for customer service and software development. The cost of these projects is enormous, and — according to some recent studies — the results have been less than optimal. But, if done the right way, building your own AI application can demonstrate ROI.

Pace says that he prefers to build many AI capabilities in house, rather than buying separately created applications, in order to avoid ending up with what he calls “a thousand flowers that bloom” or dozens of overlapping point solutions that are hard to govern.

“A lot of the companies we see are coming with very micro-focused point solutions... that ultimately lend themselves to... a thousand of those things in our landscape.”

And, although this strategy has been working for Cox, Pace doesn’t necessarily believe it’s the right approach for smaller organizations.

“SMBs shouldn’t try to replicate Cox’s engineering footprint,” he says. “They should start with the AI capabilities inside their existing systems (CRM, ERP, etc.) and selectively add focused tools where they’re weak, like content creation. We ultimately all have the same problems. I think the difference is scale.”

## **Target Specific Problems**

As a technology consultant, I’ve seen plenty of business owners and managers throw money at software and hardware solutions without a clear purpose. That’s good for Microsoft and Dell. But it doesn’t make much sense for a business with limited resources. Pace agrees and

advises that business leaders who want to leverage AI should first start with the real problem and not just “hey, we need AI.”

“Someone must bring a real, well-qualified problem that AI is suited to solve,” he said. “At Cox, we are just not going to buy AI to get AI in here. Someone has to bring me a problem that we have, and that problem has to be one that’s good to solve with AI.”

Pace also thinks it’s important to keep things simple and not have too many AI projects going on at the same time.

“It’s important to grow from a single use case in concentric circles, not scattered pilots,” he says. “Instead of deploying dozens of disconnected experiments, it’s usually better to start with one good use case and expand outward from there, so workflows remain connectable.”

### **The Security Challenge**

I always tell associates that there are no guarantees in life. Like everything else, AI is a risk/reward decision. If the reward of using these platforms is greater than the risk — particularly the security risks — then that’s up to you.

That said, there are some steps you can take to ensure that your data are protected. Pace says it’s important to grill your service providers, know what happens to your data, where it lives and what models are used.

“If a provider won’t explain this or answer our questions, Cox is out,” he said. “If a vendor is a black box, we walk away.”

### **Data Are Key**

AI automation can have amazing benefits, but, if you’re trying to do this with less-than-stellar data, you’re going to have a problem. Having said that, Pace says you don’t have to overdo it.

“You don’t need perfect data for AI to work,” he says. “The best approach is to define what specific AI products or agents you’ll be using and then clean up only the data that they’ll require.”

Pace believes “there’s not a company on earth” that has a clean data ecosystem. He says to fix your data but “you don’t need complete data harmony in order to monetize your AI initiatives.”

### **Agent Sprawl**

With all the potential productivity AI promises, there will be drawbacks. One that Pace pointed out is something he calls “agent sprawl.”

This is when it becomes so easy to create AI agents that companies have many — hundreds, even thousands — that overlap what each other is doing. Pace is trying to do “drive standards” as Cox builds new AI systems.

“Companies should be thinking about this now and creating standards,” he said. “If companies in general don’t get control of where they put all this stuff, you’re going to have sprawl, and it’s going to be a hard mess to clean up.”

## **Cox Workplace Study: Younger Employees Could Be Your Best AI Asset — But They Probably Won't Tell You.**

Millennials and Gen Z workers now make up about half of the country's workforce. And, when it comes to AI, they're pretty concerned. That's the conclusion I take from a recent workplace survey conducted by Cox Communications.

The good news is, according to the survey, more than 60 percent of Gen Z and Millennials feel positive about AI's growing role at work. But, although many feel that AI will create new opportunities, about half of GenZers fear that it could replace their jobs.

Of course, this fear doesn't stop these generations from using these tools. About 50 percent of Gen Z and Millennial employees do, and yet they're nervous to admit how much of their work is accomplished with AI, with 65 percent saying they're more familiar with their tools than the ones that their company provides.

All of this creates a dilemma for business owners and senior managers.

"Younger workers are using AI heavily, but they're just not talking about it at work," says Sarah Kim, who's vice president of commercial marketing at Cox Communications. "Businesses should be consulting with their younger generations and tapping into these digital natives for ideas before they develop broad organization AI policy or strategy."

So how do you get your team of younger workers share more openly about AI? Kim has a few suggestions.

### **It's Not About Output; It's About Impact**

For starters, leaders need to shift what they value. Kim, who has been managing teams of workers for more than 20 years, says that, thanks to AI, there's a change happening in how we value our employees: it's no longer about output; it's about impact. She sees how AI is making people more productive than ever...and democratizing knowledge.

"AI makes productivity easier and levels the playing field," she said. "Leaders should stop rewarding employees solely for output and begin valuing strategic contribution and business impact."

Security risks aside (and yes, there are serious security risks that need to be addressed through policies and oversight), Kim believes that employees shouldn't be afraid to use their own AI tools in the right business context, especially if it helps them do their jobs better.

"Of course, company management must set simple guardrails that protect customer data and competitive information, but that shouldn't preclude the use of technologies that make a person's impact even greater," she said.

The hope is that, if one employee is using a great AI application and the group becomes aware, it could help everyone be more productive. And just because an AI app is being used to do the work, that doesn't mean the employee is "cheating." In fact, this type of attitude should be encouraged. Disrupt or be disrupted.

### **AI Isn't a Nice to Have**

In addition to software development and customer service, marketing is one area that is being most impacted by a new generation of AI tools, and, as a marketing executive working for a large corporation, Kim feels strongly that a best-in-class marketer must adopt AI "full stop."

"AI literacy is a job requirement," she said. "Employees may worry about losing their jobs to the technology, but they're more likely to lose them to colleagues who use it well, end of story."

### **It's Not About Losing Jobs. It's About Change.**

To that end, leaders need to be aware that what many employees really fear isn't just the loss of their job; it's the changing nature of their work because of AI and whether or not they can keep up with these changes. AI is changing tasks, roles and functions. Its disruption is just beginning. People don't like change. But the people who adapt quickest will benefit the most.

For Kim, that means that the future of marketing — and most other company functions — will reward human-centric skills, because AI will democratize knowledge and executives will prioritize skills like organizational intelligence and human-to-human communication.

"Anyone could become an expert on anything with AI," she said. "It's how this knowledge is communicated and organizations are managed to use this information that will be a critical skill going forward."

### **Younger Employees Are Key**

As the Cox Workplace Study shows, Millennials and GenZers are excited about the opportunities that will be created by AI but also nervous about their futures. Considering the importance of this demographic, it's important to address these concerns head on.

"Younger employees clearly want a seat at the table, and leaders must show them their voices matter," said Kim.

She's right. Younger workers correctly believe their digital upbringing qualifies them to influence technology decisions, and this shouldn't be ignored. Business owners, managers and company leaders don't necessarily need to hand over the final decision on critical technology strategy to these younger workers, but we must close the loop and explain to them how their feedback shaped the outcome.

“It’s on us to communicate the why and show how we’ve taken that feedback into account,” said Kim.

### **Fun Stuff Ahead**

There’s no question that we’re still in the very early days of AI. Over the next few years, countless new products — along with predictions — will rain down on business leaders and will require their consideration. For Kim, this is all good and should be viewed positively. And it requires people to jump in now.

“AI adoption requires experimentation, fun and competition — not just more training,” she says. “My team will improve with AI and other technology tools because we’ll be using it and not just studying it.”

She encourages adoption through contests, gamification and social proof.

“We actually have a weekly contest... of who’s using Copilot and what they’re doing with it. It’s not about getting more training — it’s actually getting in there and using it.”

## How AI Is Ending Google's Search Monopoly

A couple of years ago, I attended an excellent conference in Seattle by a well-known firm that provides online search and marketing tools. They had a lineup of top-notch speakers who are experts in digital marketing from the largest corporations, brands and agencies in the country. The theme was Search Engine Optimization (SEO) and how to drive the most clicks to a website, e-commerce store or content page.

The conference was basically all about Google. Why? Because, in 2025, Google dominated search in the world. To get found, you needed to please the Google Gods. So what advice did the greatest and smartest people in the online marketing world have for additional search options? They all pretty much said the same thing: "beats me."

No one knows. That's because Google's search algorithm is a secret more closely guarded than the recipe for Coke or U.S. nuclear launch codes. Everyone there was trying to figure out what Google was going to do next, where Google may change its algorithm and how these changes would affect traffic to their site.

AI is now changing that. And it's doing so in three ways.

### More Options

For starters, it's giving our potential customers more ways to find us. Yes, studies show that Google still dominates search. But already you can see ChatGPT and others like it begin to make headway.

So far, even if ChatGPT's 1 billion messages per day were search related, its total share of the search market is less than 1 percent. Google saw approximately 373 times as many searches as ChatGPT in 2024, and Google searches actually grew in 2024 compared to 2023.

But things are changing. Gartner says that soon traditional search volume will drop by about 25 percent, with AI Assistants and virtual agents capturing a growing share of user attention and behavior. Others said that AI-powered searches would grow annually by up to 35 percent starting in 2025, reaching an estimated 14 percent of search market share by 2028, with Google declining modestly to about an 86 percent share. I'm betting that decline will be more pronounced with AI.

I've tried Google AdWords, and, for a small business like mine, it's not ideal. My company sells customer relationship management software, and the big players in this industry already have search results locked up. They spend more money than

me. They buy up all the good keywords. People searching for products I sell won't find me unless they click through to page 8 of their search results, and no one does that.

AI is helping solve this problem. As other chatbots take away search market share from Google, I'll be offered more ways for customers to find me. I predict that many small and mid-sized businesses will gravitate to these chatbots. ChatGPT and Perplexity have already announced their own browsers to compete with Chrome and collect data. More competition means more choices, less costs and better results for businesses like mine.

### **Less Clicks, Better Clicks**

Most have noticed that Google has introduced an "AI View" into their results where search answers are summarized. Some believe that this will result in fewer clicks on links to websites, and they're right. Smart marketing people, like Jason Rose, senior vice president of digital sales and marketing at HR firm Paychex, believes that this will have greater benefits for businesses like mine.

"People are reading the AI summary and kind of getting what they need and moving off," he said. "But it's not all doom and gloom because these visitors actually convert at a much higher rate."

To date, SEO has been all about getting visitors to your website. Websites are ranked based on their traffic. But how genuine is this traffic? In 2023, it was 49.60 percent of Internet activity, almost catching up to human traffic, which was at 50.40 percent. Meanwhile we're paying Google to send this nonsense to us. AI is fixing this too. It is changing the way people use the Web for research, be it academia or shopping.

Rose is right. By reading an AI overview, a visitor who clicks through to a website has given some thought to their action and is therefore a more-qualified prospect, a better visitor. Google and others will likely charge more for this. I'll pay. It's worth it.

### **Content Creation Opportunities**

To be included in an AI overview, your content has to be relevant and useful. Unfortunately, much of today's content isn't. At the Seattle conference I attended, some of the sessions talked about SEO tricks and games you can play with content (keyword stuffing, hidden links, showing different content to search engines than what is shown to users) to get noticed by Google. AI will help to stop this. As it gets smarter, it will be better able to root out this nonsense so that it's displaying the best answers possible.

This means that the best content will be included in AI overviews, and the websites with the best answers will have a better chance of being found. No games. No tricks. Just good, valuable content. And not content generated by AI because AI will be able to figure that out too.

This will be an opportunity for quality content providers — writers, bloggers, creators, etc. — to step up their game and prove their value. The best ones will rise to the top, unburdened by the crawlers and spiders that held them down. People worry that AI will replace content providers. It's actually the opposite. It's creating more opportunities for them.

"AI is reading the same content that the human would have and building summaries based off of that," Rose said. "So again, you need great content. Content is still king."

All of this is happening now. But it's still early days. Google is still Google. ChatGPT and other chatbots are infants in the search world and still hallucinate too much. But you can easily see the future. And the future is a world where, thanks to AI, more and better search options and results will exist. For a business owner like me, that world can't come soon enough.

### **AI for Manufacturing and Distributors: Where Is It?**

There are many good articles about how AI is going to change manufacturing. Most of these are conjecture, predictions and future-telling. They rarely list actual examples. They're valuable in that they can give executives some pause for thought. But I'm more interested in how AI is really being used by actual manufacturing and distribution companies right now. So where is it? I'm looking. Here's what I'm seeing so far.

### **AI for Manufacturing: Microsoft and Google**

Both Microsoft and Google published in 2024 more than 1,300 use cases of how their Copilot and Gemini AI offerings, respectively, were being used by businesses. It's interesting but unfortunately mostly repetitive.

About 99 percent of what I'm seeing is mostly the same thing: AI is being used to help people write better e-mails, analyze data, chat with customers online or perform research. It's mostly back-office stuff, which is important, but it's not hands on the shop floor. Of all these use cases, I found only about a dozen that specifically were about manufacturing and distribution.

For example, Microsoft says that its customer Rolls-Royce is using its AI tools to "optimize engine design, turbine production, and health monitoring" which they say

has “boosted machine usage by 30 percent, reduced scrap, and proactively prevented approximately 400 unplanned outages per year.” The software giant claims that another customer, Grupo Bimbo, is using AI to “modernize manufacturing, reduce downtime, and drive cost savings.” A company called ZF Group is using over 25,000 of Microsoft’s Power Platform apps to “engage 37,000 users to optimize manufacturing efficiency.”

Google says that UPS has used its AI tools and platforms to “build a digital twin of its entire distribution network, allowing workers and customers to view package locations in real time, representing a significant leap in transparency and operational control.” A global telematics leader called Geotab that processes billions of data points daily from 4.6 million vehicles used Google’s AI tools to “enable real-time fleet optimization, driver safety improvements, route efficiency, and decarbonization efforts.” Another Google customer called Kinaxis implemented data-driven supply chain solutions for logistics, including scenario modeling, planning, operations management and automation to enhance responsiveness. Prewave, a supply chain risk intelligence platform, is leveraging Google Cloud AI “to provide end-to-end monitoring, detect ESG risks, and deliver deeper visibility into supplier operations.”

I don’t doubt that these companies are getting benefits from AI on the shop floor and improving their logistics and supply chains after building internal solutions with Microsoft and Google tools. It’s just that I read a lot of words like “optimize” and “enhance” and “enable” without really understanding what that means in actual dollars and profitability. I’m sure the managers at these companies know. They better know. They spent untold millions building these systems.

### **AI for Manufacturing: On the Trade Show Floor**

Are equipment manufacturers leveraging AI in their products? I looked at the new products being offered and exhibited at trade shows like Fabtech, Modex and ProMat. These machines do everything from changing tools and laser welding to beveling, boring, centering, grooving, milling, tampering, slitting and processing coils. The companies making these products are without question making them better, more reliable, safer and faster each year.

But they’re mostly doing this through better engineering. There’s a smattering of AI usage I’m seeing — mostly being able to understand simple voice commands or to program jobs. And I’m assuming that these companies are at least starting to use AI to help them accomplish their better engineering, but my hunch is such use is in its nascent stages, at least for now.

The real AI action on the manufacturing floor recently has been robotics. For example, Amazon's Vulcan robots have advanced sensors that detect the size and weight and dimensions of products and can sort and move and pack them as a human does. ABB Robotics has a highly specialized product picking tool that does something similar. And furniture maker Four Hands uses robots to move boxes from the warehouse floor onto and off trucks, saving significant time that humans spend loading and unloading. Companies like Boston Dynamics, ANYbotics, Agility Robotics, Figure AI, Sanctuary AI and Unitree Robotics are creating robots that do inspections, move materials, pick and place parts, sort products, carry equipment and perform maintenance checks.

### **AI for Manufacturing: It's All About Robotics**

So what does this mean for manufacturers and distributors?

If you're running or managing an inventory-focused business, you can build AI solutions using tools and examples mentioned above from Microsoft and Google to help increase efficiencies in your back office. But, for the shop floor, your real investment dollars are going to be targeted towards robotic solutions leveraging AI. Save up your money. Build up your reserves. Start arranging your financing. Get your people ready. This is where to invest.

# **Robots, Glasses and Packages: Six Really Cool Ways Amazon Is Leveraging AI and Why a Business Owner Should Care**

Amazon is rolling out internal technology that's leveraging AI so that the company's employees and merchants not only sell more products but get more work done faster and more accurately. If you're running a small and mid-sized business, you should care. Why? Because what Amazon is doing with AI to run its warehouses, help its merchants, improve its logistics and enhance its back office is what you'll also be doing sooner rather than later. Are you paying attention? Here are six examples.

## **1. Using Glasses to Help Delivery Drivers**

According to Amazon's website, the company is creating its own smart glasses specifically for delivery drivers so that they can get turn-by-turn directions as they deliver packages. The directions would even expand into the stop itself, telling drivers what gates or elevators to use and maybe even avoiding overly excited dogs. The hope is that these glasses will reduce the time needed for delivering packages, even by a few seconds. Because the seconds add up. The company is still trying to overcome some hardware limitations (i.e. limited battery capability) before publicly launching.

*Why should a business owner care?* Google may have failed with its Google Glass years ago, but now these devices are becoming more user friendly and leveraging AI to provide real-world value. As big companies like Amazon embrace these technologies, more will proliferate that can benefit your company too.

## **2. Automatically Identifying the Right Packages for Picking**

It's called Vision-Assisted Package Retrieval (VAPR) and was expected to be fully active in more than 1,000 delivery vans last year. The goal is to make delivery faster and more accurate so that delivery drivers don't have to sort through what's in their vans. Instead, there will be a little green light displayed on the packages to be chosen based on the van's location.

Amazon says that "Once the van arrives at a delivery location, VAPR will automatically project a green 'O' on all packages that will be delivered at that stop and a red 'X' on all other packages. Through an audio and visual cue, VAPR will prompt the driver, confirming it has found the right packages, before the driver

needs to enter the cargo area. The technology also removes the need for drivers to use a mobile device throughout the process.”

*Why should a business owner care?* While Amazon has now exceeded the shipping volumes of both FedEx and UPS, its competitors are still huge, and we can expect them to be using similar AI technologies to improve their logistics. And soon businesses that do their own deliveries will ultimately be available to sign on to similar platforms. Expect this to be core tech for anyone delivering a package in the next few years.

### **3. Helping Merchants Sell Their Products**

Recently, Amazon introduced Project Amelia, a “generative AI-based selling expert” targeted towards their third-party merchants to help them design their sites, choose which products to offer and give the “answers, advice, and tools they need to succeed.”

The chatbot’s aim, over the long term, is to get familiar with the reseller’s business and products so that it can offer very personalized responses to questions like “How do I prepare for the holiday season?” or “Give me an analysis of my T-shirt sales.” For now, Amelia’s best uses are a natural language reporting interface for retrieving information, but going forward the company says it will be able to troubleshoot and fix problems with a merchant’s site and offer other support capabilities.

*Why should a business owner care?* If you’re an Amazon merchant, you should take advantage of these tools, both in their current and future states, to help you sell more products on the platform. But, of course, you don’t have to be an Amazon merchant to benefit. You can bet that many of their e-commerce competitors will be watching, duplicating and implementing similar features as they roll out.

### **4. Elevating Voice Commands**

Wired reported on a “complete rebuild” under way of Amazon’s Alexa and Echo devices, using AI in two ways. The first is a heavy reliance on AI for code-building so that new features can be written faster and changes introduced in a timelier fashion. Secondly, and as changes rolled out, users of these devices (and I’m one of them) found themselves enjoying a more human-like, personalized experience to get news and information and to do their shopping.

*Why should a business owner care?* Because Alexa and Echo devices will ultimately be used to perform voice-activated tasks like ordering products, researching information and — assuming the development tools are made available —

integrating with our business applications to eliminate typing and allow our employees to talk to our accounting, CRM and other information systems.

## **5. Powering Robots in the Warehouse**

Amazon has made it no secret that robotics are the core technology behind its warehouse-management practices. And recently, it deployed its one millionth robot, using a “new generative AI foundation model that will improve robot fleet travel efficiency by 10 percent.” The company promises that its investment in robotics will lead to faster delivery times and lower costs for customers and — to be politically correct — has re-emphasized its commitment to training its existing employees to prepare for the AI future.

*Why should a business owner care?* The cost of robotics has been dramatically decreasing while their capabilities have been dramatically increasing, thanks to AI. Amazon, with its deep pockets, has been investing in this technology for years, so it has a head start. But, thanks to the investments made by larger companies, many robotics companies have developed machines that will use AI to perform functions in warehouses, restaurants, retail stores, manufacturing plants and construction sites in a safer, more effective way than most humans. For business owners who can't find enough people to do this stuff, this will soon be a must-have.

## **6. Reducing Accounting Errors**

Optical character recognition, where information on a document can be read and then brought into a database, has been around for a while. But now, with advances in AI, these systems can not only extract data but better understand what to do with it. Amazon is leaning into this stuff heavily to help pay sales taxes and perform other accounting functions.

According to the Wall Street Journal, the company's finance teams “are turning to generative AI in areas such as fraud detection, contract review, financial forecasting, personal productivity, interpretation of rules and regulations, and tax-related work, moves in part aimed at reducing costs, boosting efficiencies and increasing accuracy, company executives said. These use cases are in a mix of experimentation and implementation stages.”

*Why should a business owner care?* Amazon's not the only one in this game. Similar capabilities are being rolled out by numerous accounting and business software companies for use by small and mid-sized companies too. As with Amazon, you may want to wait before buying because their technologies are also in a “mix of

experimentation and implementation,” so be careful about relying on them too quickly. But, as they get trained, they’ll get better, and as a result the back offices of many small and mid-sized businesses will perform more efficiently and accurately.

So, yes, Amazon’s doing lots with AI. And, yes, business owners should care.

## **Klarna, Etsy and a Driverless Truck Company Learn a Few Harsh Lessons About AI**

One of my favorite AI stories last year was the reckoning of Swedish buy-now-pay-later platform Klarna.

“Klarna’s AI assistant handles two-thirds of customer service chats in its first month!” the company giddily announced to the public, further trumpeting that it did the work of “700 customer service agents.”

And that wasn’t all.

“About 12 months ago, we would have been about 5,000 active positions within the company, and we are now down to about 3,800,” the company’s CEO said. “By simply not hiring, which we haven’t done since September ... the company is kind of becoming small.”

Replacing people with AI. Great idea! Except...not.

Last year, Klarna’s CEO, who, when delivering an earnings report, admitted that the company was “slowing down its job cuts” and getting back to hiring real people to do customer service because the company discovered that people actually want to talk to people.

Separately, a representative from Klarna said that the company is “not reversing on AI” and is “continuing to invest heavily in AI, including rebuilding our tech stack to be AI-first.” But the company also admitted that its CEO “acknowledged that an overemphasis on cost—not AI itself—led to lower quality.”

It turns out Klarna’s not the only company experiencing buyer’s remorse from AI.

For example, a company that announced that its “driverless trucks” built on an AI platform would be rolling through Texas recently discovered that they actually need human drivers after all. Translation company Duolingo aspired to replacing its translators with AI bots but then faced a backlash from its community. Etsy has faced similar backlash from its community thanks to non-human-looking AI-generated products flooding its system.

After firing 8,000 employees and replacing them with AI systems, IBM rehired many due to “gaps in service, dips in employee morale, and delays in resolution.” Australian telecom company Optus attempted to automate functions with AI but then found that AI couldn’t handle many issues as well as humans. McDonald’s

stopped its AI-based ordering test after discovering that humans could do a better job servicing its customers.

Which is why it should be no surprise that a recent report by organizational design and planning platform firm Orgvue noted that as many as 55 percent of companies that had laid off staff due to AI automation now regret the decision. According to the report, “these companies found that AI could not fully replicate the nuanced understanding and adaptability of human workers, leading to a reevaluation of their workforce strategies and a renewed emphasis on human roles.”

Uh...duh?

This stuff just wasn't ready for prime time. And companies who thought that they could use AI instead of humans learned the same lessons as Klarna, McDonald's and others.

Why? For three reasons.

### **For Starters, People Aren't Stupid.**

I stayed at a Marriott conference resort last year and called to find out if the restaurant was still open. A very human-like bot answered my call, and at first I thought it was a real person. But I figured out quickly that it wasn't. Something was just...off.

Just like you can sense someone else in a room with your eyes closed, humans innately know when they're not dealing with another human. We quickly figure out when we're talking to a bot. Maybe not right away. But give me just 60 seconds on the phone with an automated, AI-driven voice, and I'll be able to figure out that the “person” on the other end isn't a person. AI isn't yet able to respond quickly, jump back and forth between questions and issues, and generally behave like a human. All you have to do is ask a personal question or veer off track from the main conversation, and most AI bots get confused and then sound like...a bot.

### **Next, People Will Want to Talk to Humans...Sometimes.**

How many times do you furiously punch “0” on the phone the minute an automated system picks up?

Navigating through these help desk mazes can be infuriating and time consuming. But that doesn't mean there isn't a role for AI. A good customer service system using AI will eliminate the “press 1 for customer service, press 2 for sales, etc.” with a human-like voice asking questions and (hopefully) giving answers quickly. But therein lies the most important thing: If an answer can't be gotten quickly or if the

caller simply wants to vent to a human, there should be quick way to take the red pill (or is it the blue pill?) and get out of the Matrix.

My advice to companies is to understand that people do want to talk to people sometimes and to understand that not every question is a simple question. Be transparent when a bot answers the phone and give us a way out. Don't get rid of your customer service staff. Use AI to screen and answer low-level questions and then use your humans for everything else.

"Humans deeply care about what other humans think—it's something that seems hardwired into us," OpenAI's CEO Sam Altman said at a conference. "While we may keep developing better tools, our focus will always return to one another."

### **Finally, the Companies That Advertise Their Internal AI Initiatives Are Making a Mistake.**

Many companies think they're doing the world a favor by issuing press releases advertising their AI investments. My advice: don't. It's simply bad PR, often premature to share and could create unnecessary and potentially uncomfortable explanations if early strategy or results change (they likely will).

Please don't advertise how you're replacing people with AI. Don't be like the Shopify CEO who publicly stated that it has to be proven that any new job can't be done with AI. He looks like a villain. No one wants to hear it. Keep it to yourself.

Many workers are terrified of losing their jobs, and, when a company like Shopify does this kind of stuff, it says to them: "We don't care about you." Good luck finding talent after that. Who wants to work for a company that considers its people so value-less that it will not only replace them with bots but also tell the universe how smart it is by doing so?

AI is great, and it will get better. But never believe that it will be good enough to fully replace human interaction. It never will.

# How AI Is Reshaping an ERP Software Company's Strategy

Keywords: AI in ERP, intelligent ERP, ERP software trends, business intelligence

For the past couple of years, I've been telling my clients and community of businesspeople that they have two choices when it comes to incorporating AI in their companies: build or buy.

Building, for the most part, has been a big brand game. As I've previously written, financial services companies have spent tens of millions of dollars building out internal platforms on AI models for customer service, research and programming functions. Small and mid-sized companies don't have these kinds of resources, although some have come on the market that — with maybe a few hundred grand — can enable some to build out their own internal AI solutions. These tools will certainly improve and become less expensive over time.

Buying AI solutions, however, is a better option for most of these small and mid-sized organizations. Unfortunately, they have to wait until the companies that they rely on to provide their core software systems start rolling out AI features that are accurate and reliable enough to use. This is now happening, and the proof comes from one mid-market enterprise resource planning (ERP) provider.

Epicor has been around for several years. The company has more than 23,000 customers in 150 countries who are mostly distributors and manufacturers. It has grown through acquisition and by making a good product. Its recent user conference — where I participated (I have not been compensated by the company to write this column) — had about 4,000 attendees. Most of these attendees were accounting and management types eager to hear what's coming from the provider of the core systems they use to process orders, manage inventory and make planning decisions.

They, like me, left with several takeaways. For me, these were the most significant.

## **AI in ERP Was About Business Intelligence Last Year.**

Epicor's theme was "cognitive ERP" or using AI to analyze data and predict outcomes. By doing so, users can smooth out supply chain issues and potentially mitigate tariff challenges (a big topic this week) by better understanding their costs and product availability so that they can predict activity. A good manufacturing and distribution ERP system enables companies to model sourcing scenarios and assess tariff impacts at the SKU or bill-of-material level, which is critical for navigating ongoing geopolitical uncertainty.

“You need to have a system that allows you to understand scenario planning and how you might source something differently,” Steve Murphy, the company’s CEO, told me. “AI can help companies manage tariffs and supply chain disruptions by providing supplier risk scores, traceability, and ‘what-if’ simulations, especially as geopolitical tensions rise.”

### **AI in ERP Is Also About Supporting and Not Replacing Humans.**

The day will come when AI is reliable enough to truly do the work that humans are doing. But even ERP providers like Epicor aren’t stepping into that minefield yet.

“We’re not exaggerating. Summarizing specs, automating quotes, assisting orders...that’s all extremely real. But letting AI swap vendors? We’re not there yet,” said Murphy. “I wouldn’t fire anybody over AI.”

Vaibhav Vohra, Epicor’s President and Chief Product and Technology Officer, agrees and emphasizes that Epicor uses AI to automate routine tasks internally and increase margins to complement skilled labor by enabling them to focus on high-value work.

“Attempts to replace human workers with AI or robotics often fail,” he said. “We tried it, and we weren’t successful. The true opportunity lies in using AI to assist workers and make them more efficient, not to eliminate their roles.”

### **Finally, AI in ERP Will Ultimately Be About Vertical Integrations.**

Epicor’s Vohra says that AI becomes significantly more useful when customized for specific industries. Which is why ERP software providers like Epicor are focusing on defined sectors.

“We’re moving away from being a general ERP provider to becoming a collection of highly specialized vertical ERP platforms, with each one tailored to its industry,” he said. “We’re picking our partners that we’ll be in bed with for a long time.”

AI without data is like a smartphone without the Internet. But, for most distributors and manufacturers, the data needed to make decisions aren’t just in their ERP systems. There are data that will be collected by drones checking inventory, robots stocking shelves, machines that monitor and track runtimes, and autonomous vehicles moving materials around a warehouse. Just as importantly, there are data in the systems of suppliers, customers, freight companies and other vendors.

Software companies like Epicor need to integrate their systems with all these other repositories to provide true value, and the executives running the company realize that. According to Vohra, the company has tripled its number of partners to focus on

niche capabilities like rugged devices for poor Wi-Fi environments and other warehouse machinery.

“Our competitive strategy is rooted in specialization,” said Murphy. “By going deep into specific verticals like discrete manufacturing and hard goods retail, our company can differentiate itself from larger players trying to serve everyone. We’ll continue to be open to integrating or acquiring companies with complementary technologies like robotics or drones to deliver faster innovation to customers.”

All of this is where AI in ERP stands. I expect this column to be outdated in a year, if not less.

“Despite all the complexity, our AI and data tools are developing more quickly than I expected six months ago,” said Murphy. “People are productive, and that’s working for us.”

## **Why Does a Telecommunications Firm Care About AI? This Is Why.**

Cox Communications is the largest private broadband company in America. Its fiber-powered wireline and wireless connections are available to more than 12 million homes and businesses and support advanced cloud and managed IT services nationwide. Why does it care about AI?

Two big reasons. The first is connectivity.

“The fabric of our infrastructure is indeed what we do for a living... the air, the water, the utility of getting to the capabilities that you would think of as AI,” said Jeff Breaux, the company’s Chief Commercial Officer. “We are playing on many different planes...connecting customers to the AI engines in the cloud and the data centers.”

While big tech companies are struggling to prove that the billions they’re investing in AI is going to be worth the return, the real money that’s being made right now is in infrastructure. And that money is benefitting many industries.

Countless, giant data centers are springing up around the world, providing thousands of construction jobs for an industry that desperately needs the work in the midst of high interest and sluggish building and real estate demand. But they’re not the only ones profiting.

Who also benefits from the data center boom? Energy providers and consultants. Cooling specialists and the equipment they sell. Companies that make chips, hardware and networking switches as well as GPU servers, processors, memory boards, monitoring sensors, storage, lighting, networking software, security tools...the list goes on.

But what about telecommunications? Think about it: all this needs to be connected to the end user. You can build the greatest data center ever, but, if no one can access the data, then what’s the use? That’s where firms like Cox come in. According to Breaux, AI cannot function without high-speed, resilient connectivity, and Cox’s commercial business unit — including brands like Cox Business, Segra, Hospitality Network and RapidScale — builds and operates the infrastructure that makes AI usable in the real world. He sees this as the foundational layer of the entire AI ecosystem. And he’s right.

So that’s this first reason. Which brings me to reason number two: tech services.

Besides providing the infrastructure, Cox is also doing something unique in the AI space. It offers services through a company called RapidScale, a managed services provider that helps businesses modernize IT by offering cloud solutions including everything from Desktop and Infrastructure as a Service to backup, recovery and security solutions. But, thanks to Cox’s AI investments, RapidScale is now positioned to do more: help companies first figure out and then use the AI applications that Cox’s network is helping them to connect.

“Many businesses know they want to begin to put AI to work, but their data and their environment are not in a position for AI to take advantage,” Breaux says. “RapidScale helps them get organized by getting their data in a position where it can be actionable by the language models.”

Breaux sees these two opportunities as major growth areas for telecommunications firms like his. Sure, there’s plenty of money to be made providing connectivity services between data centers and the rest of the universe. But that universe has a lot of businesses. And, once they’re connected, they need help. Who better to do this?

Breaux says that Cox can address these needs. But he’s not delusional when it comes to the limits of his firm’s capabilities. It’s why he oftentimes recommends and brings in partners — cloud providers, application vendors, IT consultants — when a customer needs something outside of Cox’s or RapidScale’s wheelhouse.

“We’re a 128-year-old company. We don’t make commitments to customers we can’t fulfill,” he said.

Given the uncertainty and newness of AI, Breaux believes that many customers often lack expertise and need a partner to ensure that their AI projects are value driven rather than expensive experiments. He’s concerned that companies can incur significant costs without driving business value. He wants his organization to help his customers ensure that they’re making the right investments and achieving the best outcome.

“They may not have the talent, the expertise. Even the courage! We consult with them to say: how might you approach this opportunity?”

So where is this all heading? Breaux sees a future where every business runs a multi-layered AI ecosystem — and innovative telecommunications firm Cox supports the whole life cycle. Breaux projects rapid acceleration in AI adoption and sees Cox as a long-term partner for infrastructure, cloud, connectivity and modernization.

So, it’s not just about Microsoft or Google or OpenAI. And it’s not just about infrastructure. It’s about connecting and then usability. And the firms in the middle of this food chain are the ones best positioned to help businesses get ROI from their AI investments.

## **The 2025 Stanford AI Index: Six Takeaways That Are Important for Your Business**

Last year, the Stanford Institute for Human-Centered AI, an interdisciplinary institute established in 2019 to advance AI research, education, policy and practice, published its 2025 AI Index Report, which aims to “develop a more thorough and nuanced understanding of the complex field of AI.”

The report had several important takeaways that impact all of us who run businesses. Here are the five biggest takeaways.

### **Large Language Models Are Getting Small and Mid-Sized and Cheaper.**

#### **The report says:**

*In 2022, the model registering a score higher than 60 percent on the Massive Multitask Language Understanding (MMLU) benchmark was PaLM, with 540 billion parameters. By 2024, Microsoft’s Phi-3-mini, with just 3.8 billion parameters, achieved the same threshold. This represents a 142-fold reduction in over two years. Depending on the task, LLM inference prices have fallen anywhere from 9 to 900 times per year since 2022.*

#### **Why this is important for your business:**

As I wrote, it’s becoming more affordable for businesses of all sizes to build their own AI solutions using company data from many different sources. The biggest obstacle remains the price of a developer or IT person sufficiently versed in these tools to do the work.

### **Problematic AI Jumps**

#### **The report says:**

*The number of AI-related incidents rose to 233 in 2024, reached a record high and registered a 56.4 percent increase over 2023. Among the incidents reported were deepfake intimate images and chatbots allegedly implicated in a teenager’s suicide. While this isn’t comprehensive, it does show a staggering increase in issues.*

#### **Why this is important for your business:**

AI is being used for bad stuff. As business owners, we have to let others worry about those terrifying Terminator-type risks that could destroy human civilization and instead focus on getting training and tools to combat the growing use of AI to fool our employees into downloading malware, opening up our systems for data breaches or inadvertently transferring money out of our accounts.

### **More Useful Agents Are Rising.**

**The report says:**

*AI agents show early promise. In short time-horizon settings (two hours), top AI systems score four times higher than human experts, but when given more time to do a task, humans perform better than AI, outscoring it 2-to-1 at 32 hours. Still, AI agents already match human expertise in select tasks, such as writing specific types of code, while delivering results faster.*

**Why this is important for your business:**

AI agents are rolling out this year, but few are worth using in your business due to their immaturity. That's for now. In the meantime, we should still be testing them and getting familiar with their capabilities. Within the next few years, agents will be commonplace, performing a great deal of work that our employees are currently doing. Some business owners will (rightly) see this as an opportunity to reduce staff. But smarter leaders understand that their job is to prepare their best people to leverage these tools to be even more productive.

**AI Investment Is Sky-High and Going Corporate.****The report says:**

*The U.S. widened its commanding lead in global AI investment. U.S. private AI investment hit \$109 billion in 2024, nearly 12 times higher than China's \$9.3 billion and 24 times the UK's \$4.5 billion. Businesses are turning to AI. In 2024, the proportion of survey respondents reporting AI use by their organizations jumped to 78 percent from 55 percent in 2023. Similarly, the number of respondents who reported using generative AI in at least one business function more than doubled, from 33 percent in 2023 to 71 percent in 2024.*

**Why this is important for your business:**

AI is real. Right now, it's a big corporation game with larger brands sinking hundreds of millions of dollars into agentic and generative AI systems that do everything from writing software code to autonomously handling customer service requests. Ultimately, these things will pass down to small and mid-sized companies that opt to wait for their core software vendors to introduce AI features into their business processes.

**Regulations Move to the States.****The report says:**

*U.S. states are leading the way on AI legislation amid slow progress at the federal level. In 2016, only one state-level AI-related law was passed, increasing to 49 by 2023. In the past year alone, that number more than doubled to 131. While proposed AI bills at the federal level have also increased, the number passed remains low.*

**Why this is important for your business:**

I'm not expecting significant regulations coming at the federal level in the short term. Most will be at the state level and focused on two things: misusing AI in the hiring process (it can be biased) or duping customers with questionable AI bots. Of course, many of these regulations will be decided on by regulators who may be challenged turning on their own TV sets, let alone understanding the implications of AI. But regardless, it will be important to monitor these rules in your state to make sure you're compliant.

The above five trends are important for business owners and managers to keep in mind as they're considering AI and other technology investments. And yet, as interesting as they are now, won't it be fascinating to see what their 2030 report has to say?

# How to Turn Your Accounting and CRM Systems Into ChatGPT in Six Not-So-Easy Steps

You run a small and mid-sized business, and every tech expert in the universe is telling you to “embrace AI” and warning that, if you don’t, you’re going to fail.

They’re a little dramatic. But they’re not wrong. So you have two choices. You can wait for your software vendors to develop AI features on top of their applications. Or you can build your own.

Unless you’re a huge corporation with lots of resources, building your own AI system was not a great option even as recently as a year ago. But there’s been a significant change in the tools available.

Let’s say you’re using an accounting system like Epicor, Dynamics, Sage or QuickBooks Enterprise for your quotes, orders, invoices, inventory and payables management. And let’s say you’re using CRM software like Zoho, Salesforce, Insightly or HubSpot for your sales and marketing. Can you turn these systems into an AI-based system so that you can query all this data like you can do with ChatGPT?

The answer is yes. But it’s still complicated and expensive for many small and mid-sized businesses. However, if you want to consider this option, then here are six not-so-easy steps you’ll need to take to do so.

## **Step 1: Hire a Developer.**

You’re not going to do this on your own, and all the remaining steps will require a human to bring the apps, tools and data together. A good developer will cost you \$150K-\$200K annually. The good news is that, thanks to AI, many tech firms and the government are laying off developers. So there’s talent available.

## **Step 2: Define Your Deliverables.**

How do you want to use your data like ChatGPT? You’re going to want to think of all the prompts you’ll be using such as “Give me the status of a customer order” or “Based on prior projects, how would I price this project?” or “What materials can we substitute to manufacture this product?” or “How much machine time should I consider for this job?” This will keep you focused on results.

## **Step 3: License an LLM Platform.**

Just like you would license a database like SQL Server to write an application, you’ll instead need to license an LLM (large language model) to be your ChatGPT. There

are lots of options available, and that's an entirely different article I could write. But you should know the big players: OpenAI, Llama, Anthropic, Google, Microsoft. All these companies will deliver to you a ready-to-go LLM model that can be populated with your data and trained.

#### **Step 4: Create Your Data Integration and Index.**

Now the really hard part.

You will need to use the APIs (application programming interfaces) provided by your accounting and CRM vendors to move data from these systems into your LLM. Or you can consider out-of-the-box data integration tools like Zapier, Fivetran, Airbyte, Talend or Make. Or your developer can write custom scripts.

LLMs are different than databases. A database has tables with rows and columns of data. In an LLM, data are unstructured. So, instead of having an invoice record showing date, customer, amount and description, an LLM would have the same information but in the format of "on June 12, 2024, Acme Corporation was invoiced \$354.60 for dry goods." This information needs to be indexed so it can then be prompted. Tools like LlamaIndex or LangChain can turn these data into unstructured chunks that can be queried.

Key information about this data needs to be stored in a "vector" database using tools like Pinecone, Weaviate or Chroma. Different than an LLM — which is considered to be the "brain" that understands and generates language — a vector database is a filing cabinet or a type of database that helps computers quickly find things that are similar to each other, like finding a photo that looks like another photo or a sentence that means something similar to another sentence. It works by turning things like text, images or sounds into sets of numbers (called vectors) and then comparing those numbers to find the closest matches. LLMs and vector databases work together.

Metadata filters then need to be created to make that happen. You'll also need to schedule workflows to update data from your accounting and CRM systems into your vector database and LLM so that your queries are using the most recent information available.

I'm simplifying this whole process. There's more work involved. And there are licensing costs, which can be significant depending on your data needs and usage. All of this should be investigated in advance and before you get started.

Now do you see why you need a developer?

### **Step 5: Build Your User Interface.**

ChatGPT has a very simple user interface. But there's a lot going on behind the scenes so that it can translate the prompts we submit into a format that its LLM understands. You don't have to build this from scratch. You can use dashboards like Streamlit, Gradio or ChatGPT's custom interfaces. Or you can develop and embed the interface into Microsoft Teams or Google Gemini. Your custom interface would need security to limit data access to users based on their logins and roles. Authentication, encryption and audit logs also need to be created and maintained.

### **Step 6: Train, Train, Train.**

Do you notice how ChatGPT and other chatbots are becoming better at answering questions? That's because, since their introduction in 2022, there have been countless millions of queries made to their LLMs, and with each query the system gets smarter. The same goes for your system. Your users will need to test and train and review and help your AI system become smarter too.

I recently showed these steps to a client, and they were overwhelmed by AI's complexity. They're not wrong: It is complex.

But it is something that can be done with the right developer in place using the right tools, including the ones I've mentioned above. For small and mid-sized companies that don't want to wait for their software vendors to catch up, or for those that have data stored in multiple places and need to consolidate to truly build a meaningful generative AI system, there is now a (somewhat) affordable path.

All of this will take time. Probably a year. Do you do this? Do you wait? At least now you have options.

# **AI in Accounting Is Here: Seven Game-Changing Innovations You Should Know About**

Over the past few years, there have been countless articles and columns from people predicting how AI will be used for and by accounting professionals. Finally, these predictions are beginning to become reality. Here are some interesting uses of AI in accounting that those of us in the profession should know about.

## **Reducing DSO**

People make mistakes when entering orders into their supplier portals. A finance platform called Tesorio aims to automate this process to minimize these mistakes and speed things up. The problems they're solving include incorrectly formatted or inaccurate submissions. Their agents aim to reduce the time it takes to fill in required fields and submit invoices to various supplier portals. According to Tesorio, its agents autonomously access these portals and submit invoices and then monitor the approval process. Not only would this help customers by expediting the ordering process, but it then reduces DSO — or days sales outstanding — which is the time it takes for the supplier to complete a sale and get paid.

## **Tax Research**

The U.S. Tax Code is long, and the interpretation of these rules takes up countless more pages. All of this is being turned into LLMs and trained with questions to deliver fast and reliable answers. One company doing this is Thomson Reuters, which recently partnered with AI platform Anthropic to build such a system with Claude, its popular chatbot, as its interface. According to Venture Beat, it's one of the "largest rollouts in the tax and accounting industry." Built on Amazon Web Services, the content also includes resources from 3,000 subject matter experts and 150 years of professional publications.

## **Expense Capture**

There are several companies leaning heavily into AI to automate expense capturing — be it through scanning, e-mails or synching with banks. For example, Fyle has something called "conversational AI" where a user takes a photo of a receipt and sends it by text which is then automatically categorized. SparkReceipt not only automates scanning and categorization of receipts but also accepts information from bank statements and other documentation. Dext says that it works with every major accounting software and integrates with over 11,500 financial institutions worldwide and creates "smart supplier rules that help to efficiently process and publish invoices." All these applications learn with each document so that their AI

algorithms can apply similar logic to other, similar documentation in lieu of a human having to do so.

### **AI Bookkeeping**

A tech firm called Briefcase raised \$3 million in 2024 to not only do expense capturing but also to use AI to automate the entire bookkeeping process. Its AI algorithms supposedly learn all the details from every transaction and then post all the way through to a company's general ledger. Briefcase acts more like an accountant than a bot. It's smart enough to detect duplicate invoices and receipts. It can also detect invoices that are prepayments (i.e. insurance) and then automatically schedules monthly entries to amortize and record the amounts. It can do the same with deferred revenue. Based on prior transactions, it will automatically create regular accruals and other adjusting entries.

### **Deliver Us From Spreadsheet Hell**

Regardless of how "automated" we seem to be, most of my clients are still finding themselves in spreadsheet hell, managing various Excel or Google Sheet files and manually updating them for reporting and analysis. LiveFlow uses AI to deliver us from that place. The company raised more than \$13 million for its AI Connector to bridge spreadsheets and popular accounting software like QuickBooks and Xero where information can be shared with teams without giving them access to the full accounting system. It positions itself as the intermediary between the accounting system and spreadsheets to enable up-to-the-minute budget vs. actual, cash flows, vendor spending and other analysis.

### **An AI-Driven Dashboard**

I like my clients to keep a thumbnail "flash report" of key information in their business. But because data are located in different places, it's time-consuming to put together. A startup called Finally raised \$200 million last September to connect data from financial institutions, accounting software and other sources into a single, easy-to-access location. Using a single login, Finally built a dashboard of all pertinent data like spending, account transactions, trends and other information related to a company's financial health which can be viewed anywhere and in real time. Its AI capabilities are used to identify abnormal expenses, unusual margins or unrecognizable transactions. As it learns, it makes better recommendations tailored to a company's financial history.

## **Agents in the Back Office**

Microsoft has rolled out 10 new agents targeting sales, finance, operations and customer service for its Dynamics customers. On the financial side, these agents will include using AI to “autonomously manage collaboration with suppliers to confirm order delivery, while preempting potential delays” and “help teams prepare and cleanse data sets to simplify and reduce time spent on the most labor-intensive part of the financial period-close process that leads to financial reporting” and “automate the matching and clearing of transactions between subledgers and the general ledger.”

Intuit, the maker of QuickBooks, is going all-in on AI. Intuit believes AI can be used to do a lot of the mundane, repetitive administrative work that’s wasting time. Its “Intuit Assist” is using agents to create invoices, match expenses, generate invoice reminders, convert e-mail exchanges into estimates, invoices and bills and schedule payments.

We’re still at the very early stage of using AI in accounting. The technology remains immature and unreliable. But it’s getting better. Last year, we saw the introduction of AI tools for brave accountants to try. But this year, usage will increase. By 2027, many companies will be relying on these and many other AI agents to perform a significant number of financial tasks. The best accounting and finance professionals will lean into these agents to help them do their jobs better. Those who ignore them will do so at their professional peril.

## **Recommended AI and Tech Tools for Accountants to Consider in 2026**

Thanks to AI, the world of technology is rapidly changing. As a certified public accountant, I've been testing and using various tools at clients and discussing with others in the profession. If you're an accountant like me, here are a few that I'd recommend checking out and potentially using — either at your firm or recommending to your clients — this year.

### **AI Assistants**

Every business professional should subscribe to an AI Assistant like ChatGPT, Microsoft Copilot, Google Gemini, Perplexity, Claude, Grok or several others. A good AI assistant will integrate with your office platform and your saved file systems like OneDrive, Google Drive or Dropbox. Your AI Assistant can help give you expert (although never perfect) advice on any business issue facing your firm or your clients. Also important, a good AI Assistant can create policies, review documents and suggest just the right wording for client communications.

### **Microsoft 365/Google Workspace**

Every good office needs a good office platform, and the two most popular are Microsoft 365 and Google Workspace. New AI capabilities can automatically create presentations, analyze spreadsheets, build macros, write proposals and quickly extract data from files in folders. For 2026, I recommend hiring a Microsoft or Google consultant (try LinkedIn) and getting your team trained. Not only will you realize all the tools that you're not using (which will increase your productivity), but your employees will become more familiar (and less fearful) of AI and better appreciate its value.

### **Paychex Partner Pro**

Paychex (a client of my company) offers a platform called Paychex Partner Pro (previously called AccountantHQ) that gives accountants instant access to their shared clients' payroll and human resources data from one simple dashboard, allowing them to save time and deliver smarter insights to their clients. Other major payroll and HR providers offer similar platforms. It's a great way to keep on top of your clients' payroll data and tax filings and identify potential HR needs that could be the source of additional business for your firm.

### **GenAI In Popular Accounting Applications**

Xero has Just Ask Xero. Intuit offers Intuit Assist For QuickBooks. Sage has its own version of Copilot. SAP has Joule. Most major accounting and enterprise resource planning (ERP) platforms offer Generative AI tools and assistants that help both companies and their accountants receipt data extraction, document classification, invoice and bill generation, invoice reminders and proactive financial insights into a company's data. All use similar natural language query interfaces akin to what you'll find in a popular AI assistant. Ultimately, these tools will replace how we analyze and report on all our data.

### **Agents in Popular Accounting Applications**

In July 2025, Intuit announced a “ground-breaking” team of AI agents to “fuel growth for businesses.” While agents still have a way to go before they're truly deemed reliable, many software makers like Intuit are rolling out their versions of agents to help do more work in the back office. Microsoft Dynamics, for example, is rolling out agents to handle sales order processing, supplier communications, financial and account reconciliations and time and expense reporting. It's important to get familiar with the current (and planned) capabilities of these agents not only to use within your firm but to help guide your clients.

### **BILL Accounts Payable Automation**

BILL is one of several accounts payable automation systems that many accountants are helping their clients to implement. These systems use optical character recognition to extract accounting data from vendor and supplier invoices and bring them into just about any mainstream accounting system for approval, processing and payment. Platforms like BILL are using AI to make more intelligent and accurate decisions and are helping to cut the repetitive tasks many accounts payable staff are performing to enter and pay invoices.

### **Meeting Transcription and Summary**

Products like Zoom, Teams, Meet and Otter are helping accountants and their clients save time and be more focused at meetings by “listening” in on conversations, transcribing them and providing detailed summaries and action lists for participants.

### **FloQast for Workflow Enhancement**

FloQast Accounting Transformation Platform says it's “built by accountants, for accountants” and claims to simplify workflows and enhance productivity. It enables accountants to build auditable workflows to automate tasks like accruals, journal entries and reconciliations — no IT required.

## **AI Bookkeeping**

Several startups like Kick, Pilot and Puzzle are using AI to automate the bookkeeping process. Similar to the technology used by BILL, these applications can automatically bring in data to their platform, post transactions and create journal entries, all without human intervention. As they mature, they'll become an indispensable (and profitable) part of any accounting firm's data-collection process from their clients.

## **Finally (of course) Tax Research and Preparation**

If there is one area where Generative AI is having an impact for accountants, it's helping them (and their clients) do tax research and prepare tax returns. Platforms and tools like TaxGPT, Tutti and Thomson Reuters are offering great applications that can help any accountant be a tax expert by finding and verifying important information as well as helping to prepare and manage tax return compliance.

There are many technologies available for accountants — and accounting and finance professionals — right now, and they'll only become more reliable with more choices in the years to come.

## **How Google's Project Jarvis Will Soon Eliminate Your Accounting Department**

There's a rumor that Google will soon be launching a major update to Chrome. But it's more than your typical update. It could be huge. And although it's targeted at consumers, there will ultimately be a major impact on companies.

The application is code-named Project Jarvis, and it's designed to literally take over your device and perform tasks as if you're sitting in front of it. Which means, just by giving a few instructions, it can go on to Amazon and purchase a product or Expedia to book a flight. All without a user doing a single click.

According to Google, it's nothing more than an "intelligent companion designed to simplify your life, from managing your smart home to effortlessly sharing files" where users can use its "user-friendly interface" to "get information, send messages or complete tasks."

Sounds innocent enough. But it's much, much more.

According to Betsy Burton at Aragon Research, Project Jarvis "represents a whole new step towards a future where AI seamlessly integrates with our digital lives." She says the integration with Chrome will be "almost an extension, but with the AI capabilities needed to understand your needs and preferences and work autonomously on your behalf."

Microsoft, IBM and Anthropic are working on similar AI agents, and, to be sure, all this technology is in its earliest stages. Google, for sure, is leading the way.

"I think about agents as intelligent systems that show reasoning, planning, and memory," Google CEO Sundar Pichai says. "They are able to think multiple steps ahead, work across software and systems, all to get something done on your behalf, and, most importantly, under your supervision."

It's still early days, but, rest assured, this technology will become better — much better — quickly. And the impact on companies once adopted into business applications will significantly disrupt the way work is being done. The best example that I, as a CPA, can demonstrate is how accounting departments will be impacted. Why? Because most of the work done by accounting departments involves mundane, repetitive data entry on screens. All of which can be ultimately replaced by Jarvis-like agents.

Think about what your accounting staff is doing. Then think about how a simple voice command to an agent can do this instead. Examples:

“Convert today’s approved open quotes to orders.”

“For all orders shipped yesterday, convert to invoices and send to customers.”

“Compare all cleared checks on our bank statement to checks written in our accounting system and generate a report of open checks.”

“For all customers with open orders past a promised date, send an e-mail updating their status.”

“Create a new customer record using information in this saved document.”

“Purchase six truckloads of materials from XYZ supplier at a price not exceeding \$1.00.”

“Make an estimated tax payment.”

All these things are now being done by inputting data into a device, usually a desktop. And, with all due respect to the people doing the work, none of these tasks takes much brainpower. All of them can be done by an intelligent-enough agent that becomes familiar with your accounting applications.

Is this over-hyped? One Reddit user echoes a lot of people I know when she says she’s cautiously optimistic.

“It could be a game-changer if it truly enhances our Chrome experience and workflow,” she writes. “But Google’s track record with AI products is hit-or-miss. The key will be how seamlessly it integrates and whether it offers real value beyond existing tools. I’m excited to test it out and see if it lives up to the hype!”

All of this is not without risks. Aragon’s Burton says that Project Jarvis “introduces a whole new host of security, privacy and ethical challenges.” It would ultimately have unprecedented access to your company’s data and be carrying out tasks mostly unsupervised. “There’s also the risk of over-reliance, with users potentially becoming overly dependent on the AI for critical tasks that may or may not be accurate,” Burton writes.

None of this is happening right away. But it’s going to happen pretty fast. My prediction is that the big tech companies that are developing agents similar to Project Jarvis will be licensing their technologies to software vendors. Accounting software vendors from Intuit to Sage to Epicor and SAP will be developing similar

agents on their own or may use Project Jarvis or Anthropic or Microsoft. As these agents become more dependable, they will literally be doing the work that your accounting staff is doing. Your payables and billing people should be taking note and updating their skills if they want to keep their jobs.

Because this is what it's all about, isn't it? Jobs. Productivity. Overhead reduction. I have clients who employ multiple people in their accounting departments doing data entry all day. They rekey data from one system to another. They attach documents. They enter and retrieve information. They move transactions to spreadsheets for more analysis.

All of this is done by moving a mouse along a screen, pulling down menus, clicking on links, identifying open fields, entering data into those open fields, clicking the save button and then moving on to the next transaction. Project Jarvis AI would easily replicate those actions. With less mistakes. All day and all night. And it doesn't need health insurance. It would get smarter as it learns.

You'll start to see this happening soon. Most accountants and business owners I know won't trust this technology. Many will resist. Accountants like me tend to be overly conservative. And people doing data entry inside of companies oftentimes get territorial. We hate change.

But having this attitude will put our companies in peril. Because younger, more innovative competitors will lean heavily into Project Jarvis and its competitors to help them run their companies as efficiently as possible. And, by doing so, they'll be able to quote prices much lower than those who don't while still protecting their margins.

# How Intuit, Xero, Sage and SAP Are Positioning AI to Change Your Accounting Department

You're running a small or mid-sized business. Or maybe you're a senior financial manager. You want to leverage AI to make your accounting and finance operations better and your people more productive. What options did you have then? Read on to discover them.

## A Bunch of AI Startups

There were many startups leveraging AI to do all sorts of things in accounting.

For example, Ember, Layer and Teal were developing applications that would embed within existing platforms to eliminate synchronization of data with accounting software. Rows, GPTEExcel and Numerous.ai were offering smart, AI-based spreadsheets (or formulas for spreadsheets) that, these companies promise, will "build better spreadsheets faster." Basis, Materia and Tutti were rolling out large language models to perform tax and financial research for both financial managers and outside accountants.

H&R block has "assistance" features that leverages AI to help file tax returns. Startups like Lili's AI accounting platform — which is targeted at very small and mid-sized businesses — promises that "your accounting and payments in one platform simplifies your bookkeeping and gives you a clear picture of your financial position." Several AI-based bookkeeping startups such as Kick, Pilot and Puzzle are also in the space. And there are vertical applications like FundGuard, which has raised millions for an AI-based application geared specifically for asset managers.

For the most part, the above applications — while showing promise — are in their relative infancy and are still in development. If you want to get in on the ground floor, go for it. But you may want to wait before buying.

If you're a financial manager, or an accountant (like me), then you're probably conservative and — unless there's a significant business demand — don't like to be on the bleeding edge of technologies. My clients are using well-established accounting software applications and — rightly so — are looking to these vendors to introduce AI features so they can increase productivity and help their businesses run more efficiently. So, when it comes to AI features, what can you expect to see from some of these bigger and more mainstream accounting software companies this year?

## **Xero JAX**

Xero, which has more than 4 million subscribers in over 180 countries, has introduced JAX. It's an AI Assistant that will do things like generate and edit a quote by voice command, alert when there's an overdue invoice (and help create the appropriate response), proactively prepare a payroll run in advance for review and approval and help with cash projections.

## **Intuit Assist for QuickBooks**

Intuit launched its Intuit Assist for many of its products late in 2024. For its flagship small and mid-sized business accounting platform QuickBooks, Intuit Assist offers a natural language reporting and analytics tool ("What is my income year to date?", "Who are my largest customers?") along with its AI advice on trends, issues and observations it gleans from a company's financial data. Much like Xero, it will also identify overdue and potentially overdue invoices and help craft responses based on the relationship with the customer.

## **Sage Copilot**

Sage's popular accounting software Intacct has its own AI assistant called Copilot, which also promises to perform similar functions as JAX and Intuit Assist such as preparing payroll for review and providing data and analysis of a company's financial operations on voice command.

## **SAP Joule**

Joule is SAP's AI assistant that will perform many of the functions I've described above but is also offering a more-advanced workflow-oriented experience for users. For example, it has a pretty cool process for resolving customer disputes and returning items that involves both a conversational interface and intuitive assumptions as to what's needed next in the process. This is more-advanced functionality than what's being offered by Intuit, Xero and Sage but lays the groundwork for the future.

## **And That's the Key Word: Future.**

For the most part, the AI functions being offered by these companies today are nothing more than a glorified version of ChatGPT. But they're being built using your company's data as their large language model. If you start digging into these functions, get ready to see words like testing, preview, waitlist, beta, trial and experimental. This is the software company telling you not to trust the results its AI functions are delivering. Yeah, they're just as nervous about this stuff as we are.

I've played around with these products and with Microsoft Copilot and Google Gemini, and the results are irregular and unreliable. Sometimes the queries just spin. Other times, the results are inaccurate. And even if the AI features work as promised, the incomplete and lousy data in my accounting system — which is my fault — produces the unsatisfactory results that you would expect.

The good news is that you can see where the train is heading. Some of the startups I mentioned above will fail, but others will flourish; and their AI tools will transform the way accountants and financial managers do their work. The AI offerings from Xero, Intuit, Sage, SAP and other smart tech companies will continue to evolve, get better and become more reliable. Right now, the media, PR and marketing are driving their AI offerings. Within a few years, it'll be their customers and competition that will be telling them what AI functions they need. Like all nascent tech, this will quickly improve as it's used more.

We haven't even seen the tip of the iceberg yet. Based on these early days, the future for AI in finance and accounting is exciting.

## **Balancing the Books: The (Very) Emerging Role of AI in the Accounting Industry**

For accountants like me, the promise of artificial intelligence is exciting. Why wouldn't it be?

The profession's biggest firms — like EY and PwC — are deploying AI technology in their auditing and financial-review procedures to identify irregular transactions or patterns of inconsistency. The technology could ultimately be used to perform a much deeper level of auditing analysis that can offer both investors and financial statement readers a more accurate and complete picture of a company's finances and at a more affordable cost.

Accounting software provider SAP recently released its AI assistant called Joule which promises — like Microsoft Copilot and similar offerings from Salesforce — to “provide customers with contextualized information and assistance when performing tasks in SAP applications.” SAP is already building an AI foundation layer with Joule sitting on top to help customers do things like create job descriptions and interview questions as well as analyze financial data, forecast sales trends and help with decision making.

In a keynote speech last year, Oracle founder and CTO Larry Ellison said that his company's Cloud capabilities will be leveraging AI to resolve customer service issues faster and — in the healthcare field, for example — help providers reduce their manual work through voice commands.

ERP maker NetSuite is adding AI capabilities throughout its financial products too. The company has recently added its own generative AI application called NetSuite Text Enhance for use across HR, finance, supply chain and sales. The tool promises to generate “content for any text area based on a few starter words that describe intent.” According to the company, “NetSuite Text Enhance helps finance and accounting, HR, supply chain and operations, sales and marketing, and customer support teams improve productivity by leveraging AI to produce relevant drafts that they can quickly and easily review, edit, and approve.”

These are just a few examples of accounting products and platforms that are starting to leverage generative AI. Other major providers from Sage to Epicor to Microsoft Dynamics, Xero and QuickBooks are doing similar, exciting things. But take note of the words in all these statements, press releases and news articles: They are “could” and “will” and “building” and “promises.” It's all just starting. Accountants should be aware: None of this stuff is ready yet for prime time.

Why? For three reasons.

The first is articulated well by Rajiv Rao, a contributing writer to ZDNet, who warns that, if you want to use AI tools for accounting, “you better think again.” Rao cites a recent survey that pitted ChatGPT against humans to solve accounting problems. Unfortunately, AI didn’t do too well, with students scoring an average of almost 77 percent correct answers vs. ChatGPT’s 47 percent success rate. “According to the study,” Rao wrote, “The LLM (Large Language Model) did fine on things like auditing but had trouble getting its artificial neurons around problems that dealt with tax, financial and managerial assessment problems — and these were sections that involved a lot of math. The output of these AI LLMs hinges on probability, and not accuracy. Output, by design, has been architected to represent an answer that has the statistically highest probability for the question asked. And numbers, sadly, don’t work like that.”

So AI really has a long way to go before it’s figuring out accounting problems.

Which is why you’re not seeing a lot of AI in the technical capabilities of these accounting applications. Even with all the hubris around the “transformative impact” of AI, what’s telling to me is that these new AI “features” really aren’t featured very much in these companies’ products. Research firm Gartner, which publishes its quarterly “Magic Quadrant” that looks at the leading Cloud enterprise resource planning (ERP) systems in the world, barely mentions AI features in the major accounting platforms in its latest report. Why? Because there really aren’t any, at least none that would make a difference to the accountants using these products.

Finally, even the software vendors themselves are telling the world that their AI offerings aren’t quite there yet. Per the sources I’ve reference above, few details of PwC’s AI technology have been disclosed, with the firm’s spokespeople admitting that “it feels like something we should be developing or exploring” and that early results showed the technology has “legs” for auditing. Analysts of SAP say that Joule “has promise” and that rolling it out will “take time.” And although NetSuite touted its AI tools in its recent press release, the fact is you have to read a little before you realize that most of the features added to the product’s new iterations have little do with AI.

This doesn’t mean that AI won’t live up to its promise. It’s just that the AI functionality teased by the largest accounting and ERP vendors is still being developed and we have a ways to go — maybe a few years even — before it gets rolled out, perfected and incorporated into our companies’ and clients’ financial

processes to the extent that we can actually rely on marrying this automation with our data.

For now, accountants and financial professionals should be paying attention and getting ready. We need to prioritize cleaning up our databases, going to vendor conferences, demanding demonstrations and understanding exactly how these tools will help us do things quicker and more affordably. That way, when prime time comes, we'll be good and ready.

## **J.P. Morgan Is Taking Big Risks With AI — and Businesses Everywhere Should Be Thankful**

In 2024, the Wall Street Journal interviewed Teresa Heitsenrether, who heads up the AI rollout at the nation's largest bank, J.P. Morgan. If you really want to know how AI is being used in the business world, then watch J.P. Morgan.

That's because J.P. Morgan is one of the many big companies that are on the front lines of AI. They're the ones spending countless millions on AI to improve productivity, increase profits and — let's not mistake this — keep their headcount as low as possible. They're not alone. Many big brands in other industries, from are, like J.P. Morgan, licensing AI models from OpenAI, Llama and Google to do the same. That's because AI is a big, corporate thing.

So, with all those millions being spent over the past few years, what was the status as of February 24, 2025, the date that interview was published?

"It's very early innings," Heitsenrether admitted. "First, we want to put the tool in people's hands and let them be able to ask questions and get answers. That already starts to spawn ideas, innovation, some productivity."

J.P. Morgan, like other big brands, has big plans. The banking giant has started with a generative AI rollout that's being used by about two-thirds of its 300,000 employees on "average for one-to-two hours a week." The platform is there to help internal employees do quicker research across multiple datasets so that they're better prepared for client interactions and internal meetings. It's also being used by customer service reps to look up transactions, documents, notes and previous customer interactions to more quickly and accurately resolve issues.

Heitsenrether's next plans include marrying the bank's AI platforms with its policies and procedures so it can learn to act like a J.P. Morgan professional. And then comes the big payoff: AI doing the work of humans.

"The third horizon, and we're not there yet, is for the models to be able to do more reasoning," she said. "What happens is they get a chance to think. OK, based on the complexity of the problem that you're asking me, let me think in the same way a human being would approach it. It lets the model find the resources it needs. Maybe it's going to go to the Internet or some system outside J.P. Morgan's databases. You can effectively take the workflow of somebody who's an investment-banking analyst or client-service person and teach the models the steps they would take to get their jobs done."

It all sounds exciting. But it's also extremely risky. Particularly for a conservative financial institution. Heitsenrether is going to have a lot of challenges. Differentiating and choosing between both public and private data which will invite copyright and intellectual property arguments. Minimizing the potential catastrophic costs of AI hallucinations which can cause wrong decisions and poor advice. Implementing controls to reign in its AI agents' behavior which can initiate incorrect orders, offer bad advice or generate inaccurate research. Navigating the bad press of replacing people with technology. Navigating client concerns about dealing with bots instead of actual humans, particularly when a bot can't understand human emotions and nuances.

Customers are fickle. People are dubious. Employees are frightened. Shareholders are impatient. And the technology? Well, we all know how unreliable that can be. I'm betting Heitsenrether has plenty of sleepless nights ahead of her, particularly those evenings before the next new AI thing gets rolled out.

And for this, all businesses should be thankful.

Countless soldiers died building Rome's Appian Way through enemy territory. Many workers perished constructing the Panama Canal. Astronauts have died in the pursuit of space travel. At J.P. Morgan, like other big brands, there's likely (hopefully) to be few deaths from their pioneering AI efforts. But there will certainly be costs. And mistakes. And potential lawsuits. And the loss of shareholder value. All of this to achieve a model of operating that is more automated, faster, more reliable and more accurate. This will not happen overnight. It will take years.

And, like the first roads of Europe and a new passage for shipping, the successes of J.P. Morgan will be shared by the rest of us. Big corporations are the AI pioneers. They're the ones figuring out how AI will benefit the business world and as they're testing it in real-life situations with actual people. New ideas will emerge, and new products will be developed. Ultimately, this trickles down to the rest of the business community as tech startups and other entrepreneurs watch, copy and develop cheaper and more efficient systems to market.

Despite the surveys you see, small and mid-sized businesses aren't really using AI. Not in the real world. Sure, we're dabbling with ChatGPT or other chatbots. But none of us are deploying AI in our core accounting, CRM, HR and operational systems. And we don't have the resources to develop, test, train and expand our own AI projects. We're waiting for this technology to be available someday so we can use it where it really matters. That day wouldn't be possible without big companies like J.P. Morgan risking their resources on these solutions.

Of course, they're doing it for their own benefit. But the rest of us will benefit from this too.

## **Can AI Predict the Next Unicorn?**

Can AI pick the best startup investment?

We all wish we could pick investments better, right? And if you're a venture capitalist or in private equity, doing so is your job. But how to know which startups will be the next Airbnb, Uber or Meta? How to tell?

Some platforms are now introducing AI-leveraged solutions to do just that: give an investor a strong indication whether an early-stage company is going to receive future rounds of funding and grow into that next billion-dollar unicorn. And do it with 95 percent accuracy to boot. Is this just fantasy?

### **Crunchbase Launches a New AI Platform to Help Pick the Best Startup Investment**

Not according to the team at Crunchbase. Last year, the company, known for providing historical data on tens of thousands of early-stage firms to its subscribers, relaunched itself as a new platform that will take this data, learn from it and then make predictions for its subscribers.

"The historical data industry as we know it is dead," said Jager McConnell, CEO of Crunchbase, in an interview with Venture Beat. "If you are a company, a data company, and all you're dealing with is historical data...I think you're going to find that you don't use it as much anymore in the future."

Crunchbase says that its predictions will identify — with as much as 99 percent confidence — which companies will be able to raise future funding, using a combination of private, public and "user engagement pattern" data. Crunchbase's new AI platform will answer questions like "What is the business model of this startup?" and "Compare startup A with startup B."

"The real magic behind our ability to predict key milestones in company lifecycles lies in our unparalleled breadth and depth of knowledge," Megh Gautam, Crunchbase's chief product officer, said. "We've built features that are generalized, not tuned to any single dataset."

But Crunchbase is not the only firm doing this.

### **Other Platforms Are Jumping Into the AI Investment Game**

Research service Morningstar has released its generative AI platform targeted at asset and wealth managers that can "process natural-language queries, read and understand hundreds of thousands of reports written by Morningstar's analysts,

gather investment information from Morningstar’s comprehensive databases, and then generate actionable, verifiable insights. Clients receive the answers they seek in seconds while getting time back to invest in higher-value activities. Clients can also layer their personal research, editorial, or support content to curate the platform’s responses.”

A stock-picking AI platform called Sentieo combines financial research, data management and analytics in one platform and allows its clients to track companies, analyze market trends and export data efficiently for further analysis.

“Portfolio managers can search through earnings call transcripts, SEC filings, and other financial documents to quickly spot trends, sentiment, and red flags,” the company says on its website, and “with its deep document search capabilities and visual analysis tools, analysts can gain insights from unstructured data, enhancing decision-making stock selection and risk management.”

Another platform called FinChat.io says it can “help quants with deep data analysis, market prediction models, and financial modeling, enhancing their ability to develop algorithmic trading strategies” all through its AI-leveraged tools.

Even OpenAI is in the game with ChatGPT-4. The company says that GPT-4 “excels in analyzing market trends and predicting investment outcomes. It is particularly effective for generating insights from vast datasets and automating trading decisions.”

Although none — other than Crunchbase — of these platforms are claiming that they can always make predictions for picking investments, let alone with 95 percent accuracy, these deliverables don’t seem far off. For now, most investment platforms are providing research using GenAI. But we can see where this is going. As these platforms become better trained and therefore smarter, many investment decisions will be made by algorithms without any human involvement. A lot of this is already being done with government bonds and stocks by mutual fund managers and larger Wall Street investment funds on behalf of their retail customers.

These tools will be used in conjunction with human investment analysts and serve as another expert voice in the decision-making process. They will do the grunt work — the research and number crunching — currently being performed by lower-level workers and will ultimately replace several of them.

But they won’t completely replace humans in the investment process.

That’s because startup companies are run by humans. And a significant part of any VC’s investment decision is not just the product, or the model, or the potential for

scale up and exit, but who is actually running the company and does this person have the necessary personality traits for ensuring their return on investment? Without looking in that person's eyes and spending hours in a conference room, on a golf course or at a bar, it's impossible to truly understand the person — or people — being backed.

One thing's for sure: no matter how good AI gets at data analysis, it'll likely never reach that level of human judgment.

## **Are Your Female Employees Dubious About AI?**

As AI use proliferates both in our personal and professional lives, one thing is becoming clear: Women appear to be less inclined to use the technology than men.

### **Studies Show Many Women Are Dubious About AI.**

A 2022 Pew Research study found that women in the United States were more skeptical than men about some uses of artificial intelligence. The study found that women in the U.S. were less likely than men to say that technology overall has had a mostly positive effect on society (42 percent vs. 54 percent). In addition, women are less likely than men to say they feel more excited than concerned about the increased use of AI computer programs in daily life (13 percent vs. 22 percent).

“Gender remains a factor in views about AI and technology’s impact when accounting for other variables, such as respondents’ political partisanship, education and race and ethnicity,” the study’s authors wrote. “Gender gaps also appear in the amount of concern Americans express about AI programs being able to perform repetitive workplace tasks, make important life decisions for people and know people’s thoughts and behaviors.”

Pew’s research dovetails with other analysis. For example, research firm Appfigures found that men make up 85 percent of ChatGPT’s mobile users. A study from Axios found that almost half of the females they surveyed said “It’s not even possible” to regulate AI, compared to just 23 percent of men. The study also found that 31 percent of men said they would or do let their kids use AI products like chatbots “for any purpose,” but just 4 percent of women agreed. In fact, 53 percent of women would not let their kids use AI at all, compared to 26 percent of men.

Harvard Business School Associate Professor Rembrandts Koning, who has authored a research paper on this phenomenon, has noticed that fewer women use the generative AI tools that he and his colleagues at the Digital Data Design Institute at Harvard have created for entrepreneurs around the world. His research reveals that women are adopting AI tools at a 25 percent lower rate than men on average “despite the fact that it seems the benefits of AI would apply equally to men and women,” he says.

### **Why Are Women Dubious About AI?**

Anecdotally, I don’t see this. The women in my life — my wife, daughter, work colleagues and clients — seem to use AI tools as frequently as the men do. But you can’t deny the research, and maybe something’s there.

I'm not a psychologist, I'm not a woman, and I'd be out of my depth trying to understand why this is so. So I really shouldn't be giving reasons why women are dubious about AI. But that's never stopped me before!

Women, in my experience, tend to be more practical and less skeptical than men which means that newer technologies like AI may need some more time to truly be proven before they buy into their value. Women, I feel, are generally more risk-averse than their male counterparts and by being so would rather not share or rely on information from AI Assistants. Women are surely more nurturing than men — it's why so there are so many more females in professions like healthcare, veterinary science and education — and many may be wary of chatbots due to their robotic and insensitive nature.

I do believe that many women can see the writing on the wall. Using OpenAI's deep research tool, I asked it to list the 20 jobs that will be replaced by AI, and many of these jobs — proofreaders, bookkeepers, social media marketers, content providers, customer service representatives — are performed primarily by females. If my livelihood relied on any of these occupations, I'd be very wary of AI chatbots as well.

### **Employers Need to Wake Up to Their Female Employees' Concerns.**

All these things are important for employers to know. Why? Because according to recent studies, almost half of our nation's workforce is female. If our female employees tend to be more dubious — or even suspicious — of AI, this has an impact on our businesses. AI will be replacing many jobs in the not-too-distant future. We're already seeing this at companies like Klarna, Goldman Sachs and Morgan Stanley.

Over the next few years, AI will be a growing part of our business. Already, some reports say that as many as 57 percent of small and mid-sized businesses are using GenAI. Big software companies like Microsoft are introducing agents to do a lot of back-office work that will replace the tasks being performed by our staff. Robots are creeping their way onto the retail and factory floor, threatening the jobs of our workers.

Our workers — especially our female workers — are seeing this too, and it may be having a deeper impact on their psyche than we realize. As business owners, our employees perceive us as eager to implement these technologies as a cost-saving tool. They're not wrong. They do have a right to be concerned. Their jobs are at stake.

But not as much as some think. Business owners and managers do want more automation. We want AI. But most of us don't want to use this technology to replace our employees. We can't find enough good people! We just want more productivity out of our existing workforce, and, if AI can help, then that's an answer. But clearly our employees — particularly our female employees — are skeptical. And rightfully so. So what should we be doing? Communicating and training.

We should be leaning heavily into the AI features provided by our existing software vendors, and we should do this by investing more in training. We should involve our employees — especially key female workers — in the rollout, training and adoption of these tools. The more comfortable our people become with these tools, the less hesitant they'll feel about using them. They'll realize that they can be better, more productive and happier employees. Many will overcome their fears that the technology will replace them and accept it as a tonic to their stresses. Others will allow the technology to do their work and embrace the opportunity to learn more skills and contribute in other ways.

There could be good news on the horizon. Although women's adoption of GenAI has been historically half of their male counterparts, a 2023 Deloitte study predicted that the experimentation with and use of generative AI by women will equal or exceed that of men in the United States in the next few years.

Maybe that will happen. Maybe not. But to the men who run businesses — and according to another report from Pew, approximately 76 percent of small and mid-sized businesses are still owned by men — I say this: pay attention. Our critical female employees are telling us something important. They have concerns about AI. It's our job to respond to and allay these concerns.

## **I Went to the Microsoft AI Tour. Here's What I Learned.**

Last year, I attended the Microsoft AI Tour at the Javits Center in New York. I officially went to a few sessions, unofficially peeked into a few others, sat in on Executive VP Scott Guthrie's keynote, mingled, walked the floor, had a sandwich, drank three cups of coffee, hit the men's room twice and still made my 6:00 p.m. train back to Philly.

Microsoft did a great job. There were, like, a thousand people there. Probably more. Check-in was fast with a QR code for those of us who pre-registered. The event was free, and it included a continental breakfast and lunch. There were plenty of smiling staff. And plenty of perky Microsoft employees, giddy with the Kool-Aid they'd been drinking. My only disappointment with the event was just how scripted the presentations were, leaving little room for the presenters to add their own color. Oh well, sign of the times. Maybe the bots will do better when they run these conferences in a few years.

More importantly, I was there to learn about AI and how Microsoft — one of the world's largest tech companies — was going to change my life and my business with it. I learned a lot. Here are five takeaways.

### **Small and Mid-Sized Businesses Can Now Develop Microsoft AI Solutions.**

This used to be an impossibility. Not so much anymore. Microsoft has rolled out more than 1,800 AI models on GitHub (yes, even DeepSeek we were told with a wink), countless other no-code/low-code apps, tools to work with more than 1,400 plug-ins on Copilot Studio and an upgrade to Fabric that brings together data from multiple places including texts and images and gives even the most inexperienced developer the ability to write queries using Copilot prompts while building a “lake house” of information. In the hands of the right developer, this can be used to connect in real time and bring in and train vast hordes of data from other systems — ERP, CRM, HR, you name it, even custom databases — into a company's own LLM.

Businesses with the capital and know-how can then use this stuff to build everything from a human-like customer service chatbot to an internal system that makes recommendations for inventory planning, project management, logistics or how much drywall is needed for 10 new residential homes under construction.

How much capital? A lot. Even though these tools are affordable, the overall investment wouldn't be cheap. You'd still need a \$200K-per-year developer, along with a few external Microsoft consultants to use them all. But this was not an option before. Now it is.

### **The Microsoft AI Publicists Are Obsessed With the Word “Human.”**

Every presenter took pains to say how all these AI tools will enhance human productivity, improve the lives of humans and create better human workers because hey...it's all about us humans. Let's go, humans! We rock!

But only a small number of the human attendees at this event actually believed this. Why? Because when a Microsoft manager jumps into Guthrie's keynote (it was scripted, of course) to gleefully demo how a very, very human-sounding and -looking bot answers questions and helps a visitor buy camping equipment, we can all read the writing on the wall. And it's bye-bye, humans! Sure, this stuff is great for consumers, but we know the “humans” who actually benefit from this technology, and it isn't the customer service reps who are currently doing this work and will soon be out of a job. It's their former employers who will be counting the money saved. When will these big tech companies finally admit the truth?

### **Agents Were the Buzzword of 2025's Microsoft AI Messaging.**

Second to the word “human” was the word “agent.” They'll be doing everything for us, behind the scenes, underneath the bed, in front of our faces...whatever. I watched demos and presentations showing how agents will soon order products from Amazon, do payroll, send out e-mail pitches and go after malware. Microsoft is releasing a bunch of new agents for its Dynamics product lines this year, and this is just the start.

Of course, no business manager in their right mind will actually rely on these agents during this first go-around because only fools rely on a version 1.0 of anything Microsoft releases. But these will get better, more accurate and more reliable over the coming years, and this event made it clear for me that agents are the future of AI in business.

### **Microsoft's Own People Still Don't Trust Microsoft AI!**

In two sessions — and I will not disclose which ones because I don't want nice people to lose their cushy jobs — the audience and I watched with knowing glances as the presenters referred to how “brave” they (or a colleague) was by actually demoing their Microsoft AI application live. What? This is brave? Glad to know I'm not the only who feels that way!

If they're so brave doing this in a demo, how brave do their customers need to be when it's real-life data? To me, it's still evidence that these applications — while great and exciting for the future — are still not ready for prime time. Maybe that's good news for all those customer service reps who will soon be replaced once this technology actually works. It gives them time to find new jobs...or skills.

**Finally, I Can Confirm That No One Knows How to Pronounce Azure.**

It's the elephant in the room. And it begs the question: who thought up that name? How did Microsoft's image and brand team approve this? The Oxford Dictionary says that Azure means "bright blue in color like a cloudless sky," and I get the connection to Microsoft's Cloud platform. Bright, blue, cloudless, smooth, beautiful, etc. etc. But is it Az-ir or Az-ore? I heard it pronounced both ways by actual employees at Microsoft multiple times. Geez.

I joke, but the Microsoft AI Tour was not a joke. It was a productive day. Microsoft is putting out some serious AI stuff, and if you're running a company of any size, you're a fool to ignore it. Talk to your software vendors. Get training. Watch a few YouTube videos. Bring in a consultant. One thing's for certain: Your best competitors will.

## Cool Technology From CES That Will Help Your Business

The Consumer Electronics Show is, of course, geared for consumers. And there were some amazing products introduced recently. Like robo-vacuums that suck up gallons of liquids, batteries that can power homes for days, mighty gaming laptops and gigantic gaming monitors, facial and palm recognition locks for your front door, fully transparent TV displays and even outdoor BBQ grills that are so smart they take the fun of out of grilling.

But what about technologies for businesses? CES had them too. Here are 17 that are worth checking out if you own or operate a business of just about any size.

**Apple Vision Pro** - Visual Reality headsets are still just for fun and popular with gamers. But a growing number of businesses are using VR to do everything from provide training, analyze construction sites, walk through new homes and provide remote healthcare. Apple's new headset — when actually launched this year — will provide a better-quality and more-immersive experience. It will also be a new opportunity for app developers. It won't be cheap, but I bet it'll be worth it.

**TCL RayNeo X2 AR Glasses** - Will employees at the weekly management meeting wear Apple Vision Pro headsets? I don't think so. However, and at only 60 grams, these glasses are much lighter, less ridiculous-looking way to immerse yourself in a VR world and — gasp — maybe the Metaverse one day? Tentatively expected to launch soon, the glasses may be a giant step towards providing a way to be in a VR world without looking like a reject from the '80s band DEVO. We'll see.

**Generative AI by iStock** - Nvidia and Getty Images have teamed up to provide an AI-leveraged way to create images from text using an inventory of non-copyrighted content. This looks like a great tool for businesses looking to revamp their websites, build out their marketing stock and enhance their overall branding without breaking any intellectual property rules.

**Belkin Auto-Tracking Stand Pro for iPhone Tracking** - It follows you everywhere, and you don't even have to make eye contact. This is an excellent tool for remote workers, in-office meetings and for creators/entrepreneurs to step up their online effectiveness.

**Lenovo ThinkBook** - Want to work in Windows? Check. Want to work in Android? Check. This device detaches and switches between the two — Windows for the laptop and Android for the tablet. Separate chips and all. This is a nice solution that can be shared by employees who prefer different operating systems and further removes your company's need to be dedicated to just one platform.

**Nvidia Chat with RTX** - According to the chip manufacturer, Chat with RTX — which became available in early 2024 — “allows AI enthusiasts to easily connect PC large language models to their own data using a popular technique known as retrieval-augmented generation (RAG). The demo, accelerated by TensorRT-LLM, enables users to quickly interact with their notes, documents and other content. It will also be available as an open-source reference project, so developers can easily implement the same capabilities in their own applications.” Running AI on large language models can cause latency and privacy issues. Doing this on your own device or server can address those issues.

**Swarovski Optik AX Visio Binoculars** - First of all, these binoculars are about \$5,000 to buy, so I’m doubting your typical bird enthusiast will be purchasing them. But the potential is enormous, not only for people in the wildlife and animal science industries but for any business — contracting, construction, transportation, military - that in the near future needs to leverage AI and use binoculars to immediately identify objects at a distance.

**OpenAI Custom GPT Store** - Could this one day be as big as the Apple App Store? It’s certainly possible. OpenAI has launched its own marketplace of apps using ChatGPT and other of its technologies that can be downloaded and used by both individuals and businesses. Already there are countless apps to help with productivity, image generation, training, research and programming. I am definitely going to take a deep dive into this site soon and find some good ones for businesses, and of course this creates many opportunities for tech-minded entrepreneurs.

**Asus ZenScreen Fold OLED MQ17QH** - According to the company, it’s the world’s first foldable OLED portable monitor. According to The Verge’s Eric Born and Sean Hollister, the monitor “promises to be lugged around without breaking your back or bag and it may do just that.” They also say that “when you fully flatten the screen, the crease really does seem to disappear, and it feels quite portable, even if we wouldn’t exactly describe its heft as featherlight.” For designers, engineers and others who need bigger and clearer screens while on the move, this is a move in the right direction.

**DJI’s Flycart 30** - With Walmart announcing that its drone delivery now covers as much as 75 percent of Texas, there’s no question that drones are becoming a legitimate way to get supplies, products and other materials into the hands of recipients inexpensively and fast. The problems have been distance and power, and drone manufacturer DJI has taken steps to overcome these challenges. Its latest model — the The Flycart 30 — is “a beefcake of a drone” and can fly up to 10 miles with 66 pounds of cargo at a cost of \$42,000. Freight is a significant expense for

many businesses, and I'm betting that drone solutions like DJI's will help reduce these costs in the years to come.

**Gatik's Self-Driving Trucks Plus Goodyear Smart Tires** - Autonomous trucking — like the vehicles made by Gatik — is becoming more of a reality and could be an enormous cost saver for both trucking companies and their customers. So why not combine these vehicles with tires that are self-monitoring air pressure and other issues affecting their use? “The real-time data derived from intelligent tire technology not only enhances the safety and predictability of our autonomous vehicles but also enables us to maintain high levels of efficiency, reliability and delivery uptime throughout our operations,” said Gautam Narang, Gatik CEO and Co-founder.

**Wi-Fi 7 Certification** - Let's agree that all this stuff needs a fast Internet. Well, it's about to get faster. The Wi-Fi Alliance, a global network of all the companies that bring Wi-Fi to the world, announced that it has finally certified Wi-Fi 7, a significant upgrade. Many companies in the space, such as Airties, Boingo, Broadcom, RUCKUS Networks, Intel, MaxLinear and MediaTek, have been testing out the latest iteration of Wi-Fi which promises to provide “unprecedented capacity and spectrum efficiency to support far more connections and immersive applications” and will be “open-source, and hardware-agnostic so that ISPs can gain maximum flexibility and control over subscribers' home broadband experience.” All of this means a faster and more flexible Internet within the next 12-24 months.

### **Battery Toaster**

Use Case: productivity for on-the-go employees

It looks kind of like a toaster, but, instead of toasting bread, it reheats batteries. Five at a time are saved in the unit. So, when employees need a new battery, they simply swap it out in seconds and are on their way. It's fast and eliminates the need to remember to recharge and bring a portable battery pack. There are drawbacks, however. A phone has to have a case attached which adds clunkiness, and the cost — at about \$450 — can be a lot.

Though not ready for prime time, keep an eye on the paper batteries, like the one introduced at CES by a company called Flint. According to CNET, “they're fully flexible and can be shrunk down to the size of a coin battery or embedded in a smartwatch strap. Flint's paper batteries share a structure with traditional lithium ion batteries, but that's where the similarities end. Their key component is cellulose, which acts as a natural medium for ion transfer between the anode and cathode, a critical chemical exchange necessary for batteries to work.”

## **Rollable Laptop**

Use Case: eliminate multiple monitors

Lots of people use dual monitors on their job. But is there a way to reduce the cost? This laptop comes with a 14-inch display, but you're not limited to that. And you don't have to buy another monitor. You can just "roll" it with your fingers to provide — according to Lenovo — 50 percent more display space, which can help employees show two browser windows of the same size on the same monitor. It's vertical, but that should be OK for writers and developers, and the less spent on buying more hardware, the greater the cost/benefit.

## **A Large Rollup Screen**

Use Case: quick meetings and events

Speaking of screens, how about a "grand cinematic experience" using a 100-inch display that comes with 60-watt Harmon Kardon speakers and that rolls up quickly and then disappears into a professional-looking, furniture-like case. It's smart and easy to use and can help upgrade your presentations and meetings.

## **Smart Glasses With Built-In Hearing Aids**

Use Case: Productivity for disabled employees

If you have employees with mild-to-moderate hearing concerns, they can consider getting these cool glasses that amplify sounds based on where they're focusing. The glasses (which are not yet available in the U.S. pending FDA approval) are a more attractive and convenient alternative to hearing aids (particularly for those employees who already need glasses because why have more hardware on your head than you need) and can help them do their work faster and more efficiently. According to the company, the glasses' "advanced beamforming technology, coupled with open ears and natural sound, allows you to effortlessly catch up on sounds that may be missed, especially in noisy surroundings" and "not only offers comfort and convenience but also ensures high-performance sound quality."

## **Normal-Looking Smart Glasses**

Use Case: Smarter employees on the go

Halliday Smart Glasses

These glasses — introduced in 2025 — allow employees to get real-time translation, do searches, get script and presentation prompts, receive notifications, capture

audio and get assistance with navigation, among other time-saving assistance. The units have a 12-hour life and, different from the awkward and bizarre looking headsets that awkward and bizarre gamers wear, actually look normal.

### **Autonomous Farm and Construction Equipment**

Use Case: more work done with fewer people

While car companies continue to struggle with autonomous vehicles that can navigate city streets without running over puppies, many companies are making self-driving vehicles that can be productively used in warehouses and on farms. John Deere offers a bunch of diesel- and battery-powered autonomous tractors and trucks that come equipped with advanced cameras and sensors that enable one employee to do the planting, crop spraying, dumping and moving work of multiple workers.

CES was all about consumers. But if you're running a business, try some of these technologies. One or two may definitely help increase productivity.

## **A Successful Tech Venture Capitalist Shares His Thoughts on How AI Will Impact Your Business**

Run a business? Want to learn what technology is coming that will impact your business? Then do what I do and follow the activities of Emergence Capital. It's a venture capital firm focused on early-stage enterprise software companies and has been behind some of the most disruptive platforms used by your business and mine such as Salesforce, Box, Bill and Zoom.

Of course, most of the conversation around technology nowadays is about AI and how it will impact businesses. That's Joe Floyd's job. A general partner at Emergence, Floyd has spent over 15 years advising and investing in "rocket ship" startups like Salesloft, project44, LogDNA and other similar companies.

So how will AI impact your business this year and in the near future? Here are some of his thoughts.

### **Voice Is Ready for Prime Time.**

According to Floyd, the advent of reading models is here, and they are getting extremely good.

"Prior, you really couldn't have a full-fledged voice AI agent that sounded human," he said. "And now for the first time, you can, and it's a combination of sub-500 millisecond latency. These really human-sounding voices have the ability to reason, understand where you are in the conversation, and then actually have the appropriate response."

Floyd says that AI voice agents are now outperforming humans.

"They stick to the call script repeatedly, and they never get tired," he said. "They never have a bad moment. They're doing it at a rate that is higher than the average success rate for humans. They just execute."

All of this is happening very fast, according to Floyd, and the winning companies will be the ones that are laser focused on strategies like: "I'm going to be the best voice agent for mortgage servicing and mortgage sales" or "I'm going to be the best at healthcare scheduling."

"There are real cost savings for businesses using AI voice agents," he says. "The ROI is just undeniable."

## **Agentic Workflows Will Explode.**

Floyd acknowledges that AI agents are — obviously — a big area right now, and he's looking closely at companies that are building proprietary models using agents that are improving workflows faster.

“We're seeing a lot of AI startups and companies that are taking over a manual process with agents, like document ingestion or communicating with customers to answer questions or perform compliance,” he said.

Will these agents ultimately replace humans in the workplace? Floyd says it depends.

“For example, AI agents will help accountants do all the boring stuff that they don't want to do, so that they can actually have the interesting strategic conversations that they want to have — and also serve multiple customers with the same staff,” he said. “Smart companies are providing tools to create small language models that are hyper-tuned to do one thing, and a larger model can choose one of maybe 40 different agents to get a specific job done.”

Floyd is also seeing a proliferation of voice agents being used for sales and customer support.

“These are things that both enterprise and small and mid-sized business will definitely adopt,” he said.

## **A More Efficient Use of Infrastructure Is Coming.**

There's still seemingly an unlimited demand for data centers and server space that can't be immediately met. But Floyd doesn't think the need to build bigger and more data centers will continue in the long term. Some startups are focusing on making the data better.

“At some point, you're actually not going to need to build bigger and bigger large language models,” he said. “What we're seeing is the post-training of large language models starting to take a much bigger role than pre-training. Models are staying the same size but are being pruned, not tuned, to make them better, and there's more of a premium placed on the quality of data, rather than size of the infrastructure.”

## **AI Will be Taking Over the Desktop.**

Tech companies from Google to Anthropic are already introducing AI applications that can take over a device and perform Web browsing activities with minimal human involvement. Floyd says this will continue to evolve over the next few years.

“You can imagine a world where there’s a website where humans can read and there’s also a website version that is machine optimized and readable, and then the software just goes to town without human involvement,” Floyd said. “As part of the operating system, an AI application is able to capture anything on the screen, read it, process it, and have it accessible to a large language model. It will have its own small model built in, which means that my data’s never going out to any public servers unless I allow it to. So I can say, ‘Hey, this requires a level of understanding that isn’t capable of the small model that’s running on my CPU. Go ahead and send this information out. Get me a better answer.’”

### **Quick Building Apps Are Starting to Come of Age.**

Just a few years ago, new applications from Web-building platforms allowed small and mid-sized businesses to create their own websites for the first time ever and minimize the need to hire an expensive Web developer. But these were still complicated, and the average owner was still not really able to use them. Floyd’s excited by new agents that can enable those same business owners to do this by talking in natural language and building websites on the fly.

“This is only the start,” he said. “Web applications now have their own databases that can enable small and mid-sized business owners to build their own applications — like a CRM or project management system — in the same way.”

Using one of these platforms, Floyd — who says he hasn’t written a line of code in “20 years” — was able to build his own CRM application “in under 30 minutes!”

### **Old-School Vendors Are Partnering With AI Startups.**

Floyd is not confident in the ability of legacy software vendors to build their own AI functionality.

“I think they will have absolute garbage, and I don’t think any of them will do anything interesting,” he said. “It is already being proven out that the startups are simply producing better, more highly tuned solutions.”

So what are older vendors doing? According to Floyd, the smarter ones are partnering.

“AI startups need data and distribution which the old companies have,” Floyd says. “And you’re seeing more of these partnerships than I think you ever saw before. I don’t think the legacy vendors will be able to build good AI solutions themselves. Some will be able to buy or partner their way into decent solutions.”

### **A Final Warning for Business Owners.**

Floyd warns that, if you're running a company and you're not adopting AI, your company just won't be around in five years.

"Even if you are a nuts-and-bolts company that you think has nothing to do with technology, your competitors will adopt it, and they'll out-compete you," he said.

Floyd says that small and mid-sized business owners are the ones who need to pay attention to AI most.

"AI agents are perfect for a lot of manual uses cases — like order entry, inventory management, answering phones, sending invoices, collecting or disbursing payments," he said. "One company I came across recently is helping physical store owners parse invoices for goods ordered and input that data directly into inventory systems. This is saving owners hours of manual work every week, and they are doing it at a fraction of the cost. I think there will be lots of use cases like this for owners and employees of these small and mid-sized companies."

## Why Google's NotebookLM Is a Killer App for Small and Mid-Sized Business

Previously, I wrote that Google's NotebookLM is "definitely not open for business yet." I've revisited. And now I can report: It is. Last year, it was shaping up to be the year's killer app for small and mid-sized business. Here's why.

It is your company's LLM.

For starters, NotebookLM is a mini-LLM for your business. It's simple to use. You and your team create folders for different purposes and then upload documents (mainly PDFs and text), connect other sites or link to YouTube videos. Yes, there are data limitations. But almost instantaneously, those data are available for anyone you choose to query with clear citations for the source of its responses. Google promises that data won't be used for any other purposes.

It uses external data.

Second, the data is used by NotebookLM in conjunction with other external data. So, if you're linking to outside websites or including references to external resources, NotebookLM recognizes that and brings that information into play as well as the internal information you provided.

It's an internal chatbot.

Third, it acts like any popular chatbot. Users can add manual notes to the folders which are then used as part of the LLM. Chats are stored. Folders can be shared both internally and externally. The other thing I appreciate is that its interface is — unlike many applications I use — simple. It's not full of useless options, menus, taskbars, icons and other garbage that gets thrown in front of me by software makers with the intention of making my life easier but instead complicates what I'm trying to do.

It speaks.

Finally, NotebookLM can converse with your team both by text and by voice. Much has written about its ability to instantly create podcasts based on the data you've uploaded, and that's fun. But, in a serious context, your users can choose to hear a conversation about the data with two human-sounding "hosts" instead of reading. This is useful not only for those who may have disabilities but also for those who are driving, jogging or are just better at consuming data when it's spoken to them instead of reading it.

How I'm using it now.

I'm just an independent user and am waiting to be accepted into the pilot program for NotebookLM Business, which promises more enterprise features and is already used, according to Google, by more than 80,000 organizations. However, I've still been using NotebookLM for my business in these ways.

**Job searches.** I've been looking for a developer to hire and recently placed an ad on a job search site. Different from my experience last year — when I attempted to do the same thing — I'm now able to upload every resume I receive and have NotebookLM perform analysis. I've asked it to create tables for me to import into my spreadsheet. But, more importantly, I've asked it to rank the most- to least-qualified candidates based on the job description, and it's helping my team and me to qualify those candidates. Already, it's saving me hours.

**Financial analysis.** I've uploaded my last few years of financial statements to a separate private notebook and asked it to analyze results and make recommendations. It's identified trends and anomalies that I hadn't noticed before. It pointed out to me expenses that were much higher than in years past and revenue categories that had significantly declined. I haven't uploaded my company's tax returns yet, but I plan to and then ask for tax advice, although, of course, I'll run any responses by our outside accountant.

Now that I'm sufficiently satisfied that NotebookLM is reliable and can work for my business, here's how I plan to use it going forward.

**Proposals.** I plan to upload all the proposals we've done for every client and prospective client over the past five years. That way, my team and I can query our proposal history for fees and services offered and answer any other questions for future proposals where we've had to dig into the past to find what we did before.

**Contracts.** I plan to upload all the contracts we've done with our clients over the past five years so my team and I can use that data to not only identify trends in what we did but also answer pricing and service questions.

**Policies.** We're a very small company, so it's not like we have a human resources bureaucracy. But, like any company, we do have our policies. My plan for my business — and to recommend to my clients — is to upload all of our policies (PTO, ethics, discrimination, hiring, social media, etc.) to NotebookLM so that, instead of having to answer questions about these policies, I can merely direct my employees to the relevant notebook let them get their answers on their own.

**Customer and vendor invoices.** When we bill a client for services, we send them an invoice in PDF format. When we receive invoices from our suppliers and contractors, we also get them either within an e-mail or in PDF format. Going forward, we're going to start uploading those invoices to separate notebooks, so, instead of having to dig into my accounting system, my team and I can quickly ask NotebookLM about customer and vendor billings.

Why not ChatGPT?

You may ask why don't I just do this with another chatbot like ChatGPT, Copilot or Claude? The answer is that I probably can. But we're a Google shop and use Workspace, Gmail, and other Google applications, so this makes the most sense and positions us for future integrations that the company promises. I'm also sure that, as all these chatbots mature, they'll be going head-to-head with similar functionalities and charging businesses for the privilege of using their services.

Will Google NotebookLM make sense for my business?

For NotebookLM to really make sense, it can't add more hours to my day, and that's my biggest concern.

To use it for proposals, for example, I still have to first enter data into my CRM system. Then generate the proposal. Then send the proposal to the client. And then take the extra step of uploading the proposal to the appropriate notebook so that my team can then access and query it.

My question: when will Google eliminate these steps? Do I really need to save these things as files anymore? Do I need to subscribe to OneDrive or Dropbox and store files in my folders on my device? Can't my CRM save the proposal directly to NotebookLM and can't NotebookLM be smart enough to "create" a file for me based on my instructions that can then be e-mailed to the client?

I think this will happen. But not right away. However, I'm not complaining. While big companies are creating their LLMs to do customer service, offer financial advice, monitor their employees or analyze potential deals, I'm happy to create my own little LLM to offer better and more accessible information for my team to help me run my business better. NotebookLM is doing that right now. It's shaping up to be a killer app for small and mid-sized business.

## **How Agents Will Disrupt Small and Mid-Sized Business**

Surveys are touting the “high adoption rates” of AI in small and mid-sized businesses. But this is just hype. Most of my clients aren’t really using AI like their much larger counterparts. But that changed last year. Thanks to a wave of AI agents, small and mid-sized businesses were finally able to start automating with AI like big companies are doing.

While corporate brands like Klarna, T-Mobile, UBS Warburg and J.P. Morgan were spending millions to create LLMs that can do everything from completing customer service inquiries, listening in on customer interactions, transacting investment purchases and behaving like human wealth managers, small and mid-sized businesses last year were mostly tinkering around with generative AI Assistants like ChatGPT and Claude or toying with Microsoft Copilot and Google’s Gemini for Workspace to help them write better e-mails or answer basic questions.

In the past, the AI story was big businesses building big AI applications. That’s because small and mid-sized companies couldn’t afford to build. But things changed. Instead of building their own applications, small and mid-sized companies tapped a wave of AI-enabled software that will far surpass the capabilities of the chatbots we’re now using. They’re called AI agents.

An AI agent takes generative AI to the next level. It doesn’t just generate a response or an e-mail or a document. It actually does something. It performs tasks. It initiates transactions. It fixes problems. It behaves like a human.

Microsoft, for example, last year rolled out 10 agents for its Dynamics 365 customers. These “assistants” will better qualify leads by conversing with prospects, confirm sales and purchase orders, reconcile invoices in one ledger to cash receipts in another, approve expenses, resolve issues, close tickets and schedule field service agents. The company plans “many more agents” in the near future.

CRM giant Salesforce is introducing SDRs (sales development representatives) and Einstein Coach agents that will also qualify leads before a human interacts, schedule meetings and then offer a video likeness of a person resembling the lead to help the salesperson rehearse their pitch through role-playing and by providing competitiveness analysis before actually conversing with their actual human target. According to the company, “The SDR gets you meetings, the coach helps you get better at your pitch.”

According to Intuit, which dominates the small and mid-sized business accounting software world, its soon-to-be-released agents will be “bringing together the power of GenOS, the orchestrator, large language models, GenSRF (Security, Risk and Fraud), and the UX experience, and it’s tying all that with what people really want, which is the ability to have work done for them.” Its financial agents will analyze a company’s cash flow and then pay bills accordingly. Those same agents will digest and understand e-mails, documents and images to automatically process invoices and apply cash.

In the healthcare world, chipmaker Nvidia has voice-enabled AI agents that will assume the role of nurses at a much lower rate per hour. In the software development world, firms like You.com have raised money to offer their “research” and “genius” agents that can retrieve reports and solve complex problems and better understand complex scientific concepts.

For both consumers and small and mid-sized businesses, both Anthropic and Google have announced new agents that can literally take over a device and then perform various tasks like Web browsing, button clicking and text input to perform any task that an employee normally does (e.g. “book a flight on this day and this time” or “order more office supplies” or “submit a customer service complaint”) with a single command.

Last year, small and mid-sized businesses weren’t just using AI to “generate” a response to their queries. They were leaning on AI agents to actually do something with that information.

The big worry, as always, is people. Although none of these companies will publicly admit it, their agents are doing the tasks that humans are doing, which obviously means that less humans will be needed.

For business owners who are already facing labor shortages and struggling to increase their company’s output and meet their customers’ demands without increasing their overhead, agents will be useful. In an economy challenged by demographic declines and immigration hurdles, they’re a godsend. And until these agents are paired with technology like Google’s Project Astra and robotics made by companies like Boston Dynamics and Agility Robotics, warehouse workers are still going to be in high demand. But that won’t take too long — probably a couple of years.

Should employees be concerned? Only the ones who don’t embrace this stuff to make themselves more productive and valuable.

The reality is that agents are finally going to start moving AI from the corporate boardroom to Main Street this year. It won't happen immediately. They won't work as well as promised (when does a new technology ever?). But rest assured that, like the Cloud, mobile apps and other technologies, our software providers will be pushing their customers to use their agents, and my smartest clients will do just that.

## How AI Is Killing the Harvard MBA

A recent study revealed that applications to MBA programs increased 12 percent last year, with finance concentrations continuing to be the most popular. To those MBA seekers — particularly those from Harvard and other fine institutions seeking their fortunes on Wall Street — I say this: buyer beware. Your MBA might not help you get that lucrative job. Why? Because AI is already killing your prospects.

Wall Street has its allure. From Gordon Gekko and Jordan Belfort to Logan Roy and Bobby Axelrod, Hollywood and the media have glamorized the wealthy who have conquered the investment banking world. The potential for riches has attracted the very best and brightest MBA students from Harvard, Stanford and other elite universities. Starting salaries at these top firms are \$150,000. But the costs are also high. Up until now, if you're willing to give up your life, blood and soul to your firm, you would have a chance — a chance — of sharing in the riches.

But things have changed. AI is seeping in. It's being used right now by those very same firms to kill off the vast majority of people they employ, which include many of those hopeful Harvard MBAs.

Goldman Sachs, for example, has funneled millions into a new LLM that is now used as a “copilot assistant” for its investment bankers. The AI-driven application searches through extensive public and proprietary documents to provide answers and extract analysis, translates multiple languages and summarizes data from millions of files.

According to the Wall Street Journal, the internal platform allows Goldman to “to fine-tune the models with its own internal data in a safe way and that complies with regulations.” Goldman employees can “access the platform directly to interface with various models” that can “answer questions and extract analysis.”

Investment banking giant Morgan Stanley recently introduced its “AI@Morgan Stanley Assistant,” a friendly name for this job-killing app that “provides quick access to Morgan Stanley’s intellectual capital.” Using OpenAI’s large language model architecture, the firm’s assistant quickly navigates through hundreds of thousands of research reports, takes notes during client meetings, summarizes key points and even sends automatic updates and tasks to attendees, including clients.

J.P. Morgan Chase is using AI for wealth management, consumer banking, fraud prevention and customer service. Its “ChatCFO” product is a tool for its clients to use to access the data they need to run their companies. Its “IndexGPT” application is “an AI-powered tool for thematic investing, using natural language processing to

generate investment baskets.” AI is being used at the firm to help its advisors make recommendations and summarize meetings and its banking group to determine “optimal locations” for new branches and ATMs using GPS and demographic data.

UBS has created an AI model for its Mergers and Acquisitions group that scans hundreds of thousands of target firms in seconds, generates buy-side ideas, identifies potential buyers and even highlights companies that are potential targets of activist campaigns which may be an opportunity...or a minefield to avoid.

These are just a few examples. Just about all of the big name investment banks and venture capital firms — from Citigroup, HSBC and Barclays to Sequoia Capital, Andreessen Horowitz and Tiger Global Management — are investing in startups that are building or buying applications and infrastructure and that can quietly sift through vast amounts of data to discover the next big startup, assess the financial health of their investment targets, determine market potential, and perform predictive analytics and decision support. These applications also have algorithms to forecast success rates and make quicker decisions.

Already we’re seeing the future. One report says that AI could also make the field harder to break into and alter the skills required for entry, with some banks testing tools that could reduce some junior banker tasks to seconds from days. Even Citigroup admits that AI could displace more than 50 percent of banking jobs.

What gives pause is that these applications are just starting. Some are less than a year old. Project yourself ahead just a few years. A single AI application will easily perform the research, calculations, analysis and problem solving that dozens — even hundreds — of high-paid Harvard MBAs have been doing on Google and spreadsheets for years.

Firms like Goldman Sachs and UBS can not only save thousands of hours of time using AI but will be able to make better, more profitable decisions. Why hire a Harvard MBA when you can have a robot do the work in their place and do it better, round-the-clock and without the need to cut holiday bonus checks?

This is what these firms are all about. They’re driven by math and data and profits, and, if technology can put a buck more in their partners’ bank accounts, it will be leveraged. Can’t blame them. Capitalism and profiteering start in lower Manhattan. God Bless America.

Of course, some humans will stick around. These will be the very smart and select number of MBAs who will be driving these applications and using them to profit themselves. They’ll recognize the technology’s power, jump on new ideas and

become its master. And Harvard and other top business schools have a long history of recognizing and adapting to trends to churn out valuable graduates, so it's more likely that their programs and students will adapt and evolve to meet the needs of the market. It will be interesting to watch.

## **Small and Mid-Sized Businesses Aren't Using AI Like You Think — Here's the Reality**

According to a new study from the U.S. Chamber of Commerce, nearly every small and mid-sized business — 98 percent of us! — said they are “utilizing a tool that is enabled by AI,” and, of these tools, 40 percent said they were “using generative AI tools like chatbots and image creation.” When one reads those numbers, you immediately think: Wow! Small and mid-sized businesses are really leaning into AI, right?

Wrong.

There are more than 30 million small and mid-sized businesses in the U.S., and I'm sure there are more than a few intrepid entrepreneurs who are leaning into AI apps and tools and platforms to help them run their businesses. They are pioneers. They're probably solopreneurs or run very small and mid-sized companies, where there's low risk if something doesn't work or “hallucinates” (which is another word for AI not working.) They're geeks and gamers and enjoy monkeying around with technology.

But most small and mid-sized business owners aren't like this. They run pizza shops and gas stations. They lay bricks and put up drywall. They sell parts to other businesses and provide professional services. Seven million of us have employees and have been around the block for a while. We know not to trust anything new from Silicon Valley until there's been enough time for testing.

Based on my company and my clients, I can attest that small and mid-sized businesses were definitely not substantively using AI in the past few years. But that doesn't mean we're not intrigued. We are. For us, AI is a way to keep overhead low and get more productivity from our existing employees. We know AI will substantially change the way we operate our back office. We can see how AI will leverage new machines — robots, drones, headsets — that will make us much more efficient and profitable. But not yet.

Ask any business owner and they'll tell you that “utilizing a tool that is enabled by AI” likely means the odd query using ChatGPT, Gemini, Anthropic or another chatbot. These platforms oftentimes provide good but not perfect responses and still cannot be relied upon. We understand the potential. But no one's taking them seriously so far.

A few unfortunate souls have been tinkering with Microsoft Copilot or Google Gemini in their office systems. Spoiler alert: neither works very well right now.

They lock up. They spin and spin with no results. They provide wrong or inaccurate answers. They sometimes disappear and then mysteriously reappear on our screens. But, like the chatbots, we also understand the potential of these tools. They will obviously grow better in the future.

Previously, small and mid-sized business AI utilization was mostly allowing a smattering of employees to try out a few apps to pretty up their profile photo, review a contract or transcribe an online meeting. Sure, technically this means “utilizing a tool that is enabled by AI.” But, in reality, it’s more like playing with toys that use a little bit of AI. We’re certainly not relying on this stuff for our core operations.

And can you blame us? Most small and mid-sized business owners — myself and my clients — would never trust AI to automate our internal processes. That’s because few of us actually have processes! And even if we do, we know that using AI would be a disaster since our databases that would drive any automation are typically inaccurate, incomplete and unreliable. My clients are also very concerned with the privacy and security of their data. We’re not sure we trust Sam Altman or Mark Zuckerberg when we use their Cloud-based AI offerings or that legislation passed by politicians who barely know how to plug in their TV sets is going to truly offer us protection.

Up until now, the real AI game was with large companies, not small and mid-sized businesses. Big companies like Klarna, Taco Bell, Walmart and many others were spending millions of dollars licensing LLMs from OpenAI, Google, Mistral and others. They were creating custom, internal AI-driven applications to perform autonomous customer service chats, listen in on employees’ conversations, generate countless investment scenarios, talk to customers on the phone and replace shop assistants with virtual assistants. That was how AI was being used then.

So don’t believe the hype. Small and mid-sized businesses aren’t really using AI...yet. But as infrastructure builds, developers get more experience and LLMs proliferate, we know that the software companies that provide the technologies that underpin our core operations — accounting, CRM, inventory management, HR — will be rolling out lots of AI functionality for us to enjoy. This will happen in the next few years. And small and mid-sized businesses will adopt. But for now, we’re just playing.

## **This Two-Minute Video From Google Shows You How AI Will Soon Turn Your Company Upside Down**

Whenever clients ask me how AI is going to impact their business, I always do the same thing: point them to a video from Google. It's only two minutes long. But if you're a business leader and want to know what's coming, it's a must-watch.

The video shows a Google Project Astra developer who points her smartphone at different objects and the "agent" — a Google AI application — explains what it's seeing. Very (and eerily) accurately. When asked, it points out a speaker that makes sounds, it creates an alliteration by looking at a group of colored pens, it immediately reads code from a screen and explains what the code is doing, it identifies the location outside her office window as Kings Cross, London and it even remembers where she left her glasses.

It's seeing everything. It has memory. It understands its surroundings. It knows the difference between a pen and a speaker.

According to Google, the "agent takes in a constant stream of audio and video input. It can reason about its environment in real time and interact with the tester in a conversation about what it is seeing."

This is real stuff. This exists. Imagine taking the phone she's holding and inserting it into a moving robot or a car or a plane. Or a missile. Or a drone. That's what's already here.

Some of this AI technology continues to trickle into the mainstream. For consumers, Google Maps can immediately identify where you are with a camera and point you in the right direction for walking, and Google Lens can immediately tell you about objects just by taking a photo. Apple's latest iPhone can see and describe things too. ChatGPT 4o is giving fashion advice and tutoring children. It's amazing, and it's still early days. Particularly for businesses.

But just you wait. Imagine a device — any device — that's able to use a camera to see and then understand what it's seeing. And imagine these devices have access to your company's internal accounting systems, files, documents and other data, as well as the Internet and any external data services where you have a subscription (start budgeting for that too).

Imagine pointing your device around your warehouse and it telling you what inventory you have in stock, when it was purchased, what customers use it, what condition it's in and whether it thinks you should order more based on prior levels.

Or a device that points out potential safety issues or OSHA violations. Or which employees are working on what machines and whether their skill set is right for the job.

Agents will drive autonomous forklifts and material carriers and power robots to lift things on and off skids. It's like having the smartest, most informed warehouse worker walking around your facility making sure everything is ship-shape.

Or say you're running a construction project. You'll have an expert project manager inside of a device — a drone, for example — that's checking on project progress 24/7 in all conditions and comparing to estimates and timelines. And checking on delivery of products and identifying that the materials received look right. That same device will help to identify safety issues, count inventory on site and visually inspect the quality of new structures.

Retail store and restaurant managers will be able to do the same with kitchen staff, inventory and managing capacity just by holding up their phones. Flight attendants can walk down the aisle of a plane, and the agent will be able to identify all passengers along with their status and potential health concerns.

The agent will be part of drones that fly autonomously around properties, vehicles that transport materials within a warehouse, robots that pick up boxes from a shelf and put them on a pallet, security cameras that take action on potential breaches and equipment that senses high humidity, shaking or other maintenance issues. The agent will leverage new AI-enhanced hardware to process what it sees and make decisions fast.

Since OpenAI released ChatGPT in 2022, there have been countless pundits prognosticating about the "future of AI," and for my clients none of this is real life. It's like watching an episode of Star Trek and acknowledging that, yeah, someday we'll be able to tele-transport ourselves to different places. But that day's nowhere near yet.

But this is near. Very near. Just take a look at the Project Astra video. This isn't the future. This is the present. This is now. This technology exists.

Google, Apple and other big techs won't be developing all these solutions. They'll be licensing their systems out to other tech companies who will be doing this. If you're running a business, these are the companies that are selling and supporting your current software and hardware platforms, your machinery and equipment, your communication and security systems. They're the ones who will be incorporating

this stuff. Talk to them. If they're not leveraging this existing technology — or have plans to — you'll need to find tech partners that are. Before your competitors do.

## **Eight Great AI Business Apps That Probably Won't Be Around Two Years From Now**

In 2007, the iPhone's introduction spawned an avalanche of mobile apps. When OpenAI introduced ChatGPT 3.5 to the public in 2022, the same thing happened: a proliferation of apps, tools and gadgets that use generative AI to accomplish certain business tasks.

Most of the mobile apps from the iPhone launch era are no longer around. It will be the same with today's AI apps. That's because these things usually take one of four roads.

A very, very, very few will actually scale into something big and become a genuine platform. Think Slack or WhatsApp or Square, which all started out as much small and mid-sized mobile applications and evolved. Some AI apps will get purchased by a bigger tech company and rolled into their offerings. Other larger software companies will simply write their own AI apps that replace the existing ones. A handful of these apps will stick around but will recede into the shadows as a niche tool with a small and mid-sized fanbase.

You can argue with me. But, in the end, 99 percent of the AI applications you hear about today won't be around in just a few years. It's not that they're not good. It's just Darwinism. Here are eight examples.

**Otter** - This is a great application that uses AI to monitor meetings, transcribe conversations, summarize discussions and create actions. Does anyone doubt that Microsoft Teams, Zoom or any other more dominant meeting platform will offer these same features? Most already do or are rolling out these features. Why get Otter when your existing meeting application already provides this functionality?

**Profile Pic Maker** - There are countless AI apps that promise to take a standard photo of any schlub like me and turn them into Brad Pitt (or at least a better version of themselves). Sounds impossible — particularly in my case — but it happens. I point out Profile Pic Maker because it's one of the best of them. But c'mon — as if this won't be built into the next camera app on your device? Of course it will.

**Eightify** - This is another great AI platform that can take long videos from YouTube and summarize them, saving users hours of watching time. So why doesn't YouTube just do this? Maybe it's because the longer someone watches a video, the more ads they watch, so that's a disincentive. Until YouTube makes this part of its paid offering or YouTube TV. Sorry, but I don't see this type of technology as a stand-alone long-term play. Perhaps as a niche survivor.

**Xembly** - I love this application. It uses an AI assistant to schedule meetings, navigate conflicts and create agendas. Among other powerful features, the platform literally lets users do this just by chatting with it or sending a message through Slack and then it finds the time on everyone's calendars. There's no question that this is a problem needing to be solved, and Xembly does a good job solving it. Until Microsoft, Google, Slack and all the other larger customer relationship management (CRM) and workspace app providers just build this into their own platforms — or buy Xembly.

**Rask** - This app converts videos into 130+ languages in a matter of minutes. Very cool. Will YouTube offer this feature? Hmm...130 languages plus more viewers in more countries equals more eyeballs and...ka-ching...more advertising dollars. Seems like a no-brainer. Or otherwise, will a larger video production platform — say Adobe — do the same? Of course they will. Even so, this could still survive as a niche product for video people who are fans of a certain type of production software that doesn't offer this functionality out of the box.

**Lavender** - Because I'm in the CRM world, I've played around with Lavender, and it's fun. The software will "coach" you to write better e-mails. It'll score the e-mails you write and offer improvements and personalization suggestions. "Become an e-mail wizard!" the company promises. "Level up your team! Make e-mail magic happen!" As if Salesforce, Zoho and every other major CRM player won't just do the same? It's only a matter of time.

**AskJack** - Want to create a large language model for all your company's documents and files? This way, you can train your LLM so that your employees can ask it anything about your policies, procedures and rules and get accurate and consistent results. That's what AskJack will do, and this can apply to human resources, operations, help desk, customer service and legal departments. But wait...both Microsoft and Google are already doing this by creating LLMs out of a company's e-mails, calendars, OneDrive and Google Drive documents. Within two years, any Office or Workspace user will have the same functionality that AskJack offers.

**SpeedLegal** - Here's a specialized LLM for contracts. The AI application bills itself as a "negotiation partner" for both lawyers and non-lawyers that will help identify risks, explain legal jargon, make tailored suggestions and give other insights about any legal documents or contracts you allow it to review. Assuming the output is reliable (I admit to not testing it yet), I wonder long term who will use this tool? Won't this kind of thing be included in a mainstream law firm platform like Clio or Smokeball or be made available to consumers via bigger players like LegalZoom and LegalShield? Probably so.

Agree? Disagree? To be clear, these are great apps, and I highly respect the people who developed them. I'm also assuming that a few of the app makers aren't looking to be the next Snapchat — they're doing what they're doing to create new tech and make a few short-term bucks. Good for them. But for the rest, I'm just hoping they've got a good exit strategy. Because things in the AI world are moving fast, and most won't last on their own for very long.

## **AI for Manufacturers: Hype vs. Reality**

To write this column, my plan was to research how AI was impacting manufacturers so far. Spoiler alert: get ready to be underwhelmed.

Here's what I found: There's a lot of hype and a lot of rosy predictions right now. A writer at TechTarget lists "10 AI Use Cases in Manufacturing." Another blog talks generally about "The Increasing Use of Technology in the Manufacturing Industry." Research firm Forrester paints a picture of the "future" for manufacturing AI. A manufacturing group's site lists the "manufacturing technologies that are shaping the industry."

It's all very general, and it can be exciting. But it's not now. What about now? What about the next 12 months? What's hype and what is the reality of AI for manufacturers now? Here's what I've learned.

### **For Starters, It's a Big Company Thing.**

For all the hype about AI, it's still a very big company thing. Sure, there are surveys like one from GoDaddy that said that small and mid-sized businesses were getting benefits from AI. But this is literally scratching-the-surface kind of stuff. While small and mid-sized businesses are using simple Generative AI products to write blogs or create policies, big companies like Klarna are spending millions of dollars building AI chatbots that are replacing hundreds of customer service reps. BMW and Amazon plan to introduce "humanoid" robots powered by AI brains to "free up" workers, and Tesla is almost halving its production time to build cars using AI-powered 3D printers. Corporate investment in AI "is surging," says the Wall Street Journal.

The list goes on. AI is a big company game right now. Eventually, these applications will become commoditized and affordable for the rest of the world. But not this year, for sure.

### **Today's AI's Manufacturing Solutions Are Custom Solutions.**

There are lots of apps for creating profile pictures, writing essays and concocting recipes. But there are no significant "apps" for manufacturing worth mentioning right now. There are no big advances in AI functionality built into mainstream manufacturing, ERP, order entry or inventory management applications. As I wrote above, this will happen. But not yet. Corporations with big budgets are spending big with firms like Mobidev, Innover, Pleora Technologies and many others are in development to build their large language models with integrated data that can be

custom trained on the organizations' internal processes and proprietary information.

Someday, the software companies that serve most businesses will have these AI-driven tools available as part of their feature set. But, if you want software that truly leverages AI in your manufacturing business today, you're going to need to build it yourself.

### **Manufacturing AI Is Leveraging Existing Technology.**

AI isn't creating anything new right now on the plant floor. Instead, it's being used to upgrade existing software and hardware. A quoting solution that's been around for decades is using AI to construct better queries on its existing architecture. A robot that's been used for sorting and palletizing items on a production line is now getting an AI upgrade to better identify and adapt to those products. An existing drone line can now do more independent things because an AI drives it. Big brands are now slapping sensors on the machinery and equipment they're already producing to monitor vibrations, humidity, heat and several other factors that are reported for maintenance or self-remediated.

The hardware and software are the same. But their brains are getting an upgrade.

### **GenAI Has Its Limitations.**

Generative AI is certainly powerful. But it's just getting started. We're only in the first year or so of the LLM phase, where models are being built, tested, trained and — most importantly — litigated. GenAI is limited because it's immature. It also carries a lot of risks ranging from hallucinations (getting it wrong) to misinformation to losing control of itself. Today's AI applications are built around the GenAI model and — a year and a half after OpenAI's groundbreaking release of GPT 3.x — they're already looking old. Even OpenAI's CEO Sam Altman recently admitted that the current version of ChatGPT "kind of sucks" when compared to new releases on the horizon. Both Altman and chipmaker Nvidia's CEO Jensen Huang have said that Artificial General Intelligence (AGI) — the holy grail of AI where the software performs is as good as, if not better, than humans — is only a few short years away.

Altman and Huang like to downplay the hype around AGI, but I believe that, when this happens, AGI-driven machines and robots will be able to truly do what humans do and with these capabilities will significantly disrupt everything from assembly to formulations to materials movement on the shop floor.

### **The Best Place to See AI Is on the Road.**

It's still early days for manufacturing AI. But hardware companies, software companies and equipment makers are investing heavily. And for manufacturers, the best place to find out what's coming is to talk to your vendors...and go on the road. Visit conferences like FABTECH, PROMAT and MODEX — among the many others in the manufacturing space. Go to your industry trade show this year. Stop by the exhibitors' booths.

In the past, you could miss one of these events every year or two. But not this year. This year, companies are quickly rolling out new products and upgraded technologies that are leveraging AI, and the best way to get up to speed on them is to go and watch them in action.

That's the AI reality of AI for those in the manufacturing space.

## **From Microsoft to Nvidia to Boston Dynamics...Here's How AI Is Being Deployed on the Shop Floor**

If you own or manage a manufacturing, distribution or warehousing facility, it's time to get serious about artificial intelligence. That's because the technology is starting to mature into something that is actually generating ROI. Software and hardware vendors are rolling out AI technologies both independently and as part of their existing products, and leveraging these technologies is critical for increasing productivity, reducing overhead and increasing profits.

### **Robotics**

Manufacturing and distribution businesses of all sizes are investing heavily in AI-powered robotic technologies for the shop floor. Walmart is rolling out autonomous forklifts driven by AI software. Amazon is deploying hundreds of human-shaped warehouse robots to lift and move packages as well as independent drones to monitor traffic, safety and workflow. A German company called Robco is lending out robots that perform lathe turning, laser engraving and palletizing (the robots can then be reconditioned and used for other customers as needed). Other robots are being used in food processing and baking operations to independently mix ingredients and then load finished products into cartons and cases.

Some think that humanoid robots are just in the movies. But that's not the case. They're appearing more frequently on the shop floor — alongside and in lieu of workers.

For example, 1X creates an abundant supply of labor via safe, intelligent humanoids for the manufacturing floor. Agility Robotics is pumping out tens of thousands of humanoid warehousing robots. Boston Dynamics now makes an electric-powered version of its humanoid robot Atlas. Apptронik's Apollo is a general-purpose humanoid robot designed to work in the plant and the office.

Unbox Robotics offers a bunch of AI "swarm robotics" to "accelerate the parcel sortation and order fulfillment to facilitate efficient express logistics operations delivering seamless end customer experience." United Robots produces AI-powered robotic cleaners, disinfectors and carriers that do everything from removing microbiological contaminants to safeguarding workers to tugging heavy loads or carts. Other humanoid robots designed to perform all sorts of industrial tasks — and winning awards— are now available (or coming soon) from companies like Figure AI and Sanctuary AI.

The robots on the manufacturing floor are controlled through the Cloud using platforms provided by NVIDIA (the chipmaker refers to the new platform as “a general-purpose foundation model for humanoid robots”) and the aforementioned Agility Robotics, which the company says can “command a robot army, say, to start moving bins to a conveyor belt at a particular time.” Not sure I like the sound of that, but OK.

### **Internet of Things**

Industry Week’s VG Govindarajan and Venkat Venkatraman write that smart companies like Rolls-Royce are using “fusion technology” being powered by AI to turn yesterday’s equipment into thinking, intelligent machines.

“Tractors have become ‘farm-based computers’ linked to precision agriculture Cloud systems,” they write. “Rolls-Royce offers ‘Power by the Hour’ agreements for its aircraft engines. This approach ensures that Rolls-Royce is responsible for the maintenance and performance of its engines, with costs linked to the hours that the engines are in operation.”

Firms with complex processing applications — particularly larger power generation, oil and gas, chemical and food and beverage manufacturing companies — are now implementing AI platforms like Uptime AI which uses sensors to monitor, analyze, evaluate and alert when there are disruptions, malfunctions or other problems that can create anomalies, loss of efficiency and safety issues.

Other software firms and hardware manufacturers are partnering to create Internet of Things (IoT) sensors that are using AI technology and models. The sensors are then installed on manufacturing equipment for the purposes of “making hardware smart” using audio, video, vision, temperature and pressure sensing.

### **3D Manufacturing**

A variety of companies like Fathom Digital Manufacturing, Protolabs and Stratasys are using AI to “dramatically accelerate the product development cycle” that allows manufacturers to design, create, test and evaluate prototypes in “a matter of days, rather than weeks or months.”

### **Consolidating Data Into Large Language Models**

For AI to work, large databases must be built from disparate information.

One company called EthonAI has launched a new software platform that they say “is designed to provide managers and engineers with a ‘sixth sense’ to follow what’s

happening within their factories more closely.” The platform brings together data from multiple sources and then uses AI to make recommendations for management.

“With AI tools, it can be easier for companies to identify patterns that produce poor quality products and implement changes quickly,” says Rae Hartley Beck. “When a greater percentage of final products pass quality control, less waste is produced and more value is created for companies.”

In 2024, another company — Sight Machine — announced a partnership with Siemens AG to create a manufacturing data platform for collecting, contextualizing and analyzing all types of manufacturing data to improve production. Sight Machine’s software “analyzes the entire history of production runs to determine the best settings for the current conditions.”

Microsoft announced several initiatives to bring data under one roof using “Copilot templates” so that their customers can “create their own copilots.” The idea is for employees to use natural language queries to retrieve data, like asking the large language model why a machine is breaking and getting insights to help resolve the issues faster.

Manufacturers in the auto industry are reportedly investing in internal AI applications to help improve production scheduling, minimize line stoppage, test chemical mixtures, align data from different sources to better communicate with suppliers and customers, and source materials based on real-time availability around the world to reduce supply chain bottlenecks.

In the back office, Cloud computing platform ServiceNow has released financial, customer service and operations software designed specifically for manufacturers that uses AI to do things like automatically recommend replacement parts for customer maintenance, automatically manage customer exceptions, communicate independently with suppliers, and autonomously log a problem and deploy a field technician with the necessary knowledge, skills and equipment to manage the task. Other manufacturing software makers like Epicor, SAP and Sage are rolling out similar AI-based functions.

OpenAI’s ChatGPT was released in November, 2022. It created a flurry of activity, jump-started a tidal wave of investments, launched countless startups and forced every software and hardware company to double down on their AI offerings. Less than two years later, manufacturers were beginning to see the results of these efforts. And we’re just getting started.

## **You Own a Manufacturing Company. Here's How to Use AI This Year.**

You're a small or mid-sized manufacturing company.

You're not Amazon, and you're not Toyota. You don't have robots crawling over your facilities, and you don't have hundreds of millions to spend on automation. You weren't born yesterday either. You know that, like all new tech, AI is still in its 1.0 version, and you're not going to risk your business on immature and untested applications. And yet you can also see where things are going: AI will certainly have a dramatic impact on your business in the not-too-distant future, timeline unknown. So, for now, do you do nothing?

No, you can do something. You can start leveraging AI in your manufacturing business. Here are a few ways how.

### **Sign on to an AI Assistant.**

This year, it will be critical that you and your senior and mid-level managers subscribe to one or two of the main AI Assistant players — ChatGPT, Gemini, Copilot, Claude, Perplexity or Grok. There are many others, but these are the leaders. None are perfect, but then again, who is? No document, agreement, bid, proposal, quote or other correspondence should leave your company without first being uploaded to your AI Assistant for comment and advice.

Train your people to use these tools to create new policies first before having them reviewed by your attorneys and experts. Connect these tools to your internal data — OneDrive, Google Drive, Dropbox, Teams, Gmail — so that you can search and get answers about your company's information. Use it for research. Converse with it about your business. Ask for advice. You will be smarter, get better answers and be more productive when you lean into a good AI Assistant.

### **Lean Into Microsoft or Google's Office Tools.**

Chances are your company runs on either Microsoft Office 365 or Google Workspace. Each has its own AI tool — Copilot (Office) and Gemini (Google). Hire a consultant from LinkedIn or a similar site and get your entire staff trained on these capabilities. They've come a long way. Use these AI tools to more quickly create presentations, transcribe and summarize online meetings, translate calls in different languages, write e-mails, analyze spreadsheets and manage data. Not only will your staff be more productive, but they'll be less fearful of what this stuff does and be better at their jobs.

### **Build an Internal Solution.**

Thanks to a proliferation of tools available now, you can build your own AI system using your own data. You can create your own large language model and synchronize data from your ERP, accounting, inventory management, HR and CRM systems into it. You can create your own agents and perform automated tasks with minimal human involvement. I wrote about the steps you need to take for Forbes last year. It's not cheap. But it may be a good direction for your company.

### **Buy an External Solution.**

Don't want to build something internally? You're not alone, and you're not wrong. Doing that can be time-consuming and expensive and probably out of your wheelhouse as a small and mid-sized company. Instead go to the manufacturing software providers that you use — Dynamics, Sage, Epicor, SAP, Acumatica, Infor, NetSuite or whatever. Have their product people walk you through all the current and forthcoming AI functionality they're including in their products to justify the ongoing monthly fees they charge. Figure out what makes the most sense for your business, adopt, clean up your data, then train your people and implement. Do this in small bites.

### **Leverage Your Things.**

It's the age of the Internet of Things, and most of the best AI advancements are hidden in the form of sensors on manufacturing equipment. Major suppliers from Boeing to Caterpillar to Hitachi have multiple sensors using AI on their engines and equipment which monitor everything from humidity to output to potential safety issues. Your suppliers are likely doing this too, and you need to ask and understand. This data can now be sent wirelessly to a large language model where AI-leveraged applications can analyze, interrupt, remediate and notify.

Consider also augmented reality devices like HoloLens, Vision Pro and Ray Ban Meta which can help do inventory, identify safety issues and train employees. Use small drones in your warehouse from companies like Gather AI, Vimaan, Verity, B GARAGE and Brightpick to cycle count inventory and monitor production. All these technologies exist and have significantly come down in price.

### **Finally, Watch Robotics.**

Only the big companies are investing in robotics, but that's quickly changing. Companies like Boston Dynamics, Atlas Robotics, ABB, FANUC and KUKA are using AI when creating robotic arms and human-like imitators that can move product, count inventory, pack and seal. Robotics shows worth attending include the

International Robot Exhibition (IREX) in Japan and the Consumer Electronics Show (CES). Go to one of them so you can see all the new stuff that's real life and making its way to your manufacturing floor. Start thinking about where you can deploy robots in your facility and hone in on a few of the manufacturers of these devices that you like. I'm betting that, within two to three years, you'll be investing.

Your manufacturing business is going to be significantly changed by AI in the next few years. This is absolutely going to happen. Right now, the technology isn't ready for prime time. But, as it approaches adolescence and then adulthood, no manufacturer will be able to compete without doing all the things I have listed above. You've got about two to three years to prepare. You should start now.

# **AI Software and Hardware Products Disrupting the Construction Industry...and the Blunt Truth About Them**

If you're running a construction business or team, you want to be up to speed on the software and hardware that are integrating the latest artificial intelligence tools so that you can leverage these features to get work done faster, cheaper and with greater accuracy. Over the next few years, there will be a proliferation of technologies that will be using AI to disrupt the construction industry. But there are plenty of great tools available right now to consider. Here are a few.

## **Project Management**

Project-management software is now using AI for the following purposes:

- automatically assigning tasks based on roles and availability;
- creating and optimizing new projects based on prior projects;
- tracking actual vs. budgeted expenditures with alerts and suggestions;
- forecasting completions based on prior projects, milestones, timelines and activities;
- automatically communicating and responding to both team members and clients;
- identifying anomalies in project progress compared to similar projects;
- providing real-time internal and external analytics.

Applications to check out: Procore, ClickUp, Kwant, BuildStream, AutoDesk

## **Training and Remote Management**

Virtual and augmented reality headsets are now being deployed with AI capabilities on construction sites and in the office to enable:

- training for new workers in a controlled and safe environment;
- identification of safety issues;
- recording of project process for further analysis;
- visual confirmation of projects for offsite team members;
- on-demand review of designs and plans.

Products to check out: Microsoft HoloLens, Magic Leap One, Meta Quest

### **Surveying and Inspections**

Companies using drones, mobile devices and autonomous vehicles are providing their products to construction customers who use AI to:

- conduct visual pre-surveys of project sites;
- analyze conditions;
- monitor project progress;
- track worker safety;
- patrol physical spaces and then create models;
- take images of physical spaces to calculate distances and volumes.

Companies to check out: DroneDeploy, Scopito, Pix4Dcatch, Mapware, PrecisionAnalytics, Airworks.io

### **On-Site Worker Support**

AI technology is now being used to power robots that are already performing some of the basic tasks that workers perform such as:

- welding materials and removing waste such as nails and other materials from scrap materials;
- lifting and moving objects around a job site;
- autonomously transporting materials;
- monitoring sites for safety issues.

Companies to check out: KUKA Robotics, ABB Robotics, Boston Dynamics, Dusty Robotics

### **Building Design**

New CAD/CAM software products are using AI to:

- create and model new designs based on prior or similar projects;
- suggest design enhancements;
- identify potential design flaws and structural issues;

- perform predictive modelling based on a designer's instructions;
- suggest energy savings;
- analyze historical project data and simulate different scenarios;
- optimize resource allocation;
- assist in generating 3D models;

Applications and companies to check out: Fusion360, Bentley Systems SYNCHRO, Alice Technologies

### **Estimating**

To do an estimate, it's common to have drawings, plans or photos of the potential site. Estimating tools are now leveraging AI to read those documents and files to:

- identify spaces and sizes at a location;
- calculate dimensions, weights and other measurements;
- compare prior and current plans for differences;
- identify potential problem areas;
- automatically pull in products from prior purchases to determine costs;
- suggest labor hours and materials required;
- create draft estimates for review.

Applications to check out: Tocal.ai, CountBricks, PlanSwift

The blunt truth: These products are expensive.

They will require a significant amount of time, resources and dollars to truly use them the right way. Many that I've included above are likely out of the wheelhouse for many small and mid-sized construction firms.

Project management applications take time to implement. Virtual reality headsets need programming. Surveying and inspection technologies also require programming as well as equipment maintenance and replacement costs. Robots, while coming down in cost, are still a big company thing and are far from perfect. Building design software requires a certain leap of faith and much validation. Estimators need training and support to properly use the AI features in their software.

Their AI capabilities are still in their infancy. Justifying the return-on-investment may be difficult. Just like all those miraculous mobile apps that appeared after the iPhone was introduced, it's a guarantee that some of these products will die on the vine, as will the companies behind them.

But...it's still exciting. Now that the cost of storage, processing and Cloud computing has decreased so much, the door is open for a new wave of AI-based technology that will change the way construction firms do business in just the next few years. Those mentioned above are ahead of the pack and worth a look.

If you're running a construction company, it's important that you stay on top of these technologies. As they mature, you'll find their use of AI will help you increase productivity, reduce overhead and grow profits. And I'm betting your competitors will be doing the same.

# **AI in Construction: Actual Stories About How AI Is Actually Being Used Today**

Search for articles on how AI is used in the construction industry and, if you're like me, you'll start getting frustrated. There are countless thought pieces from thought leaders about all the ways that AI can and will change the industry but very few that tell actual stories of actual technologies that are actually being used by actual construction companies. The good news: This is starting to change. AI apps for construction companies are hitting the market and maturing. These are actual products from actual companies that are actually available right now.

Here are a few stories about them.

## **Home Remodeling**

An excellent piece by Nancy Keates in the Wall Street Journal highlights a few home remodeling applications like Renovate AI, Reimage AI, Digs, Skipp and other tools that enable individuals to reimagine a new kitchen, bathroom or bedroom and share with their designer, architect and builder. For the contractor, this saves time and helps clarify projects.

"Many of the AI apps are aimed at improving the speed and communication for homeowners working with an architect or designer," Keates writes. "Some homeowners say the tools are already offering a newfound leg up in managing their projects with the pros."

## **Robots on the Construction Site**

GeekWire's Kurt Schlosser tells the story of a pilot program in Seattle where builder Skanska is using robots from Nextera Robotics to provide high-resolution, 360-degree photographic images so that Skanska's development team can keep "near-constant eyes on a project site."

Meanwhile, Boston Dynamics' Spot the Robot Dog's "agility and athletic intelligence" to "get around job sites that other robots can't" is reporting project progress, accessing hazardous areas and detecting health and safety issues.

## **Robots Putting Up Drywall**

In 2022, Jeff Rubenstone of industry site Engineering News Record reported on a drywall installation robot offered by a company called Canvas that is "able to semi-autonomously finish large sections of drywall" and is "changing the way some drywall teams perform their work."

“The robot focuses on broad spaces, high-volume sections, as well as hard to reach areas like high spaces and corners,” the company’s CEO and co-founder told Rubenstone. “The machine can handle the application of the finishing compound and the sanding of it. Workers do the taping and handle the more complex geometries.”

### **A Custom ChatGPT Construction Application**

A startup called Togonal.AI has launched a ChatGPT-based application that enables construction companies to upload charts, designs, documents and other files into its own large language model so that workers can chat, query and get answers to questions conversationally.

“With hundreds of pages in construction plans, ChatGPT will help Togonal.AI users save time, improve accuracy and serve as a powerful tool to eliminate mundane tasks, so estimators can focus on higher-value jobs,” the company’s founder and CEO said in a press release.

Togonal has another app that uses AI to help quickly search images for specific objects, symbols or tags (e.g. how many sprinkler heads are in this landscaping design plan?).

### **VR Images Created From Designs**

A Bay Area-based company called Resolved is now selling virtual and augmented reality apps that use AI to walk through job sites and then “virtually perform safety inspections, emergency procedures or lock out/tag out to ensure alignment with building operations needs.”

The app also integrates with leading construction software platforms like Procore to convert Business Information Modelling (BIM) files into “fully immersive VR walkthroughs” so that teams can collaborate on project status, specs and progress.

In a case study, Resolve says it saved one construction client more than \$3 million by flagging “over 1,000 potential issues during collaborative VR review sessions” that would have been “missed with traditional review processes.”

### **Converting Videos Into Projects**

OpenSpace.ai enables workers to walk around job sites while automatically capturing videos and then converting those videos directly into BIM designs.

The company is targeting construction company owners, general contractors and tradespeople to provide an effective way to monitor job progress and keep projects

updated using AI-leveraged video tools. According to one case study, a member of a field team “simply straps a 360-degree camera to their hard hat and walks the site once or twice a week, and imagery is automatically mapped to project plans and stored in the Cloud, which makes it simple to locate images from different points in time.”

### **Drones Converting Images Into Data**

There are several companies that use AI to power drones. One example is Skycatch, whose drones offer a “suite of Deep Learning–based analytic tools for automatically cleaning and extracting value from data” with one of its uses focusing “on geological features such as toes, crests, safety berms and stockpiles.” Drones are no longer just cameras in the sky. Companies like Skycatch are converting photos and videos into data and then helping to project job progress and automatically identify safety and maintenance issues.

The hype of AI in the construction industry is receding, and the reality is taking hold. Numerous startups are building applications, hardware and robots that will historically change the way projects are done. Right now, there’s a stream of new AI technologies coming to the market. Within the next few years, there will be a flood. My advice to business owners in this industry is to start swimming.

# AI in Construction: A Few Game-Changing Tools Every Contractor Should Know

According to some industry reports, the AI in construction market is expected to grow from about \$4 billion today to almost \$12 billion in just the next few years. There's a lot of new technology coming. But if you're running a small or mid-sized construction firm, what AI tech could you be leveraging this year to increase productivity and products? Here are a few real-life products and companies that you should be considering.

## Drones

Drones have come significantly down in price and are being used by a number of firms to track quantities of materials, progress, employee movements, security on job sites and safety issues. Firms in this industry say that, when deployed the right way, drones can decrease surveying and inspection time by as much as 90 percent. The big players in this arena include DroneDeploy, Pix4D and Propeller Aero.

## Robotics and Building Automation

While we're still a ways off from humanoid robots replacing workers, there are other types of robots that are already performing functions on a job site alongside their human counterparts.

For example, robots made by Canvas can perform drywall finishing and create a "digital twin" of all work performed for quality assurance. Products from Dusty Robotics will map out project areas and print full-scale floorplans directly onto slabs, eliminating layout errors and reducing rework. Boston Dynamics sells a robot dog called Spot, which can reach places deemed hazardous or unsafe for inspections, safety checks and observation.

Using robotic stations and data capture, a company called Trimble delivers hardware, software and services used in construction, infrastructure, geospatial sciences, transportation and logistics that use AI for "precision positioning, data modelling, analytics and connected workflows."

Built Robotics offers AI-driven pile drivers that automatically navigate to a pile's precise location based on a digital project plan where it then drives the pile to the specified depth with minimal operator input, allowing a single operator to perform the task typically required by a two- or three-person crew. RIC Technology offers 3D printing robots that can autonomously build both commercial buildings and residential housing. Versatile attaches sensors to its cranes to track load paths, cycle times and idle equipment, which helps to identify productivity bottlenecks, unsafe operations and reduce overall equipment costs.

Once a building is up and running, AI is being used to improve the conditions inside. Driven by proprietary technology and model predictive control algorithms, Siemens Comfort AI

continuously optimizes indoor comfort and energy performance, running autonomously across building portfolios without manual intervention.

## **Project Management**

Procore is a major software player in the construction industry, and what it's doing to advance AI should be watched closely. The company has recently rolled out its Procore Assist which serves as a conversational AI Assistant that provides contextually relevant answers on demand and helps its users to find information needed from specs, RFIs, submittals and building codes in seconds. New features include multilingual and mobile support as well as a photo intelligence option which can also allow users to summarize project progress and provide safety insights from analyzing jobsite photos.

Procore also announced late last year that its Agent Builder product had entered "open beta" and once fully tested will allow users to automate workflows by building custom AI agents to meet the unique needs of their business including generating RFI content, searching project documents for answers and automating jobsite reporting.

Autodesk's Construction Cloud is leveraging AI to better predict project risks from thousands of prior jobsite datasets, identify subcontractor performance issues before they impact schedules and help to detect quality and safety issues.

If you're interested in building your own app, you may want to look at what construction firm Skanska is doing with its AI chatbot called Sidekick, which is designed to help the company explore catalogs of data from its numerous projects without introducing secret or proprietary information to the public domain. Built using the same tech as ChatGPT, users can ask Sidekick questions, and it responds with answers based on a collection of internal data that will remain within Skanska's proprietary cloud. The product is for internal use only and will not be sold commercially, but it provides a good example of how larger companies are licensing large language models to develop their own solutions.

## **Estimating**

If you're an estimator, you're looking for applications that can help knock out your estimates as quickly and as accurately as possible. iBeam claims it's the only AI-assisted fully automated construction takeoff (which is the process of identifying and measuring all the materials and labor needed to complete a project, based on drawings or specifications) software that delivers estimate-ready outputs. Other companies providing similar functionality include Togonal.AI, which reads blueprints and performs takeoffs automatically, reducing estimating time and mistakes.

## **Augmented Reality**

Thanks to products like Meta's Orion, augmented-reality devices are looking much less bizarre than they did just a few years ago. And, while Meta is a big player, the number of these devices are proliferating, thanks to Apple's Vision Pro and Microsoft's HoloLens as

well as several smaller competitors. These glasses are not only growing in use but are now benefitting from several new applications that are turning them into an important tool to have on the construction site.

For example, a company called OpenSpace has Vision AI that can perform 360-degree camera walks and then uses its AI technology to compare jobsite progress to BIM (Business Information Modelling) models and schedules. The company says its device can “instantly show what’s behind walls” and flag delays, missing materials and safety hazards.

Buildots offers hardhat-mounted cameras and AI software that automatically detects deviations from design, tracks quantities installed vs. planned for billing accuracy and may be helpful in reducing disputes between various parties working on a job. An engineering-grade helmet made by XYZ Reality says it can do “super-accurate model-to-field overlays” that will prevent rework, speed up QA/QC inspections and perform real-time deviation detection.

If you’re fan of HoloLens, Orion or Vision Pro, you’ll find custom solutions from Unity, Trimple and Fologram that can overlay BIM models on jobsites, visualize “clashes” before building, provide guidance on layout and installation and enable remote collaboration and real-time project design markups as well as offer on-site visuals, real-time simulations and immersive walkthroughs of projects.

These are all technologies driven by AI that exist now. They’re still in an early stage but becoming more accurate, reliable and consistent enough that a growing number of construction firms are leaning into them to help increase productivity, improve quality and grow profits.

# When Will Small and Mid-Sized Businesses in Construction Truly Adopt AI? Tech Company Trimble Urges Patience.

In the construction industry, AI use cases are beginning to grow.

## Construction Industries Slowly Adopting AI

At my clients' jobsites, I'm seeing a number of surveillance drones that are keeping track of safety, job progress and weather conditions as well as more foreman equipped with augmented-reality headsets to assess job status, identify open areas and point out potential safety concerns.

Robots won't be replacing plumbers and pipefitters anytime soon, but robot dogs are already being used to send back data from hazardous areas or places considered too risky to send a human. 3D printers, autonomous material movers, stand-alone drilling and mixing machines and IoT-enabled protective clothing are now contributing to more productivity on the job.

What about the back office? Here I'm seeing new features in project management, such as estimating and Building Information Management (BIM) software systems that are leveraging AI to scan, capture and process data faster and more accurately and on a larger scale than a person could.

## How Trimble Plays the Role of Connector

This is all about better ways to collect and then use data. But who sits in the middle? As all these data are accumulated, how do you connect one system to another — and then analyze the information? One company, Trimble, is doing this part.

Trimble is a Colorado-based technology company that provides software and hardware to help its clients — many of whom are in the construction industry — plan, design, build, measure and manage projects that connect what happens in the office (design, estimating, project management) with what happens in the field (surveying, machine control, scanning, site data capture and 3D takeoff/data prep). Trimble says its technology streamlines the entire project life cycle — from estimating and design to project management, field operations and financials — and uses AI tools to unify data, improve collaboration, reduce errors and waste, and give real-time visibility into costs and progress.

Trimble, like others in the construction industry, is heavily leveraging AI to provide a better and more productive experience for its customers. In fact, it was doing so long before AI took off in the public narrative. According to Mark Schwartz, a Senior Vice President at the company, Trimble had AI invoice recognition and routing in its ERP system "before ChatGPT was a thing."

"Old-school AI-machine learning and photogrammetry have been in our products for years," said Schwartz.

For companies like Trimble, AI readiness is less about hype and more about data connection and workflow integration, which unintentionally prepared it for today's AI moment. Schwartz says that his company has had a longtime strategy to enable better connection and scaling of different software systems which set them up to use generative AI faster.

### **Getting Small Businesses on Board**

But when will small and mid-sized businesses (SMB) bite? Sure, many are dabbling with generative AI chatbots. But the day will soon come when they will move more towards back-office systems to improve their operations. For Schwartz, there's little question that the opportunity is there.

"We heavily serve the small and mid-market...because it's so underpenetrated with technology," he said. "Once they start using one or two things, it's like the enlightenment comes."

Two other factors will come into play: tech-enabled bigger companies that will subcontract down to smaller organizations and pull them into their tech-enabled ecosystem and a growing number of younger people trained on newer technology at an earlier age. As this plays out, more SMBs will find themselves being drawn faster into using AI internally. But companies like Trimble know that this will take time because SMBs have little room for error.

"For SMBs, they want the Google Workspace version," Schwartz says. "They're like: give me the five tools that just work."

And many SMBs remain dubious, particularly because of the less-than-reliable AI results many have seen in real life. Even Schwartz admits that, while today's AI can be "excellent for productivity," it's also dangerous when deterministic accuracy is required.

"I don't think any of us want to go to the 52nd floor of a high-rise designed entirely by an AI agent" he said.

So, when will there be a tipping point for SMBs? For Trimble and Schwarz, it's all about patience. He believes it will be as trust in AI is built gradually through narrow, high-value workflows. But adoption doesn't have to be aggressive.

"There's plenty of productivity to be had right now without forcing the issue," he said. "It's important for SMBs to use it in the most relevant workflows, and that will build trust over time. People will realize that, for many tasks, the 90 to 95 percent answer is good enough when it can be done in seconds versus days."

## **Forget White-Collar Dreams — AI Is About to Make the Trades the Job of the Future**

While standing on the sideline watching a high school soccer game, my friend, who owned a small and successful construction company, complained that his son — a senior — was starting at a respected local university that fall which would cost roughly \$200K over the next four years.

“I could take the same money and set him up in a contracting business,” he said. “It would be a much better investment.”

That was in 2010. The kid did go to that college and graduated four years later with a degree in history. Where do you think he is now? Working in the construction business. I’m betting that, if my friend and I had that conversation in 2025, things would have turned out much differently. College tuition is a dubious investment. The trades — particularly construction — is a much better bet. And for that you can thank AI.

Ask anyone in the construction business and they’ll complain about the lack of skilled workers in their trade. The numbers support these concerns. The Associated General Contractors of America reported this past year that 92 percent of firms had a hard time filling positions, and 45 percent delayed at least one project due to labor shortages. A worker shortage model from the Associated Builders and Contractors estimates that the industry must attract 499,000 workers in 2026 to meet demand. The National Association of Homebuilders estimated in 2025 the number to be as high as 723,000 annually.

Why the shortage? Among the reasons are that younger workers have gravitated away from working with their hands over the past few decades in lieu of cushier office jobs. Older workers are getting older: the National Center for Construction Education & Research estimated that about 41 percent of the current construction workforce will retire by 2031. And the current administration’s immigration policy had not only dried up the flow of potential overseas workers but has driven many construction workers — even those with proper documentation — underground.

The building of data centers has surged over the past few years, and construction workers on those projects are in such high demand that they’re seeing pay jumps of 25 percent to 30 percent compared to their previous jobs — and in some cases, much more. Good for them, but, according to Fortune, that’s not going to last .

What will happen very soon is — as interest rates continue to fall and new tax incentives begin to take hold — a new demand from both homebuyers and businesses looking to build and buy properties will, after more than five years, return and return strong. This is a cyclical industry. Things have been in the trough. But, when the recovery happens, the peak will be high. Which means there will be an enormous need for new construction workers.

For many in the industry facing such labor shortages, that scenario is daunting. I think the opposite.

Thanks to AI, there will be an obliteration of entry-level jobs and the meaningless white-collar work performed by countless corporate drones in marketing, accounting, customer service and IT departments. Where will they go? There will be other opportunities — startups and new jobs we've never heard of (20 percent of today's jobs didn't even exist in 2000, says a LinkedIn survey). But many will gravitate towards the trades — a place where AI can't replace them.

We're already seeing this trend develop. Trade school enrollment is up significantly since the pandemic and was predicted in a March 2025 report to increase as much as 7% annually through 2030, a rate significantly higher than other forms of higher education. The ranks of students studying construction trades alone rose 23% from 2024 to 2025, according to another report. Despite what some may think, young people are not stupid. They're following the money.

Unfortunately, it won't be enough. But, thanks to AI, new technologies will fill gaps. Already there are companies making autonomous drones to monitor safety and progress on job sites, self-driving vehicles that map out projects and carry materials, robotic dogs that explore hard-to-reach and hazardous areas, equipment that can 3D print frames and drill and apply drywall with minimal supervision as well as back office applications that enable estimators and project managers to complete more projects faster and with greater efficiency. Better protective clothing that monitors movements and cameras that identify jobsite risks are improving safety and keeping people working longer. AI is already helping firms recruit better workers by identifying existing skills, teaching new ones and eliminating language barriers.

Thanks to this growing new generation of skilled — and tech savvy — workers, we'll see more projects completed by less people as well as a higher number of entrepreneurs founding startups and buying existing businesses from their aging owners. The construction industry has enormous potential. And it's why countless private equity firms are swooping in to mint, as the Wall Street Journal reported in late 2024, "a new class of millionaires across the country, one that small-business owners say is helping add more shine to working with a tool belt."

Yes, it will always be a challenge finding a good contractor to redo your kitchen. And yes, there will still be plenty of parents like my friend who will reluctantly fork over vast amounts of money to a university instead of spending on a good trade school education for their kid. But there will be less of that. It used to make sense to get a college degree and become a lawyer or a banker. AI is changing that. Now, the smart money's in construction.

## **Five Examples of How Brands Are Replacing Their Employees With AI**

Whenever you read about a large company deploying AI, it will never say the obvious: This technology is replacing employees.

It'll instead say how it's "making its people more productive" or that it's "enhancing the customer experience" or how the technology is "adding more tools" for its workers. All of that is true. But, in the end, it's all about doing more with less, and in this case it's less people.

AI is just another technology to accomplish this. It's certainly not the first. There's been a history of robotics, bots, workflows, alerts and other automation tools to do work in place of people. It's just that AI's progress has been faster, and brands in financial services, restaurants and even education are using it to simply replace people. Already it's happening. Here are five recent examples.

There's Klarna, the Swedish buy-now-pay-later service which announced in February, 2024 that its OpenAI-powered customer service chatbot system was doing the work of "700 customer service agents" and doing it faster and more accurately. "What that means to me is that we become brutally efficient, both in the resources we use but, more importantly, in the results that we can create," the company's Chief Marketing Officer recently told the Wall Street Journal. What that means to me is more work being done with less people, which could have an adverse effect on future hiring at Klarna.

The New York Times reported that large financial services companies like Goldman Sachs and Morgan Stanley are introducing AI tools that "can replace much of Wall Street's entry-level white-collar work," like preparing spreadsheets, creating PowerPoints and analyzing financial data. Imagine putting in 100-hour weeks just to be replaced by a bot. Not that there's a great deal of sympathy for those on Wall Street, but it's still a sign of the times: More technology means less need for humans doing this kind of work, and, if there's any industry that's cutthroat enough to make these changes quickly and without remorse, it's investment banking.

According to USA Today, electronics retailer Best Buy "has made a significant cut to its workforce and laid off a number of employees, including Geek Squad field agents, current and former workers," while at the same time announcing a new "AI venture" with Google that will use "generative AI to provide our customers with even more personalized, best-in-class tech support experiences." And you thought tech jobs

were safe? Apparently not. Why employ a geek when a large language model can answer customers' questions faster and more accurately?

The benefits of AI are already starting to trickle down to small and mid-sized businesses, where companies like Bloomington, Illinois' Little Beaver Brewery and Burning Rice, an Asian eatery in the Dallas area, are using platforms like Sling.ai to literally answer the phones when customers call and automatically book their reservation. "By 2030, we will save businesses and consumers one billion minutes of precious time while transforming branded voice experiences into the preferred mode of communication," Sling.ai boasts on its website. That's almost 700,000 days of work that would have been formerly done by people. Sling.ai won't say it's replacing people. But it is. And I bet it'll do well at it.

Even local governments are getting into action. The Texas Education Agency is rolling out a "new artificial intelligence-powered scoring system set to replace a majority of human graders in the region." The Texas Tribune reports that "The agency is expecting the system to save \$15–20 million per year by reducing the need for temporary human scorers, with plans to hire under 2,000 graders this year compared to the 6,000 required in 2023." True, those tax dollars saved will likely be offset by unemployment payouts, but hey...it's progress, right?

Are you seeing the writing on the wall? There are all sorts of studies and research that show how many jobs will be lost to AI, with some — like Goldman Sachs — projecting as many as 300 million people being left unemployed worldwide by 2030, which really isn't so far away. Does this concern you? It shouldn't.

Over history, large numbers of professions and occupations have been lost to technology. Blacksmiths, typing pools, data entry clerks, switchboard operators, elevator attendants, bank tellers, and even knocker-uppers, (now get your mind out of the gutter, they were paid to knock on people's windows in order to wake them up because there were no alarm clocks) and lamp-lighters (who manually lit and extinguished street lamps each day) are no longer a thing. In just the past 20 years, we've seen travel agents, cashiers, photographers, postal workers, video store clerks and TV repairmen mostly cancelled thanks to tech (for some reason, there are still plenty of translators, go figure). Regardless, AI will claim many more.

But, thanks to AI, we now have "prompt engineers" and "AI managers" and testers and engineers and consultants and trainers and all sorts of new jobs created. According to Ernst & Young, generative AI venture capital investment globally was on track to reach \$12 billion in 2024. Most of this money was funding new startups and expansions of existing organizations. It was a whole new industry with countless new companies. When companies expand, they need managers and

staffers and people who still have to do the marketing, accounting, finance, sales and operations because there will also be a need for humans to do this stuff, and AI will never be able to do it all autonomously (at least not in the foreseeable future).

Whether big brands publicly admit it, the fact is that they are using AI to replace people. But don't worry. As in other industrial and technological revolutions, humans will figure out other things to do with their time.

## **My Company Uses ChatGPT. Exactly How Private and Secure Is Our Data?**

According to a survey from Cox Business (a client of my firm), two-thirds of small and mid-sized business owners invested in AI for their company in 2023, and 53 percent planned to invest in AI even more in 2024.

No, most of these businesses were not operating robots or developing their own large language models...yet. What “invested in AI” meant — in 2024 — was that small and mid-sized businesses and their employees were mostly using generative AI platforms like ChatGPT, Google Gemini, Microsoft Copilot and Anthropic for several back-office tasks like helping to analyze spreadsheets, attend and record meetings, craft e-mails, perform research, create policies and analyze contracts.

But there’s a concern here.

Using these platforms requires employees to share and upload data. And, given the enormous advances in AI assistants, it’s safe to assume that, over the next few years, businesses will be leaning on Cloud-based AI platforms like these to help them run their businesses more efficiently. Already ChatGPT 4o can “see” and “hear” conversations. Google’s Gemini recognizes everything in an office, including where a lost pair of glasses are or recognizing software code displaying on an open monitor. All this information is going somewhere to be processed, right? It is. It’s going right into the hands of those big technology companies. Should we be concerned? Damn right we should.

While governments, governors and tech companies issue edicts, mandates and promises about the safe use of AI, businesses have an equally pressing concern: Given the amount of data these AI apps need to do what they promise, exactly how private and secure is our actual data? Spoiler alert: You’re not going to be happy with the answer.

OpenAI’s data strategy is not unlike Microsoft and Google. The company says it won’t sell your data and will only share it with your consent. However, its policy does stipulate that it can use your data to:

- Provide and improve services
- Communicate with you
- Ensure compliance with legal requirements
- Conduct research and analysis

-Enhance security and prevent fraud

All these uses give OpenAI wide latitude. For example, is using your company's proprietary data necessary to "enhance its services"? Or "develop new features"? Or help it "respond to lawful requests"? Good luck fighting their army of attorneys who will be deployed to defend these actions. And what difference would it make at that point? Your data would have already been sucked into the company's "learning model."

So no, your data are not completely private. Nor are they completely secure. I'm sure OpenAI employs the best and the brightest security professionals to ensure that the critical information you've uploaded is protected, safe and free from data breaches. Just like Twitter/X, Adobe, Dropbox and LinkedIn. Or Trello, Vanderbilt University, Boeing and Sony. Feeling better now?

This is an opinion column, so here's my opinion: Your company's data are not completely private nor are they completely safe, whether they're with OpenAI, Google, Microsoft or any AI platform. Sure, these companies all have policies, but they're written to favor their own interests and can be easily defended against any small and mid-sized organization who dares to question. And yes, their security protocols are at infinitely higher levels of quality than most companies can afford. But, as we've seen, none of this provides a 100 percent guarantee.

So how are my smartest clients addressing these concerns? The same way they address all issues impacting their decisions. By weighing risks and rewards.

Future AI tools will use our data to perform many core functions in our businesses, from stacking shelves to autonomously fixing issues. Yes, there are data loss or misuse risks, and smart business leaders will be weighing these risks against the rewards, just like we do as individuals every time we drive our cars, eat fast food, swim in the ocean or go for a blind date with someone we met online.

The risks of your data being stolen or used without your knowledge or consent are very real. However, the rewards of using AI platforms like ChatGPT — better customer service, increased sales, higher levels of productivity, more profits as a result — are pretty significant. There will never be a concrete answer to the data privacy or security issue. Just a continuing evaluation of what's at stake.

## **Google's AI Offerings Are Missing One Big Thing: People.**

Recently, Google announced several changes and product launches in the advertising, search and AI assistance space — in addition to its previously launched AI enhancements to its Workspace — that will significantly disrupt both our personal and professional lives. Of the new offerings, there are four that particularly caught my eye because they will impact many of my clients.

### **1 - Getting Found Online Will Be Very Different.**

Search Engine Optimization will be much different in the next few years. That's because Google is moving away from delivering pages of links to websites when users search. Instead, users will get a generative AI response to their queries with website links pushed further down on the results page. If the content on your company's website is good to enough answer a specific question, Google's AI search may include you — and a link to your website — in its response. If not, well...you're pushed down even farther. News organizations are freaking out about this change because it will certainly cut down on their traffic. Companies that have been relying on customers finding them on Google should be too. Expect significant changes to your SEO strategy in the months ahead. Who's going to create and implement this strategy?

### **2 - Your Advertising Campaigns Will Also Need to Be More Relevant.**

Based on the above changes, how can you get found? Organic results won't go away, but all of this will further encourage companies and brands to advertise more with Google (surprise!) so that — assuming relevance — their ads can show up within the generative AI response. "This could make advertisers happy as their ads could be enhanced, but this could also result in less click-throughs to a brand's site," Anu Adegbola of SearchEngineLand. "This could be the start of traffic dropping off as Google provides the information consumers want right on the SERP (search engine results page)." Think running AdWords campaigns is complicated and time consuming now? Expect an entirely new process and learning curve as campaigns adjust to the new reality of AI search. Who's going to revise and run these campaigns?

### **3 - Your Ads Will Look Different and Respond Differently and Likely Need to Be Redesigned From Scratch.**

Google announced multiple ways to find out how the look of your ads will change, particularly if you're selling products online. For example, product profiles will be enhanced, and your imagery, videos and customer reviews will be emphasized, so, if

your media looks unprofessional, you're going to suffer. To help with this, Google has updated its product studio to help make images "useful" and "cohesive with your existing campaigns and content." Google also launched a new version of its Virtual Try-On tools, which "lets shoppers see how your products look on a variety of body types and build the confidence to buy." It's easy to see this expanding well beyond consumer goods so that even B2B companies can allow their users to see virtual versions of their products in use. But it's also going to require a new approach towards designing ads and a better understanding of the product studio. Who's going to learn these new tools?

#### **4 - Finally, Project Astra Will Allow Your Employees to Do Much More If You Lean Into It.**

If a picture's worth a thousand words, Google's Project Astra video is worth a million. Under Project Astra, Google's Gemini AI platform not only recognizes objects, code and places but can also explain complicated topics, solve math problems, memorize sequences, interpret drawings and even remember where you left your glasses! As this technology rolls out, your employees will be able to complete tasks faster, answer questions more accurately and be more productive. The bigger impact will be when Google Gemini powers actual robots that are stocking shelves, answering customer questions, moving materials around a warehouse and literally putting up drywall. It's all great, as long as people know how to use it. Who's going to teach them?

Which brings me to the bigger point, which is the one thing that's missing from Google's AI offerings: people. Sure, automation is going to eliminate jobs. But it's also an enormous opportunity for the people who embrace this stuff. And for the companies that invest in their skills.

Someone has to revisit your SEO strategy and then develop and implement a plan that will take advantage of Google's new AI search approach. For companies that rely on online advertising, someone will need to become expert in the new advertising tools and stay on top of these tools as they mature. And — like any software — all the great productivity benefits of Gemini will be lost unless a team of people in an organization become expert in them and then ensure that employees are trained to use them.

These aren't AI products. They're AI features being added to existing products. This is no different than any other software and hardware upgrade. It's going to require integration, customization and lots and lots of training. Businesses who want to fully leverage the potential of Google's AI tools will need to make investments in people to do this work. My smartest clients are identifying those people to assume

responsibility. And their best employees are embracing this technology and using it to be better at their jobs.

## **Sam's Club Is Now Successfully Using AI to Stop Shoplifting**

Most shoppers, after paying for their bulk products at BJ's, Costco or Sam's Club, oftentimes have to wait in line to exit the store while a store employee does a quick audit of their cart. This takes time and can be annoying.

The bulk retailers aren't happy about having to do this either. Not only does it annoy their customers, but it incurs an extra cost and is far from a perfect procedure. But doing a quick check of people's carts is a necessary evil in this business. Why? Because people steal. In fact, people seem to be stealing more than ever. Retailers are challenged with finding ways to thwart shoplifters.

Enter AI. Sam's Club is rolling out a solution to the shoplifting problem using AI technology. So far, it's been deployed in about 120 stores. How does it work?

After customers pay and as they're exiting the store, a quick photo is taken of their cart's items. The photo is instantaneously analyzed by AI algorithms and electronically verified against their receipt. If all is good, the customer can pass. Walmart says that this technology has significantly reduced the time it takes to exit the store and improved their customers' experience. No employees were harmed in the process.

But does it really work? There's reason to be optimistic, considering that — based on its tests so far — the company has said that it is rolling out this AI exit solution to all its stores by the end of the year. And, of course, things will get better as the technology evolves. Shoplifting will never be eradicated. But technology can significantly help lessen the impact.

But this story isn't just about shoplifting. It's about real-life AI solutions and who's really benefiting. The Sam's Club shoplifting solution is typical of how AI is being deployed this year. For now, AI is entirely a big organization game.

A big company like Sam's Club likely spent millions on an AI-leveraged solution to improve customer experience, make better use of its employees and, of course, lower its cost of shrinkage due to shoplifting. It probably had a team of developers working on the project and licensed someone's large language model to train. It had to buy and install hardware. Then test and train and monitor. Small and mid-sized companies don't have the ability to do this. But big organizations with deeper pockets are finding all sorts of ways to use AI in their businesses, and they're spending all kinds of money doing so.

For example, I previously wrote about Klarna, whose AI chatbot can do the work of 700 customer service agents. KFC, Taco Bell and Dairy Queen are using AI cameras to “monitor and analyze employees’ interactions with customers and allocates bonuses to those who are able to sell more.” Police departments are using AI cameras to capture events and then automatically write reports. Walmart is using autonomous forklifts powered by AI to move items around its warehouses. Bank of America’s Erica AI recently surpassed 1.5 billion client interactions.

Recognize these names? Of course you do. They’re among the biggest brands in the world. These large organizations — and many others — are spending large dollars to develop internal applications and solutions leveraging AI to perform work previously performed by humans, which is not only fixing their labor-shortage issues but overall increasing their bottom line.

That was the 2024 AI story: big businesses spending on AI. But in 2026?

This is when these technologies will start filtering down to small and mid-sized businesses as the costs come down and the bugs are worked out to make them more commoditized. More software vendors and startups will begin copying what the big companies have been doing and offering their own solutions to the masses. It’s in the works already.

Which means that, in the next two to three years, it will be commonplace for grocery stores to take photos of items leaving their stores to check against shoplifting, independent retailers to better monitor how their employees are servicing (and selling to) their customers, and small and mid-sized warehouse operators to quickly take inventories and move materials independently from one shelf to another.

AI is already having a significant impact for the largest of organizations. But that’s just the tip of the iceberg. Just wait.

## **Chatbots Emerge as the First Killer AI App for Businesses**

ChatGPT. Microsoft Copilot. Google Gemini. Anthropic. Llama. NVIDIA. There's been a lot of attention paid to these products, platforms and companies this year. And fair enough. These AI innovations — and many others — are forming the backbone, the model, the infrastructure for what will be a tidal wave of AI applications in the next few years that will significantly alter the way we do business.

Where was AI really making a difference? Where was the money being spent and where was the actual return on investment for the businesses spending it? Here's where: customer service chatbots. If you're looking to invest in AI for your business, this is where you can make money.

From a business perspective, we're told that AI software will soon drive autonomous vehicles, operate robots, independently fly drones, spot thieves in stores, make smarter decisions than humans, be sentient. And I believe that this will all one day be true. They will be the killer apps of tomorrow once they've been developed, tested, matured, used. But not now. Not today. These AI technologies are still in their most nascent forms.

Today's killer AI app for business is the customer service chatbot. It's where the big corporations are spending their money. It's where software companies are investing. And it's where businesses of any size should be leaning in.

These are not the pre-2022 chatbots. The ones that needed specific commands and could only respond in very precise, robotic and narrow ways. These were limited, and unfortunately there are plenty of those chatbots around (try filling a prescription with CVS on your mobile device, for example). But that's changing fast, thanks to generative AI.

Microsoft Copilot lets us create a presentation faster. Google Gemini can perform faster and more accurate searches. The TSA allows us through their gates with face recognition. My Alexa-driven speaker understands me when I ask for the time. My Xfinity remote can bring up the latest episode of "Curb" on command. All of these are wondrous but — like the Blackberry — will pale in comparison to the AI functions that will come tomorrow.

Forty-seven percent of corporations responding to a Gartner survey said that they are focusing their AI efforts on "customer-facing" activities, by far the highest percentage of all other uses. A survey of AI decision makers by venture capital firm Andreessen Horowitz found that approximately 60 percent of them were using AI for knowledge management and customer service, also the highest usage of any other

application. Deloitte reported last year that some 80 percent of contact centers were actively engaged in some stage of AI deployment. Many of these efforts are now starting to see the light of day today, and they're performing like humans. Even better.

For example, I previously wrote about Klarna, the buy-now-pay-later platform that licensed OpenAI's large language model to build a chatbot that it claims does the work of 700 customer service reps. Bank of America says its chatbot called Erica surpassed 1.5 billion interactions. Starbucks has deployed its chatbot to help customers choose and order coffee. Marriott's AI-powered virtual concierge even fooled me the last time I called to book a dinner reservation. This is AI being deployed right now and for big ROI. And big companies are spending big bucks — as much as \$18 million per enterprise last year — for mostly chatbot-driven AI customer service applications. And that's just from a survey of about 70 companies. All told, companies are spending billions on AI chatbots.

When big companies spend this kind of money, the technology itself ultimately becomes commoditized, costs fall, and small and mid-sized organizations can take advantage. And that's exactly what's happening with chatbots in the customer relationship and service management space.

Within just the past two years, software leaders like NICE, Salesforce, ServiceNow, Zendesk and even marketing platform HubSpot have announced their own or partnered with AI-driven chatbot functionality that allows their small and mid-sized customers to answer queries, analyze data, predict outcomes, suggest products and services, train and advise human reps and overall get answers faster to their customers than ever before.

The general public doesn't have (or at least we don't have access) to AGI — artificial general intelligence — technology that literally gives consciousness, feeling and human understanding to inanimate objects. Our AI today is still in its very early, rudimentary stages.

However, the one mature area of AI that has proven ROI in the real world is the customer service chatbot. So, if you're a business owner or manager looking to make investments in AI, my recommendation is to start there.

# **These Are Five New AI Tools for Google Workspace Users to Check Out**

Last year, J.P. Morgan CEO Jamie Dimon said that AI could be “as transformative as the Internet or electricity,” and Elon Musk said that AI would “be smarter than the smartest humans next year.” Wow.

That’s all fine, but “transformative” and “smarter than humans” aside, how can all these great and glorious AI tools provide someone running a business with value right now?

As I write this, countless software companies — big and small— are working on adding AI-driven features to their business applications. One of those companies, of course, is Google, which last year offered Gemini, its AI Assistant for Workspace, which aims to automate many functions from document creation to writing e-mails.

Gemini costs \$20 to \$30 per month per user depending on the size of your organization. But if you don’t want to jump in so quickly, you can now test the waters with a less expensive version (\$10 per month per user) that offers at least minimal functionality that can benefit your business.

## **1. Notes in Meet**

A new AI function in Google Meet will, according to the company, “let you drop the pen and lean into the conversation instead of taking notes.” By turning on this option, you’ll get a full transcript and summary of your Google Meet meetings. This function already exists in competitors like Zoom and is offered by countless startups like Otter and Fathom, so Google is catching up. But I’m glad to see them joining the party.

## **2. Translate for Me**

According to Google, this new AI feature “will automatically detect and translate captions in Meet with support for 69 languages, helping people feel more confident and connected to their colleagues, regardless of language.” I’m guessing you’ll need to have captions on during these conversations so that the tool can do its job. I’m expecting future versions of this potentially amazing tool to literally translate spoken conversations on the fly. But for now, this is super-powerful, particularly at a time when many of us are looking to do more business with overseas customers and suppliers.

## **3. Chat Translations**

The company promises to deliver automatic translations of messages and on-demand conversation summaries in Google Chat. I imagine it will be like the Google Translate app (which is excellent) on steroids and save me time from copying and pasting chat messages into a translator. Like the Translate feature above, this will also be a powerful help to those of us working with customers and suppliers native in different languages.

#### **4. Security**

This AI tool is more geared for your IT team, so you want to make sure they're aware. It's also an additional \$10 per user per month. Google says it will allow "IT teams to automatically classify and protect sensitive files company-wide in Google Drive." Its AI models can be trained to take data that are unique and sensitive to your organization and add additional protections.

Honestly, I'm not really sure what that means and how it works and whether or not it really does provide more security. Also, if you have 10 employees in your company, that's \$1,200 a year, so more investigation should be done by your IT team to assess its value.

#### **5. Vids**

This is another AI tool that, to me, has dubious value right now. It's an "AI-powered video creation app," according to Google that can "generate a storyboard that you can easily edit, and after choosing a style, it pieces together your first draft with suggested scenes from stock videos, images, and background music. It can also help you land your message with the right voiceover — either choosing from one of our preset voiceovers or using your own."

My experience with AI image generators — and, mind you, these are just photos not videos — has been underwhelming at best, and I'm betting that AI tools like Vids will be equally not-ready-for-prime-time. I'm also betting that it will take employees more time than using a decent, already established editing application. But the kinks will ultimately get worked out, and I'm sure this app will mature into a powerful video design marketing tool. But I'm betting it's going to take a couple of years. Or it could wind up in the Google graveyard. We'll see.

A few friendly words of warning:

-Whenever a software company tags a new product as "preview," it basically means it doesn't work completely, and the company is taking no responsibility for its errors — sorry — "hallucinations." So you may want to wait before buying.

-In the same vein, be wary when you see that products — like Vids — are being released to Workspace Labs. That's another way of saying a product isn't ready for prime time and use with caution.

-Companies like Google are feeling the pressure to deliver more AI news frequently, and, in turn, that means releasing products too early. But that shouldn't scare you away, as the sooner you get familiar with these products the more you'll be able to take advantage as they improve.

## **From Promise to Frustration: A Candid Review of OpenAI's GPT Store for Business Owners**

In 2024, OpenAI launched its new GPT Store, a marketplace of apps similar to Apple's App Store, where startups and creators could build applications on top of the ChatGPT large language model, or LLM. At the time, the company claimed that users had already built millions of custom versions of its popular generative AI platform, so this was the natural next step.

The store features "a diverse range of GPTs developed by our partners and the community," the company wrote in its announcement, and encouraged visitors to "browse popular and trending GPTs on the community leaderboard, with categories like DALL·E, writing, research, programming, education, and lifestyle."

I spent a few hours in the store, looking for applications that would help my business. The results were disappointing. Here's why.

For starters, the GPT Store interface is not helpful. There are only a few categories, and OpenAI recommends a dozen or so applications in each. From there, you're on your own to search for apps, and even doing that only turned up a dozen or so options per query.

But the real problem with the interface is that I don't really know my problem. I'm not sure what I'm searching for. Like many business owners, I'm still trying to get my arms around how ChatGPT and AI can help my business. Steve Jobs famously said "Customers don't know what they want until we've shown them," and boy, is that true. OpenAI needs to take that advice and offer some guidance to its business users.

Not knowing where to search, I decided to try out some of the popular apps listed to see if they could provide a business solution. Unfortunately, these apps didn't really work that well for me.

For example, my company sells customer relationship management (CRM) software, so I asked an app called Invideo AI to create a two-minute video explaining CRM. After answering a series of questions, it did create the video which looked...well...weird. The voiceover was unnatural, some of the people were clearly AI created with that alien-like appearance, and other images and videos incorporated had logos because they were obviously taken from other places. It's potentially — potentially — amazing. But it's not something I'd use right now without some serious post-production.

Next, I started to design some marketing materials using the Canva GPT app, and, after a few questions and producing a basic design, I was then redirected to the full Canva site where I would need to pay for more services to create something that was actually usable. I was also excited to create an org chart for one of my clients, and it got off to a good start before — like Canva — hitting a wall and then taking me to its site where I would need to sign up and pay for more features and functionality.

My worst experience was with an app simply called PowerPoint, where I was promised a “high- quality presentation.” It wasn’t. I asked the application to create a short PowerPoint presentation that shows how inflation has impacted the construction industry since 2021. It impressively returned a great example in the app, along with instructions for cutting and pasting the code into my PowerPoint software. But, when I did, only a black-and-white simplified outline was created — none of the data, charts or other statistics I thought I was receiving.

These are just a few examples of the more than a dozen apps I tried.

The takeaway for me is that these “popular” apps are nothing more than a marketing strategy to entice me to the developer’s site where I would have to whip out my credit card to get anything nearly acceptable for my business. On the positive side, they do help move things along faster than creating something from scratch. Like many of today’s AI apps, they get you to the red zone. But it’s clear that I’ll need to pay a human to carry the ball over the goal line. No one’s losing their jobs anytime soon.

Unfortunately, I had worse luck querying for more apps. As I wrote above, I wasn’t sure what problem I was looking to solve. My company sells Zoho CRM, so I searched to see if there were any GPTs related to the application and there were. I tested out a few of the GPTs by asking questions and got decent answers, even scripts to set up workflows and automation. But I was able to get similar answers directly on Zoho’s website and by querying ChatGPT directly, so I’m not really persuaded that there’s any value there. Then again, the GPT apps I used were free, so there’s that. Why are they free? I don’t know.

Which brings up another question: Are all these apps really better than the core GPT Pro that I’m already paying \$20 per month for? I realize that popular apps like Consensus, ScholarGPT and Wolfram promise a more-detailed LLM for research and computations, and they must contain propriety data in their LLMs that ChatGPT’s core platform can’t reach. Or do they?

I’m also concerned about security. Is our data safe? Were these companies vetted? OpenAI does publish usage and branding policies, but the company makes it so easy

for anyone to publish an app that it doesn't seem there's any procedure for ensuring that these apps are OK to use. Is there someone at OpenAI reviewing these apps after they're published? As I'm prompting, am I handing over personal information to Russian hackers?

These are the shortfalls I experience, and they're significant enough to give me pause. But make no mistake: 2024's AI was like 2007's iPhone. It was the Wild West. However, we're just getting started on this journey, and the future looks promising. So, is the GPT store a good resource for your business? For some businesses, probably. But for most companies like mine and my clients, it's probably best to wait for the cream of these apps to rise to the top.

## **These Are the Worst CRM Applications for Your Business**

Last year, USA Today published its list of the Best CRMs (Customer Relationship Management) software for that year. And there were a lot of familiar and excellent applications mentioned.

For example, the best value, according to the reviews, is Zoho (full disclosure: My company sells and implements this product). The one that's highly customizable is Apptivo. Monday, Nimble, HubSpot and Zendesk all made the list. And, of course, Salesforce.

None of this surprises me. All these applications are great. And it's my belief that any business would be well served by any of them. But, unfortunately, these are not the best CRM applications. These are actually the worst CRM applications. And no, it's not because they're inferior products, and it's not the vendors' fault.

These are the worst CRM applications because of how they're generally implemented and used. Software is only as good as the people driving it. And I've found over the past 20 years of selling CRM solutions that, if companies don't do the right things implementing these applications, they'll turn the best ones into the worst.

So what are these "right things"? It actually comes down to one thing: who owns the system and how they're supported. To be the best, these CRM systems need an owner. Unfortunately, many companies don't invest in this person. And so they get the worst.

Every CRM system needs someone — or a small team — who owns it. This person doesn't necessarily have to be an IT person but should be a power user. He or she should be connected to the group that's using the system (i.e. the sales or customer service group) and act in a support role. That person should know the CRM system well and also be given all the resources needed by management to make it a success, including training and the availability of outside experts and consultants.

CRM systems are just databases. The owner is responsible for the integrity of the data in that database. If anything is out of date, incomplete or inaccurate, it's the owner who should be fixing the problem and then ensuring that it doesn't occur again. Internal controls should be established. Fields locked down. Dropdown lists created that force users to enter a specific choice of data. More training applied. More checks and balances put into place.

There's been a lot of talk about AI in the tech world, and most CRM systems are rolling out some amazing AI functionality that can do anything from measuring sentiment and chatting with website visitors to monitoring and giving feedback to salespeople or automatically creating campaigns and landing pages. It's the owner's job to know all this. That person should be in regular contact with the CRM provider and be completely up to speed on all the AI and automation functionality both available and on the horizon so that the team is using the system to its best advantage. I can't think of any better scenario where the best turns into the worst than when a company is paying thousands in monthly fees for a CRM system and then only uses 20 percent of its features.

To that end, the owner — or team — must meet frequently with their vendor to determine what more can be done. Are better reports needed? More integration with other systems? Workflows? Alerts? Automations? All of this would then be the owner's responsibility to implement whether on their own or with the help of a consultant.

One of the biggest issues my clients face with their CRM systems is getting people to use them. Over the years, I've had countless clients complain to me how bad their CRM system is because no one is using it.

CRM systems are not like accounting or order-entry systems where financial transactions are essential to the operations of the business. Owners need to be in the middle of this too. They should identify those 20 percent of users who are advanced and leave them alone. They must pay attention to the 60 percent who need just a little TLC to get them using the system adequately.

And for the remaining 20 percent who don't even know how to turn on a TV, let alone operate a Cloud-based platform? They're the ones who need special attention, training, supervision and support. It's important to remember that just because a sales or service rep isn't great with technology doesn't mean they're not valuable to a firm. But a CRM system is a group database, and, if some in the group aren't entering data, it hurts everyone else.

Finally, the owner of the CRM system must be fully authorized, supported and encouraged by the boss. Whether it's the VP of Sales or the CMO, everyone in the group should be clearly aware that the owner has that manager's full authority to do whatever needs to be done to make the system work. No excuses. No crying. No complaining. It's the company's data and it's a big data world, and the company is making a big investment to help grow sales, provide better service and increase its value.

Many of my clients don't have owners. Why? Because there's a cost. Sometimes, the owner works at a company and can be assigned to support the CRM system. Other times, someone has to be hired. And a typical owner of a 10-user system can expect to spend a day or two a week supporting the system and its users.

All of this requires an ongoing investment, and sometimes companies aren't willing to make the investment. But one thing's for sure: Without an owner, any of those "best" CRM systems will quickly become the worst.

## On AI: Google's NotebookLM Test Run

I'm searching for a part-time administrative assistant for my business. I placed an ad on Craigslist (and don't judge — Craigslist has actually been a pretty reliable place for my job searches).

Fortunately, I wasn't disappointed.

To date, I've received more than 30 decent resumes. That was the easy part. But, unfortunately, now starts the real work: sorting through these documents to figure out the best candidates.

Maybe, I thought to myself, I could take advantage of Google's recently released note-taking application called NotebookLM? I read about it and was intrigued: an AI assistant that could help me figure out the best candidate! Let's do it, I thought to myself.

NotebookLM promises some pretty amazing stuff. It's designed to be a mini large language model, but, rather than using all the world's data, it just provides a conversational way to get insights only on the data you provide it. If the application does what it promises, I was ready to abandon my current note-taking application and use it to help me answer specific questions about my business...like finding the best candidate for a job based on 30+ resumes.

Unfortunately, I was disappointed.

To its credit, NotebookLM was able to grab the resumes from my Google Drive and allow me to add notes. It's designed to generate summaries of each file and allow me to search across multiple notes and files within a notebook, all in that conversational GenAI way that that my current note applications don't allow or even come close to replicating. I'm told the application will also enable me to create summaries and blog posts using the files I've uploaded and the notes created, which can certainly be a productivity tool. I can also share my notebooks with others.

All of this is great. But the reality is that NotebookLM failed at helping me with my resume project. As it stands, it's still not a usable tool for my business. Why?

For starters, the data you can provide it are still very limited. It will only accept PDFs and copied text and not spreadsheets, documents or even URLs from a website. It's not a dealbreaker — I could convert the Word and Doc files into PDFs (or copy them into my notebook) — but the time this took was onerous. It also didn't allow me to

upload all files at once, so I was forced to do this tedious task one-by-one — another annoying time suck. There are still data limitations, and, although you can search and have conversations with data included in notes and files within a notebook, it won't do the same across multiple notebooks.

Unfortunately, its analysis of the 30+ resumes that I (finally!) uploaded wasn't helpful either. I asked NotebookLM to list the candidates that had financial experience, show me those that had college degrees or evaluate based on a candidate's experience with technology firms, and the answers were either incomplete, inaccurate or basic regurgitations of the resumes without any type of insights or help. I get it: There's only so much you can do with the data provided. But these would not be difficult requests if I made them to a human assistant.

What do I want from a great AI-powered note-taking application? It's what most businesspeople would want: the ability to ask questions of all the notebooks and get intuitive answers like an assistant would provide. For my resume project, who is the strongest candidate? Who has the most skills in one area compared to the other candidates? Who's got the most experience? Who has the most education? When the GenAI bot hits a wall because there's "not enough information," what more information is needed and how can the application get it for me?

Am I asking too much of this application? I don't think so. I'm doing this all manually. Because NotebookLM doesn't do the job, I have to do the job for it.

I'm filling out a spreadsheet that includes each candidate and their qualifications and my observations from these resumes, which I'm sharing with my team so they can more quickly evaluate. This is a mundane task that can easily be automated by a good AI note-taking application. I think that NotebookLM will ultimately do these kinds of things. But it isn't happening yet. Like every other AI product offered by big tech so far, it's more "wait and see what will happen!" instead of "this is happening now!"

To be clear, this is an experimental product. Google says this all over the place with an offer to "try it now," not "buy it now." Its landing page literally quotes tech site The Verge's conclusion that the platform is the "messy beginning of something great."

I couldn't have said it better.

## **On AI: 5 Good AI Apps for Your Business**

There's a lot of AI hype going around and a countless number of products that are promising to change the world and your life with just a push of a button.

That's all well and good, but we've got companies to run. So what's really real for your business right now?

Many of these apps, in my opinion, are not ready for prime time. For example, the potential for text-to-image and text-to-video is exciting, but right now these apps are in their infancy; and both the images and videos generated look like they were generated. Apps promising "productivity" and "automation" are mostly just doing what ChatGPT does either for free (version 3.5) or for a nominal fee (\$20 per month for their ChatGPT Plus version).

However, there are a growing number of reliable, legitimate AI tools that can help increase productivity in your business. I've listed five below. Please know that there are plenty of competitors in each category, and I'm using these five applications as examples for a specific business use case. Also know that some do lean on ChatGPT, and, who knows, with all the competition, how many of these will be around in a year? That said, I'm recommending these applications to my clients who are interested in dipping their toes into the world of AI not for fun but for help running their businesses.

### **Headshot Generators**

These are applications that use AI to pretty-up existing photos and make them clearer, more professional and more appropriate for business use. Apps like ProfilePicMaker can take a simple selfie and then remove or replace backgrounds, touch up your skin and even change the clothes that you're wearing. Business owners can use the final product for their websites, social pages and other marketing materials. So can their employees. It's less expensive than a professional photographer, and it's quicker.

### **Chatbot Builders**

AI-based chatbot builders like Droxy.ai will create a knowledge base of information that can be searched conversationally by your employees or made available publicly on your website. For example, you can upload your entire website, any videos you've

made for training or product demonstrations, or PDFs of spec sheets, quotes, proposals, instructions and contracts. Yes, there's a little heavy lifting up front. But, once uploaded, the information is available for people to ask questions about like they do with ChatGPT, but the answers come from your information — and they'll get better as the chatbot gets better trained. Frustratingly, these applications don't yet allow us to upload actual data from our accounting, CRM or HR systems, but that time will soon come.

### **Automation Tools**

Products like Zapier, Workato and Make have been around for a bit. But now all of them are using AI to up their game. These products can connect to hundreds of existing accounting, collaboration, CRM and project-management applications and then allow users to set up triggers which then automatically launch a task. Examples: “automatically send a customer an e-mail when their invoice goes over 30 days,” “send a candidate a rejection letter when we change a field in our database to rejected,” or “implement these onboarding tasks when a new employee is confirmed in our system.” These tools are powerful, require almost no programming experience and can span over multiple applications so you've got a one-stop shop for building automation that's not reliant on the functionality of any one software product.

### **Website Builders**

There are plenty of established website platforms — Wix, Squarespace and GoDaddy are just a few — that make it very easy to build a new site. But the new generation of AI-based builders, like Mixo, are taking things to a different level. With these tools, you or an employee can type in a written description of the site desired, and the builder starts building. Because it's conversational AI, you can instruct it to make changes, set up your domain and add security just like you're talking to a Web designer. Soon enough, we'll be giving these voice instructions instead of typing. For businesses that like to set up numerous sites or landing pages, these AI tools are significant time savers, and their quality continues to get better.

### **Simple CRM**

Some AI platforms — like Durable — are taking the website-building process to another level. The application does a lot of what tools like Mixo does, but it then also offers basic accounting and CRM functions like invoicing, lead capture and automatic e-mailing. It also has an “AI Assistant” that can answer questions and do research like ChatGPT (maybe it is ChatGPT behind the scenes?) as well as the ability to write blogs based on information on your website or from other sources. For very small

and mid-sized businesses that want to get up and running quickly online and then be able to capture leads and do invoicing, it's a pretty good tool to try.

Most of the applications that deliver these business processes provide some level of free access and are all nominally priced. And, yes, as mentioned above, many are young startups and for all I know may not even be around in a year or so. But there's little risk in trying them out — they're accessing your data, not storing it. What's important is taking the time — or committing an employee to take the time — because, if used the right way, all these tools can provide significant cost savings and increase productivity. Ignoring them is not good business.

## On AI: Here's How to Chat With Your Company's Data

Let's say you're a contractor or running a business in the construction industry. And you've got questions like these:

*"I'd like to use a design from a prior job and get recommendations for applying it to this new project."*

*"There's a piece of equipment we're using, and I need specific instructions for using it."*

Or like these:

*"We're installing a helical pile. Do we need to load test? What have we done before? What does the manufacturer recommend?"*

*"How do the submitted electrical bids for this potential project compare?"*

Or these:

*"We need a storm water pollution plan that addresses the requirements of this project and is in compliance with regulations in Florida."*

*"What slope is needed for drainage on this site?"*

Where do you go for this information? You can search the Internet, where results can be dubious and potentially inaccurate. But wait...don't you already have a lot of this information in your own files? If you've been in business for a while, you probably do: e-mails, bids, estimates, documents, contracts, design plans, manuals. But there's a problem: There are thousands of these files, which makes it very time consuming to search them, let alone know if you're coming up with the best or most current data.

That's one of the biggest issues I see with generative AI. There's no one place to get your information and then ask more questions about it to arrive at the best answer. But companies need to access the data in all their databases and file systems so they can make the best decisions. The good news is that several startups in different industries are tackling that issue now.

One of them is Constructable, a fairly new company that recently graduated from startup accelerator Y Combinator. Constructable is focusing on the construction industry and has begun to consolidate the information from files found in multiple places into its proprietary large language model that can then be trained to provide specific information to a company from their past data as well as external sources...just by chatting in one place.

“We’re really focused on commercial general contractors, and especially project managers,” says Emma Nazim, one of the company’s three co-founders. “We’ve talked to a number of people who are just spending hours a week trying to answer questions that they need to keep the project moving forward, and also to make sure that they’re preventing mistakes.”

Making mistakes is obviously the biggest concern for any project manager, particularly when building things. Constructable is designed to provide quick — and most importantly accurate — answers to their questions.

“If you ask a question and we find two data sources that have a different answer, we’re able to surface that,” she says. “We’re getting better at figuring out the best answer.”

Large language models that consolidate data from multiple sources are not just a construction industry need. I know many business owners and managers in other industries who desire the same thing from AI.

For example, I have a manufacturing client that collects data in its order entry and inventory systems as well from sensors on some of its equipment on the shop floor and video cameras on their forklifts. I know many businesses in the service industry that store information in separate systems tracking time, materials, expenses, job progress, client communications and contracts. I have distribution clients that are managing their warehouses through various software to track inventory, security, temperatures, safety and product movements.

And I personally know a dozen construction companies that are using multiple systems used for project management, accounting and job costing as well as estimating and design. Some are even testing drones for site surveys and using augmented reality headsets for training and remote management. Regardless of the industry, all these companies have files and information in their payroll and customer relationship systems. All of them use either Office 365 or Google Workplace.

There’s data everywhere. How do you chat with it all in one place? That’s the challenge being addressed by Constructable and other startups like it. And it starts with files.

Constructable’s Cloud-based modelling is first pulling together information from the documents, spreadsheets and e-mails stored in Office 365, Workplace and Procore — a popular construction industry management application — into one place for its

customers to converse, query and get the information they need to estimate, run jobs, communicate with customers and manage their business.

“We’re really heavily focused right now on the documents,” says Nazim. “We’re pulling information from bids and RFI/RFPs (Request for Information/Proposal), and then we’ll continue to expand that as we build out the product and actually help with answering questions that come from more structured data.”

Nazim also says that a model is being built to access the files in the design and engineering platform Autodesk. Future versions will expand to not only include more data from popular construction industry applications but also images and videos from job sites.

The aim is to provide quick and accurate information from these places in conversational form.

“We tell our customers think about our AI technology as having a smart and fast reading assistant,” Nazim says. “How would you talk to your coworker? Don’t think about it in the context of what would you type in the search bar, but how would you actually ask a person what you’re looking for?”

## **On AI: Both Microsoft and Google Are Facing a Looming AI Backlash**

Recently, both Microsoft and Google released their latest generative AI applications for businesses.

Drawing on its ownership of OpenAI's technology, including ChatGPT and Dall-E, Microsoft introduced Copilot, its advanced AI assistant that helps Office 365 users write better e-mails, more easily create PowerPoint presentations, analyze complex spreadsheets, manufacture quotes and proposals from various sources and even — and I'm not kidding — allow a Teams user to attend more than one meeting at the same time. Google, not to be outdone, introduced similar AI functionality — called Gemini — for its Workspace platform.

Both tech firms have announced what their added AI tools cost. And they cost a lot. Both companies charge \$30 per month per user for any organization that wants to use Copilot or Gemini. Which means that my company, for example, with only 10 users, would pay \$3,600 a year for AI. That's a lot of money. And for what? A nascent, unproven and potentially unwieldy tool that could likely create more problems than it solves?

Most of my clients use either Office 365 or Workspace for their office systems and, anecdotally, most agree. They're not going to pay. And that's a problem for Microsoft and Google.

Why? Well, we've been to this rodeo before. And we all remember "Clippy." AI is still very new. Most businesses are still trying to get their arms around the benefits of this technology and how they can use it in their businesses. Other than poking around with tools like ChatGPT to help create a recipe or write a blog post, a typical manager or office worker will need time to truly understand this functionality. Training and education will be needed, and people are going to be frustrated by this. They're going to ask why the glorious, earth-changing, mind-blowing promises of AI, which is supposed to increase productivity and reduce overhead, is actually creating higher costs and an added burden.

More importantly, and, given the security, privacy, accuracy and bias concerns we all have around this stuff, many of us will feel reticent about using — and paying for — these tools until we are very confident that they actually work and can be relied upon. Oh, and we're even less confident in the integrity of our databases to truly leverage AI too.

Earning this confidence is in itself a substantial feat, given that anyone over the age of 40 who's used Microsoft products knows that they're never ready for prime time until after at least their third iteration. Ever wonder why Microsoft software doesn't power airplanes or run self-driving cars? Just ask the people at Tesla, Waymo and other companies. Their autonomous vehicles are frustratingly slow to market because any glitch could prove fatal. For Microsoft and Google, their AI tools can (and will) make lots and lots of mistakes and those will be chalked off as "bugs" that will be "fixed in the next build" or will improve once their AI products get "better trained."

And we're expected to pay for this all the while?

I was surprised when both Microsoft and Google announced that organizations will have to pay an extra price to use Copilot and Gemini. If you haven't figured out by now, I'm skeptical of the strategy. I'm expecting a backlash of organizations that feel the same way.

My company and my clients already pay for Office 365 and Workspace, and our understanding — now that we've been forced into the Cloud-based, monthly-fee model — has always been that software makers would commit to offering better, reliable and more useful software for the same price so we'll continue to pay their monthly fees. How naïve we are. Copilot and Gemini aren't separate, standalone applications like Word or Sheets. They're built into Office and Workspace like any other new feature set. So why charge more? It seems premature and a little bit greedy.

Until I'm convinced that Copilot and Gemini are really worth \$3,600 a year, I'm not buying, and I know I won't be the only one. Despite the inevitable PR and marketing campaigns from Microsoft and Google, I'm betting that both companies will ultimately resort to new pricing levels that will need to be introduced depending on the level of functionality a user wants. Just like any application.

People aren't going to pay for something that's mostly an unknown. My clients aren't able to perceive AI's value until they're actually using AI. Asking them to pay for these tools upfront is premature.

## **AI Has Always Had a Hardware Problem...Until Now**

If you're wondering why — all of a sudden — artificial intelligence has exploded into your life, you're not alone. Many of my clients and friends have been asking a similar question ever since late in 2022 when OpenAI released its ChatGPT product and everyone went Wow!

With such an unprecedented show of how generative AI can conduct very human-like conversations and provide (mostly) accurate answers, every other tech company from Microsoft to Google to Salesforce suddenly jumped into the fray with their products. And from there, countless apps, startups and entrepreneurs have been flooding the market with their products in the hopes of becoming the next big thing.

But why? AI's been around for a while. But it's only in the past year or so that it's received so much public attention. What happened? The answer is: hardware. And like most things, it's not just one part of hardware. It's actually three hardware things that have come together to form a perfect storm that created this new technology wave. What three things?

The first is about storage.

According to data from Our World in Data, in 1990, the cost of a terabyte of data was a whopping \$7.4 million. What does it cost now? \$14.30. And, no, I'm not misplacing a decimal. Are you, like me, old enough to remember those 1.4 MB floppy disks? Thanks to the plummeting cost of materials and economies of scale, a megabyte in data, which cost \$9,200 in 1956 (that's about \$85,000 in today's dollars) now costs just \$0.00002. I'm an accountant, and I don't even know how to read that number; but it's clear that storage is definitely dirt cheap.

AI is driven by large language models, which are simply huge databases that are being trained to predict responses and come up with correct answers. AI doesn't work without an enormous data set to query. ChatGPT's knowledge comes from pretty much the entire Internet since the beginning of the Internet. The company has scraped countless terabytes of data from the Internet to be captured into its LLM and scanned as much data from other sources. Then, for years, it trained its algorithms on this dataset. But none of this would have happened if each terabyte cost \$7.4 million. Thanks to storage becoming so cheap, the LLMs can store almost limitless amounts of information for artificial intelligence to become...well...more intelligent.

So that's the first big hardware reason why AI has exploded. The next reason is processing.

According to The Economist, the price of computation today is roughly one hundred-millionth what it was in the 1970s, when the first microprocessors became commercially available, which is another number I can't really comprehend. You don't really need to know what a Gigaflop is, other than it's a measure of floating point operations per second that a processor can perform. Suffice it to say that, in 1993, this number was in the hundreds. Now it's at a billion...per second. The takeaway is that, thanks to the same economies of scale and Moore's Law, our processors today are literally hundreds of millions of times faster than they were less than 30 years ago.

Besides data, AI needs lots of processing. Take a self-driving car, for example. Elon Musk told podcaster Lex Fridman back in 2021 that making his Tesla vehicles fully self-driving turned out to be "a lot harder" than he thought even with all these incredible advances in processing speed and storage size. That's because the AI behind a self-driving car has to process an indeterminate amount of data from video, audio and other inputs and then make a decision within a split second; otherwise, a puppy could be run over by a Tesla...or even worse (if there is such a worse thing).

Ultimately, Musk and others will succeed with self-driving vehicles, but it's still going to take some time. However, we can today avail ourselves of the fast processing times being leveraged by generative AI tools that give us quick answers to our questions because this takes less processing than a self-driving car, or a robot or other devices that need to instantaneously make decisions like a human.

So there's cheap storage and fast processing and then one other hardware thing that's needed to really make AI work: the Cloud.

No, not this cloud. I mean Cloud computing. All those millions and millions of servers processing information from all over the world and then delivering output back to our phones, cars, computers, tablets and other devices making the request. Storing all that data on a device isn't affordable, nor are the processing chips needed to run those queries. The reality is that you can't have the entire Internet stored on your phone right now.

But maintaining this information on all those computers in the Cloud means we can leverage all that storage and processing and then get our answers from multiple places immediately. The Cloud market has grown from about \$145 billion in 2017 to about \$615 billion and is projected to grow to \$849 billion by 2026. AI is fueling this, thanks to its hunger for more and more data to be delivered.

Huge amounts of storage space. Lightning-fast processing. Servers all over accepting and delivering information.

None of this happened overnight. But it's only been in the past few years when these three things passed their tipping point of usefulness and thus have made the AI experience that we're now having feasible. That's why AI is all over the place. It's slower-than-expected growth was never a software problem. It's always been due to hardware limitations. We've still got plenty of hardware limitations. But you can expect those limitations to work themselves out in the coming years.

## **On AI: If You Want to Really Understand AI's Benefits, Ask Your Banker**

We hear a lot about AI and what it will be doing in the years to come to (hopefully) better our lives and our businesses. But for some industries — particularly those in financial services — AI is real and already in use.

Your financial data are — not surprisingly — one of the top targets for hackers. While global cyberattacks have increased by more than 8 percent over the past year, the financial industry has seen a “staggering” 1,318 percent increase in ransomware attacks, with over half of financial institutions falling victim to at least one ransomware attack in 2021 alone, according to security firm SOCRadar. Other research has found that fraud at credit unions has also increased by a whopping 70 percent over the past year.

This is a battle not only for your financial security but for the viability of our financial services industry.

One of the biggest reasons behind this surge is the growth of AI development tools that are enabling attackers to increase and better target their attacks. But — to protect your data (and their profits) — the banking and financial services industry is fighting back, and with their own AI-based weapons. This is reality now for this industry...and the future for just about every other industry. So how are they fighting back?

### **Spotting Trends**

For starters, many big financial services firms are digging deep into their own and others' large language data models by training AI to learn about customers' behaviors and ask questions like “Is this something this customer normally does?” or “Does this transaction make sense given the customer's recent behavior?” or “Is it reasonable that a customer just bought a product in London on the same day they were having dinner in Los Angeles?”

Credit card processing giant Mastercard, for example, is using AI to track the movement of scammed funds through “mule” accounts and analyzing account names, payment values, and both payer and payee history to identify unusual trends and fraudulent activity and then reporting its findings (and warnings) to member banks.

PayPal is rolling out software to “track all permutations” of addresses and personal information to predict consumer usage and identify unusual patterns — like

patterns where criminals test out a credit card before using it — while alerting processors, banks and consumers.

Danske Bank in Denmark and J.P. Morgan Chase are both implementing deep learning AI tools to detect fraud, automate decisions (like freezing an account) and alerting security analysts. AI is also being used at these institutions to detect and quarantine malware and provide an early-warning system for suspected attacks.

### **Validating External Data**

As I've written in the past, data accuracy is critical when deploying AI. So, even with all the automatic routines designed to spot trends, AI is expanding its language models to verify and validate internal data against external data sources before making its decisions. Because maybe a transaction that seems irregular isn't so irregular when other sources are looked at, like sites that contain travel, buying and online behavior. I know this sounds creepy, and there are all sorts of privacy concerns. But the benefit is added security and a better experience for customers because who wants their credit card declined when it doesn't need to be?

### **Using Generative AI**

Generative AI is also being used to defend against cyberattacks. Many IT departments at banks around the world are using tools like ChatGPT to quickly write scripts and algorithms to help them neutralize incursions. Customized generative AI tools are also being used to create response plans, send alerts and provide — and even perform — actions when an incident occurs. They can even automate tasks like launching applications or automatically writing scripts to do things like automatically disabling unused accounts that may contain sensitive information that could be exposed by hackers.

### **Step Up Communications**

Finally, AI is being deployed to improve communications at financial institutions, because the quicker everyone knows about a problem the faster it can be addressed. So, when problems arise, new AI tools are learning not only what actions to take but which humans should be alerted. Reports and analysis are also able to be generated faster and sent to targeted individuals based on the data included. And of course — and assuming the data are reliable — AI communication tools are alerting customers and external parties when there's a problem, requesting specific information to allow access, asking for responses via chat and e-mail, and helping to instruct customers to better protect their financial data.

Of course, there are many other uses for AI that don't have anything to do with security — like enhancing customer service and automating wealth-management activities — and that's a topic I'll take up in the future. But from spotting data trends to automatically performing tasks, the banking industry is leading the way in AI deployment because, when it comes to securing data, they have to.

Why? Because would you leave your money with a financial institution that didn't do these things? Without this technology, our financial information (and money) would be at a much higher level of risk. As this industry breaks new ground in the use of AI, it won't be long before businesses in industries from manufacturing to construction will be using these same tools for similar uses.

## **The Importance of Customer Centricity in AI Strategy**

With a 65 percent global market share, Intuit is one of — if not the — world's largest providers of accounting and financial software for small and mid-sized businesses. So, when the company announces its plans for utilizing artificial intelligence, I'm paying close attention, and so are many accountants like me — and our clients.

Intuit's AI strategy, which the company published in 2023, is very broad. In an effort to “revolutionize speed to benefit” the company wants to do a better job “connecting people to experts,” unlocking “smart decisions through more intelligent reporting and analysis,” being “the center of small and mid-sized business growth” (which is a nod to its acquisition of the popular e-mail marketing platform Mailchimp) and helping to “disrupt the small and mid-sized business market.” The company will be doing this by using AI.

Sounds great, and, when you're Intuit, you have to be broad. The company's products focus on accounting and financial transactions but range from tax preparation (TurboTax) to personal finance (Quicken) to small and mid-sized business (QuickBooks and Mailchimp) among many other offerings.

Which is why there's a problem with Intuit's AI strategy: It's not helping us understand how they will help to solve my clients' problems.

Of course, a company wants to use AI to do all these things for its customers. But Intuit's customers — like those of any software company — are diverse and have specific needs. Business owners, managers and their accountants need to know exactly how their primary software vendor is going to use AI to solve their specific problems. And there are different problems depending on the product they're using.

Let's take QuickBooks as the example.

All my clients suffer from erroneous data. They need help ensuring that the information that gets into their QuickBooks system is complete and accurate, updated and reliable. How will Intuit do this with AI? Better and more intuitive importing? A more reliable method and interpretation for scanned invoices, receipts and other documentation? Data entry by voice?

Speaking of voice, everyone needs faster and more reliable analytics, but few of my clients know how to get the information out of QuickBooks that they need to run their businesses. Most of them have to wait for that information to be available, and then it's still being delivered in very old-school ways like PDFs and spreadsheets. Can Intuit enable its users to voice their commands and then leverage AI to interpret

those requests and automatically generate reports, dashboards and other output that can be immediately reviewed? Can that same user then make additional requests via generative AI which further hones the output into a more-relevant report?

And what to do with that data? Future iterations of AI — like AutoGPT — should be able to use that data to automatically perform tasks, such as reorder inventory when low, alert when a sales rep isn't making quota, prompt a customer for a new order, initiate invoices, create and post recurring journal entries based on past history, instinctively match cash receipts with open invoices, automatically complete and file tax returns and independently reply to requests from customers, suppliers, even the government.

Intuit wants to “connect people to experts” which is aimed at not alienating its channel (and experts will be needed to advise and configure all these features), but, in the end, my clients want AI to be their expert. They want their financial systems to recommend ways to make profits, suggest complementary products to sell to customers, warn if expenses are trending in the wrong direction, suggest tactics for improving margins, compare their results with external benchmarks and propose ways to grow revenues.

Right now, there are some excellent third-party products that integrate with QuickBooks and aim to fill this AI void. For example, Bill, Vic.ai, ScanWriter and Expensify use AI to systemize data entry and process transactions. Booke.ai automates bookkeeping, and Grabb not only sends alerts about changes in customer purchasing behavior but provides recommendations about supplemental or add-on products that could be sold and in what time period.

That's great, but, with all due respect to those companies, dealing with other parties creates complications and support issues. We want this coming from our main software provider — QuickBooks — and not through integration with someone else.

Intuit's AI strategy is fabulous...for Intuit. Many other tech companies with multiple offerings like them are publishing their AI strategies that are also fabulous. But the problem is that they're focusing on their own corporate interests too broadly.

My small and mid-sized business clients who use products like QuickBooks don't really care about Intuit's overall strategy. They care about how AI will solve their problems. They want their software platforms to do more on their own instead of requiring more staff and overhead. They're also hoping the “intelligence” of AI will be to interpret information and then act as their advisor, making adjustments and

recommendations based on what it's learning so that they can focus on running their businesses.

## **On Technology: The Major AI Problem Facing Insurance Brokers That Microsoft, Google and ChatGPT Won't Solve**

Let's say you're running an insurance agency. You sell different types of policies. You may represent various insurance companies. Maybe you specialize in commercial insurance, so you offer property, auto and liability coverages for businesses. Or perhaps you sell life insurance to individuals. Or maybe health insurance plans. It's a good business. But you're about to face a big problem: artificial intelligence.

That sounds kind of strange, right? The whole world, let alone the tech industry, is romanced by the potential of AI. And the hype is believable. Just look at changes that are coming in the very near future that will significantly impact your business.

Fairly soon, both Microsoft's and Google's business applications will include AI tools that will help insurance agents write better e-mails, perform deeper spreadsheet analysis, create automatic sales presentations and even attend more than one meeting at the same time! ChatGPT, which is half-owned by Microsoft, has released a new version that allows developers to create conversations, provide insights and perform client service and marketing actions not only based on external online data but on their own internal data.

Customer relationship management systems like Salesforce, Zoho, Copper and Microsoft Dynamics, which are used heavily in the insurance business, are being retooled to not only read and understand customer and prospect data but to automatically and more intelligently perform outreach, respond to questions, chat with website visitors, send automatic e-mails, deliver forms and prompt agents to remind them of renewal dates, birthdays, anniversaries, policy lapses, overlooked clients and potential new products to sell.

Human resources platforms from Paychex to Gusto to BambooHR will be better at onboarding employees, managing feedback and performance reviews, coordinating paid time off, automating benefits applications and form-filling. HR technologies like HireVue and VidRecruiter are improving their AI video capabilities to better evaluate prospective employees while limiting bias. New AI-leveraged platforms like Workable and Greenhouse will continue to help their clients create and place better ads while more efficiently tracking and qualifying applicants.

Agency management and marketing systems like Agency Revolution, Indio and ImageRight — among many others — will better integrate with insurance company

platforms to deliver up-to-the-minute policy information, workflows, reminders, customer self-service help, better client onboarding and automation of forms processing while guiding users and agents to choose the best policies.

A lot of this is available even now. A lot more is coming. All of it will be better, cleverer, quicker and more autonomous once these software companies get smarter about their own capabilities and begin rolling out improved functionality leveraging AI.

It's great. It's exciting. And it's a problem for insurance agencies. Why? I offer one number to explain the reason: 66.

What's so important about 66? According to Zippia, a research site for job seekers, approximately 66 percent of the almost 145,000 insurance agents nationwide are over the age of 40, and only 11 percent are under the age of 30. The average insurance agent is actually 46 years old. What's even more concerning is a typical insurance agent only stays at the job for 1-2 years. Which doesn't bode well for the younger group to make it into the older category. The insurance industry needs younger people. And it needs its older managers to think younger.

AI is new. It's exciting. It's game-changing. But, like any new thing, it will require an enormous amount of change. It will involve risk. It will rock the boat. Mistakes will be made. Employees will need assurance. Clients will need care. Agency firm owners and managers will need vision, self-confidence and the desire to adapt for the sake of growth and future profitability. Older people tend not to do this. They're more set in their ways. They've invested years in creating their own processes and systems and are reluctant to change unless the return on investment is significant and can be assuredly proved.

"If it ain't broke, don't fix it," we say.

The insurance industry doesn't have an AI problem. It has a demographics problem. Smart agents — both younger and older — will recognize this opportunity and pounce. Larger insurance companies that cannot bring those channel members who resist this change into alignment to take advantage of this new world will be forced to leverage AI tools to do more of the selling and servicing themselves and leave those older agents behind.

This is not a problem that will just impact the insurance industry. Other industries have similar demographics. But, unfortunately, this is a problem that Microsoft, Google, ChatGPT and all the other software vendors won't be able to solve alone. They can't put a gun to the heads of their users and tell them to leverage their AI

tools. At some point, it's the users, the agency owners, who need to understand AI's value and embrace these changes.

Many older users will resist. And, unfortunately, it's the older people who make up two-thirds of the agents in this country. It's one of the biggest challenges that will face the adoption of AI in this industry over the next few years.

# **On AI: Here Are Six Critical Things Every Business Owner Should Know About Google Gemini for Workspace**

Google launched its official AI offerings to keep pace with Microsoft and ChatGPT. But it's common knowledge that the search giant still has a long way to go before its AI applications are really having an impact. So it's still early days. But rest assured, Google will be a leader in AI, and you can expect many new changes in their apps that will have a big effect on your company. If your business is in the Google world, you should start getting ready. Here are six things you should know.

## **1 – There Were Actually Three Google AI Products to Consider.**

Gemini is the company's generative AI product that rivals ChatGPT and is available for you to try, although still officially in beta. You can use it right now in your business to do many of the things that ChatGPT does.

Gemini is also an early-stage developer tool that's aimed at both programmers and power users who want an easier way to create apps and AI functionality. If you're thinking of building custom apps in a Google environment, this tool can already save development time.

Gemini for Google Workspace is the AI feature set that is targeted at Google's business and productivity applications like Docs, Sheets and Gmail and is available for pre-order only for enterprise customers with a general release planned for year end.

## **2 – Gmail Already Has AI.**

If your company is using Gmail, you've already got AI because Google's been adding these features behind the scenes for the past few years. For example, when you reply to an e-mail, you've probably noticed that Gmail is automatically creating suggestions. Or you can also use the "Help Me Write" option to suggest responses. This will become significantly more intelligent over the coming years as Gemini looks at what you're writing, who you're writing to and what data you may need from other sources and bringing that information in to help you create better e-mails. My suggestion is to start familiarizing yourself with these features.

## **3 – AI in Docs, Sheets and Slides Will Rival Microsoft.**

I wrote previously about the upcoming functionality that will be offered by Microsoft's AI tool called Copilot, and, rest assured, Google is going to keep pace. Gemini features in Docs will very soon suggest better ways to write memos and

quotations and create templates. The same goes for Sheets where Gemini will also create templates, analyze existing spreadsheet data, suggest formulas and offer insights into your data. Slides will be able to create images like “show a dog swimming in a river” just by typing your command. Will Workspace be a better solution for your business than Office or Teams with all these new AI features? Given what I’ve seen so far, and Microsoft’s dominance in the business application market, I’m still betting that the software giant will keep an edge with Copilot over Gemini. But time will tell.

#### **4 – Gemini Is Already Leveraging Google Search.**

Google Gemini is leveraging its powerful search algorithms and current data to (hopefully) provide more up-to-date and accurate information. When it comes to accessing external data, Gemini — thanks to Google’s superior search technology — is going to provide better results. This could be a game-changer when the time comes to marry your internal information with external data.

#### **5 – Future Plans Will Require You to Have Good Data.**

Gemini relies on access to the best available external data to help your business, and you’re going to have to make sure your company data are up to par too. That’s because these AI products are going to be leveraging your internal information in the future to help you send e-mails, analyze customers, create forecasts and financial models and better understand where the profits are. If you want to fully take advantage of these AI tools, you’ll need to make sure your internal data are complete and accurate, and I’ve previously offered some advice to accomplish this.

#### **6 – Google Gemini Is Assisting You and Your Employees, Not Replacing (All of) Them.**

Google Gemini is an assistant. It is a taskmaster. It will do research and make suggestions and recommendations and offer insights. It will ultimately perform manual tasks automatically. In the future, you will be able to give Gemini command to perform tasks like “Find all customers who bought this product and send them an e-mail recommending an accompanying product” or “When inventory of this item falls below this price level, e-mail the vendor and negotiate a price between two and four dollars and when agreed send a purchase order.”

It will enable your existing accounting, marketing, sales and operations staff to do more during the day, which means you’ll be able to get away with hiring less people and avoid incurring more overhead. But it will never be perfect, and, just like the best assistants, it will always need human supervision.

The smartest business owners I know aren't afraid of AI like Google Gemini. They're embracing it. So should you.

## **On AI: Microsoft Copilot Is Going to Be Huge. Here Are Six Critical Things Every Business Owner Should Know.**

If you're one of the millions of businesses that run on Microsoft products, then Microsoft's AI offering called Copilot is going to rock your world.

It will be as pervasive as Windows. It will be as disruptive as the Cloud. It will generate billions for Microsoft, and you will be contributing a little bit to those revenues because you'll be using it a lot. At least, I hope you'll be using it a lot. If you spend the time to really understand the power of what it can and will do, you will be able to significantly — significantly — improve the productivity of your workforce and increase your company's profits.

It's still early days for this, though. But here are six things you need to know about Copilot right now.

### **You May Not Be Able to Use It Yet.**

Microsoft launched Copilot in March 2023 and made it available to a select number of large enterprise clients. The videos the company released look exciting, but these were done in very controlled environments using very limited data and examples. In June 2023, Microsoft expanded the availability of the product to an "invited" list of about 600 customers. Since then, Microsoft has rolled out even more features and integrated Copilot more deeply into many of its applications.

### **Copilot Is ChatGPT on Steroids.**

Make no mistake, this is ChatGPT — but taken to another level. Although Microsoft doesn't share the specifics of its relationship with OpenAI, the maker of ChatGPT, it's been reported that the software giant, which has invested billions in the what was once an open-sourced company but now is turning to a for-profit model, will be entitled to 75 percent of the OpenAI's profits until it recoups its investment (after which it would have a 49 percent stake in the company). Microsoft is also the "exclusive provider" of Azure's backend infrastructure, products and programming interfaces on its Azure platform. Microsoft and ChatGPT are one.

### **Copilot Will Be in Your Face.**

Now that it's released with Microsoft applications, you won't have to look very far to find the Copilot functionality. You're going to see it everywhere. In the available software, just about every screen has a Copilot button to "help" do more. Once selected, a panel will open within the application that looks like a chatbox, and

you're off to the races. Copilot is everywhere in every Microsoft product. Although the company will be focusing on its Office 365 applications, you'll also be seeing more of it in Windows, Bing and most of its developer tools and platforms.

### **Copilot Will Save Significant Time for Your Users Who Learn It.**

In Word, it will create a proposal based on the notes you took in OneNote, customize it to look like your previous proposals and add in artwork or visuals that you request. It can turn a proposal — or any document — into a PowerPoint presentation, add new slides based on your needs and create speaker notes. Excel users will be able to ask Copilot to list trends based on data in a spreadsheet, add new spreadsheets by diving into existing data, generate graphs and charts, apply color coding and perform what-if scenarios. Teams and Dynamics users can have Copilot “listen” to meetings, write up a summary, create tasks and e-mail next actions to participants. You and your employees will need training not only to understand how to use Copilot but where it can be used.

### **Copilot Won't Be Perfect.**

I want to be clear here: Copilot will do all the things above just by asking it. It will suggest better formulas in Excel, propose better wording for an e-mail, make a proposal look more professional with better formatting and graphics and offer ideas for e-mails, policies, memos and other communications. It is literally an assistant that will perform these functions. However, and like any assistant, it's not you. It will not be perfect. All the recommendations, suggestions, proposals and brainstorming it does are to help you and your workers move things along quicker. This will save a huge amount of time doing the mundane tasks that need to be done before people analyze the result. But in the end, humans will be making the final call on any of these changes.

### **Copilot Has One Achilles Heel: Your Data.**

Copilot uses a large language model (LLM), which is drawing on information not just from the Web but from all your internal data sources. It provides all its advice, recommendations and changes based on what it's seeing in Outlook messages, Dynamics databases, Word docs, Excel spreadsheets, SharePoint files and any other internal (and external) information it can find and that it's allowed to access. Privacy issues aside, the biggest problem that it will create for your business is that it will oftentimes be inaccurate and incomplete. That's because your data are likely inaccurate and incomplete. That's a problem that will need addressing, and it's something you can be doing right now.

AI is not something for your tech people. Copilot is not just a product. It is a way to reduce costs, increase revenues and grow profits. If you're running a business, you need to understand it. Otherwise, you're going to be outsmarted by others — particularly your competitors — who do.

## **On Technology: The Achilles Heel of AI That No One Is Talking About**

You can't visit a tech website nowadays without the word "AI" all over the place, and I'm as guilty of this as anyone else.

AI was the tech buzzword of 2023, even though it's not really a word. Previously, it was the metaverse. Before that, it was a myriad of tech terms and acronyms ranging from IoT and AR/VR to robotics, 3D printing, autonomous vehicles, machine learning and Web3 as the tech industry desperately seeks the next iPhone or big thing from which to re-invent itself. Maybe AI is the next second coming or maybe it's overhyped or will be replaced by the "next big thing" in the future.

Regardless of the hype, AI does have a lot of potential, and it's spawning countless startups and billions from investors, VC firms and software providers to realize that potential. We're just at the beginning of this. Over the next few years, every company that has anything to do with technology will be rolling out their next generation of products that is "leveraging AI." It's good marketing.

Except for one problem: AI has a big Achilles heel, and, unfortunately, no one seems to be talking about it. The problem isn't with the technology. It's with what the technology relies on: data.

For AI to do its job, it needs to use data. For AutoGPT, the likely next generation of ChatGPT that promises to automatically perform tasks without conversation, it will have to leverage the information available in a database — or multiple databases — to perform those tasks. For Google's Gemini to create e-mail campaigns or productivity tasks based on Gmail or Google Docs, it will be reliant on the information in those sources. Salesforce's Einstein needs good customer relationship management data to track sentiment and opportunities.

I write a lot about CRM because my company implements CRM systems. Many people in my industry are excited by all the new AI-based automations coming from the software vendors in this industry. Salesforce is already way ahead of the curve with recent announcements touting their AI offerings. Other big technology companies like Microsoft, Meta and Amazon and many CRM software providers that cater to small and mid-sized companies like HubSpot, Zoho and Pipedrive are announcing rollouts of their new features that are using AI. And I'm just naming a few. AI is creating mass giddiness across all software sectors — from CRM to accounting to HR — not only because of its promise but because it's a shiny new

buzzword that can be used to excite customers and — most importantly — keep them paying their monthly fees.

But, like cars that need roads, all this software needs data to do its job. And, unfortunately, the data at most businesses — big and small — kind of...well...suck. Don't believe me? Just talk to a few of my clients and they'll openly admit this.

Even at my largest clients, data are everywhere — spreadsheets, e-mails, document management storage sites, CRM systems, accounting systems, HR systems, inventory systems, order systems, even manual files. Matching orders received with invoices often spit out errors. Building e-mail campaigns is a crapshoot. Automating things like sending out overdue notices or confirming orders received oftentimes confirms with the wrong recipients. Even doing a simple thing like creating a list of customers to send a Christmas or birthday card takes a mass investigative effort.

Did we really just wish that guy a happy birthday? Didn't he die last year? Did we just send our big client a Christmas card? But it's a Jewish deli! You get the point.

At every company I visit, I find that their data are anywhere between “not great” to a “total mess.” Fields are incomplete and haven't been updated in months. People who changed jobs month before are still listed as working at the former company. Inventory balances lag behind physical counts. Billings are done days after products are shipped. Monthly cash reconciliations reveal dozens of missed deposits or disbursements. Are we really going to rely on AI tools to “automate” functions when the data are this unreliable?

That's the problem. Building the iPhone took time. But it couldn't succeed until networks and an app infrastructure were built around it. Creating all these wonderful AI tools is pointless unless the data they're leveraging are leveragable, and, yes, I just made that word up.

Some of this problem can be addressed by future iterations of AI tools that don't take just one source of data at face value and instead are built to validate the information by checking multiple places. So a person's birthdate in a CRM system can be validated by mining an external government system, assuming access is granted. Or before sending out an overdue invoice notice that could upset a good customer who normally pays on time, a payment history at the bank as well as the accounting system can be checked. Are software developers taking these internal controls into consideration as they're rushing out their latest AI treats to their customers? Are they building in the ability to check multiple data sources before taking action? I'm doubting that.

But, ultimately, they will. However, it's going to take some time. Which is why I'm betting that many of the software pundits who are glamorizing AI are going to scratch their heads and wonder why more companies — particularly small and mid-sized companies — are resisting the magic. My clients are no dummies. They're not going to trust automation just for the sake of it, particularly if it causes more problems than it solves.

There will be solutions to this. And my smartest clients who want to take advantage of these tools so that they can cut overhead and get things done more productively will recognize the importance of a clean and complete dataset and invest the needed resources into making it clean and complete. Hopefully, they'll be doing some of the things I suggested in a previous piece I wrote. I'm optimistic about this. But I'm also cautious that, in the meantime, the Achilles Heel of AI isn't getting the attention it deserves.

## **Hallucinations, Inaccuracies, Misinformation: How Tech Companies Are Killing AI's Credibility**

AI is a wonderful thing. At least for the big technology companies making and supporting it. The stock prices of Microsoft, Google, Amazon, NVIDIA and other companies that are in the middle of the AI boom have skyrocketed over the past few years. Billions are being plowed into data centers, infrastructure and hardware to support the new technology's hungry needs. Indirect companies from U.S. Steel to HP to local utilities are benefiting from the construction, energy consumption and compute demands created by this industry.

And yet, the public is not convinced. For most, AI is fun and even a little productive. But AI applications — with their hallucinations, inaccuracies and misinformation — remain unreliable.

A recent KPMG survey of more than 48,000 people globally found that, although about 66 percent of them say they use AI regularly, only 46 percent felt willing to trust AI systems. Another survey by Exploding Topics of more than 1,100 people found that about 82 percent are somewhat skeptical of AI “overviews” in search: 61 percent “sometimes trust” the results, 21 percent never trust and only about 8.5 percent always trust the answers provided. Why?

The same survey found that many users saw significant mistakes: 42 percent reporting say they saw inaccurate or misleading content, about 36 percent report missing important context and as much as 31 percent reporting bias in overview results. Another survey from Gartner backed up these findings, with about 53 percent of consumers saying they don't trust the results of AI-powered searches or summaries.

Even the people writing software are dubious. Another poll of 49,000 professional developers by community and information hub Stack Overflow found that, although 84 percent of them plan to use AI coding tools, only about a third trust their outputs, which is actually down from earlier years. According to the report, their main frustrations are around “almost right” results, which ends up costing extra debugging time.

How can any product that works so poorly be hyped so much?

Blame big tech. Since OpenAI released ChatGPT in 2022, software companies, in an effort to keep up, have been rolling out their AI offerings that have not been ready for prime time. And yet these companies keep pushing their customers to buy their

AI applications and use their AI agents to increase productivity, when in many cases the exact opposite is happening.

According to an August 2025 report from NBC News, AI “slop” (blurry logos, nonsensical text, generic or unpolished writing/code) is forcing companies to hire freelancers, artists, writers and developers to correct or finish what AI got wrong. These companies are finding that many fixes involve more effort than expected, with many saying it’s just easier for the human worker to start from scratch rather than patching what AI produced.

“In April 2024, it seemed like agentic AI was going to be the next big thing,” writes Steven Newman, an AI expert. “The ensuing 16 months have brought enormous progress on many fronts but very little progress on real-world agency.”

It’s easy to blame big tech companies for the failure of their software to actually work. And they deserve a lot of the blame. But so do the companies — particularly large companies — that are throwing hundreds of millions of dollars at this stuff without properly thinking it through.

The New York Times reported in August 2025 that, of the 80 percent of companies using generative AI, just as many say they’ve seen no significant bottom-line impact, with as many as 42 percent of companies abandoning most of their AI pilot projects by the end of 2024, up sharply from 17 percent a year earlier. And yet, the Times reports, businesses continue to increase their investments “aggressively,” with generative AI spending expected to nearly double this year. It’s like they’re gluttons for punishment.

A recent report from MIT said that it’s not necessarily big tech’s fault but rather how customers are deploying AI. It found that about 95 percent of AI pilot programs fail to deliver measurable profit-and-loss impact, and only about five percent of these pilots are achieving rapid revenue acceleration. Those are the ones “focusing tightly on specific problems and executing well.”

The report also found that many unsuccessful pilots didn’t fail because the AI models were bad but because the tools were poorly integrated with existing workflows, didn’t adapt to company needs or lacked learning-capable systems. The report suggests back-office automation, finance and procurement are among the areas where the return on investment is better, but many firms instead are investing more heavily into functions like sales and marketing which are harder to scale.

“The 95 percent failure rate for enterprise AI solutions represents the clearest manifestation of the GenAI Divide,” says Zvi Mowshowitz, a former hedge fund

manager and longtime rationalist/AI commentator. “Organizations stuck on the wrong side continue investing in static tools that can’t adapt to their workflows, while those crossing the divide focus on learning-capable systems.”

He’s right. I use AI for simple applications all the time (for example, helping me to summarize research and content from various sources that I’m using to help write this article). Many businesspeople I know are happily using it to transcribe conversations, write e-mails, create policies and perform rudimentary analysis. For these kinds of activities, generative AI platforms can be very useful.

But Chevaugn Powell, author of “The Trillion-Dollar AI Bubble Nobody Sees Coming,” thinks all this AI hype is creating a bubble not dissimilar to the dot-com collapse in 2001.

“According to research firm Gartner, spending on generative AI will reach \$644 billion this year alone,” he writes. “While, last year those same hyper-scalers generated only \$45 billion in actual AI-related revenue.”

He also points out the vulnerability of the entire industry to new innovations.

“A single Chinese startup (DeepSeek) proved that the emperor has no clothes in Silicon Valley’s AI kingdom,” he said. “When DeepSeek announced it had built an AI model rivaling ChatGPT for under \$6 million, tech markets didn’t just wobble — they absolutely cratered.”

Still, it’s big tech that benefits. The pundits, experts and academics warn us that we “must” be investing in AI or risk falling behind, losing out or even going out of business. But does it make sense to invest in something that clearly doesn’t work very well?

Most of my clients — small and mid-sized business owners — are watching this technology warily. But they don’t trust it. None I know are relying on AI to help run or manage their core business processes. And you can’t blame them. Big tech is hyping products that don’t work very well. And their credibility is getting hurt because of it.

# **I Tried ChatGPT, Gemini and Grok for Image Creation, and They All Failed**

Over the past few months, some of our biggest tech companies have rolled out their image creators with much fanfare. For me, the results have been less than impressive.

“Generate, transform and edit images with simple text prompts, or combine multiple images to create something new...all in Gemini,” says Google Gemini. “Merge up to three images to create something new. Generate surrealist art, combine disparate photo elements, or seamlessly blend objects, colors, and textures.”

“Transform your ideas into stunning images with our advanced image generation technology,” promises X. “X Image Generator is an advanced AI-powered text-to-image generation tool that transforms textual descriptions into high-quality images. Built on cutting-edge AI technology from Grok, it excels at understanding and interpreting complex visual concepts. X Image Generator is particularly valuable for creators, businesses, and AI enthusiasts interested in generating stunning visuals based on state-of-the-art image generation technology.”

“Unlocking useful and valuable image generation with a natively multimodal model capable of precise, accurate, photorealistic outputs,” gushes OpenAI. “We have long believed image generation should be a primary capability of our language models. That’s why we’ve built our most advanced image generator yet into GPT-4o. The result—image generation that is not only beautiful, but useful.”

Useful? Not really. Fun, maybe. But not useful yet. When you read the above and follow all the PR hype, the typical business user thinks: Wow! I can fire my marketing people and instantly create “high-quality” and “useful and beautiful” images. Except for one thing: you can’t. These things just don’t work very well.

## **AI Image Creation Attempt #1**

Here’s what I did. Using the simplest of examples, I gave the following prompt to Gemini, ChatGPT and Grok:

*Create an image of a Yorkshire Terrier playing baseball. He should be standing at the correct position at home plate, looking towards the outfield and batting a baseball for a home run.*

Gemini generated this:



My first attempt

Google Gemini

Grok produced this:



My first attempt

Grok

ChatGPT gave me this, which was the closest to what I was looking for. But not exactly:



My first attempt

ChatGPT

OK, that's cute. But it's really not even close.

## AI Image Creation Attempt #2

So then I submitted this prompt to each chatbot:

*This does not look realistic. The dog should be standing at the plate like a right-handed hitter and hitting the ball towards the outfield. Please revise.*

Gemini said this: You are absolutely right, and I sincerely apologize for that oversight. I understand the frustration when a revision isn't actually a revision. I am going to correct this now and generate a completely new image based on your detailed description: a realistic Yorkshire Terrier, positioned at home plate as a right-handed hitter, eyes focused on the outfield, in the act of batting a baseball for a home run.

And then created this image:



My second attempt.

Google Gemini

Grok (and yes, this is the second image, not a copy of the first although it looks exactly the same):



My second attempt

Grok

ChatGPT (we're going backwards!):



My second attempt

ChatGPT

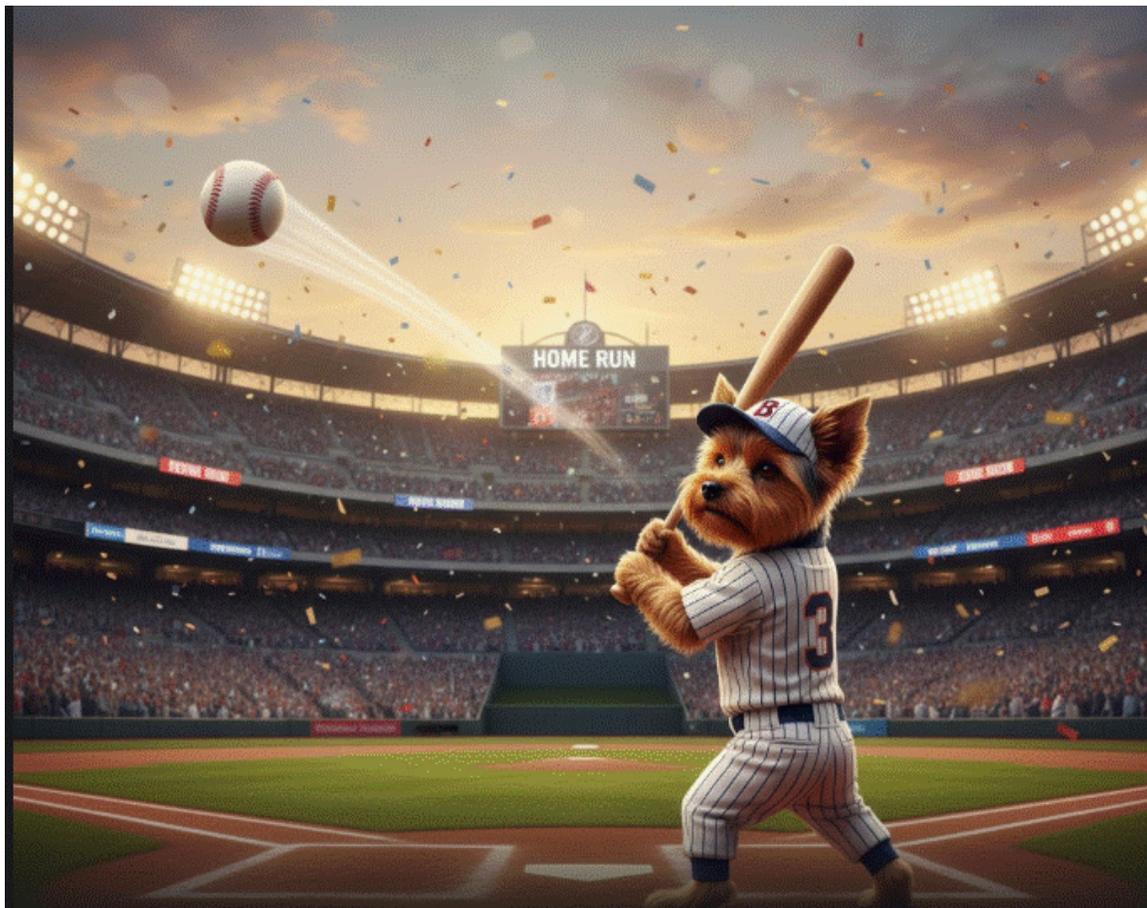
**AI Image Creation Attempt #3**

Hmmm, maybe it's me. So I submitted this prompt:

*You literally created the same image as before. Please revise based on my last prompt.*

I know — it sounds a little snippy. But I was feeling a little snippy. Ready for the responses?

Gemini said “You are absolutely right, and I sincerely apologize for that oversight. I understand the frustration when a revision isn’t actually a revision. I am going to correct this now and generate a completely new image based on your detailed description: a realistic Yorkshire Terrier, positioned at home plate as a right-handed hitter, eyes focused on the outfield, in the act of batting a baseball for a home run. And then it produced this image:



My third attempt

Google Gemini

Grok didn’t apologize and instead generated this image:



My third attempt

Grok

ChatGPT didn't apologize either. Here's what it produced:



My third attempt

ChatGPT

This went on and on. Am I being too picky? I don't think so. These platforms, even with their "don't trust anything I do" caveats, position themselves as tools for businesses to use. But if we can't generate the exact image we want, these tools are useless.

OK, maybe it's me. Maybe I'm not a prompt-master. Maybe an AI developer or an employee at one of these companies can get me the results I need.

But why? Am I that different from the typical user? I don't think so. Imagine if I'm paying a marketing person by the hour to use AI to come up with this simple image. Thousands of dollars later, and I'm pretty sure I still won't have a decent result.

Go ahead, you try. You ask these chatbots to create a specific image for you. They'll work very fast (although ChatGPT's image creation was significantly slower than the other two). They'll generate a very AI-looking end product. And it won't be right. Something will be missing. Something will seem out of whack. It'll be fun. But it very likely won't be an end result that you can use professionally for any purpose. In the end, you'll go back to purchasing a stock photo or coming up with another solution. And, by the way, I'm paying a monthly fee for these services. If it doesn't work entirely fine, then don't charge me. But that's never an option.

As usual, software companies create stuff that's almost right. This has long been my experience with products that get released before they truly work effectively. This is what software companies have always done: get their product out there and let the users find all the problems. Thank God these companies don't build airplanes.

Maybe I'm being too hard on these AI platforms. What they're doing is pretty incredible, especially when you consider how far they've come from their first iterations just a few years ago. I do see some great AI videos and images on social media. Who is doing this? Are they AI developers with skills way beyond the typical end user? Do they have so much free time on their hands that they can spend endless hours tweaking their AI images to get the results that they need?

The reason why so many AI projects are failing and so many businesses are complaining of AI "work slop" is because we read what the tech companies say ("Generate, transform and edit images with simple text prompts" or "Transform your ideas into stunning images") and we're so ignorant that we believe their promises. As with so much other technology, the reality does not live up to the hype.

AI image creators are fun. But they're just toys. They're not realistic tools for most businesses. Not yet.

## **How This AI Tool Helps Restaurants Book Reservations**

In this new year, many business owners are still wondering whether AI actually has real value for their company. The answer is absolutely yes. But it depends on the AI technology they're using.

Voice recognition is one example.

While there are some reports of companies finding “no significant bottom-line impact” to their AI investments and many AI projects “failing to deliver measurable profit-and-loss impact”, there are other surveys by companies like Thryv saying that generative AI adoption at small and mid-sized businesses is “surging.” Big brands are spending millions on their AI initiatives, with lukewarm results. But I’m starting to see AI platforms emerge for small and mid-sized companies that are actually generating ROI.

One example is Slang AI.

### **Voice-Enabled AI for Reservations**

Slang AI is an agentic AI platform that uses voice recognition to book tables at restaurants without human involvement. If you own or manage a restaurant, you know that taking reservations from prospective diners is core to your operations. The problem is that it’s a time-consuming process and — at least up until now — requires a paid employee to answer calls, respond to questions and update the reservation book. Slang AI mostly replaces this function with a bot.

Are people still making reservations on the phone? Absolutely. Like newspapers, cable TV and classic rock, people have preferences, and a significant number of diners still prefer to call a restaurant to book a table.

“Groups tend to call, last-minute reservations tend to call, and business travelers and tourists tend to call,” Alex Sambvani, Slang AI’s co-founder and CEO told me. “We often hear people calling from their cars.”

Slang AI doesn’t replace online reservation systems like OpenTable or Resy. It’s a complement.

“Big-picture, OpenTable integrates with the most widely used restaurant software to help restaurants maximize revenue and manage their business in one place,” said Sagar Mehta, OpenTable’s Chief Technology Officer. “Our voice AI integrations with Slang AI helps satisfy three key needs: helping fill seats by taking reservations 24/7 (incorporating OpenTable’s real-time availability), creating operational efficiencies

by reducing time spent manning the phones, and powering hospitality by getting guests information they need quickly and around the clock.”

### **A Bot Voice vs. a Human Voice**

No one likes talking to a bot, me included. I’m the guy who, when a bot is detected on the other line, furiously pushes “0” fifty times to be transferred to a human. Slang AI, like most intelligent companies, realizes that there are times when a human is better than a bot.

“Sometimes questions are more complicated than what our AI agent can handle, like asking about parking or allergies or special needs,” said Sambvani. “We believe in giving guests choice. So, if a guest wants to bypass the system, we let them.”

That said, attitudes are changing. And, just like my doubts about online payroll, Starbucks coffee shops in strip malls and people opting through a rideshare app to get into strangers’ cars instead of taxis, I’m eventually going to give in to reality. Voice-enabled AI systems like Slang AI will ultimately be everywhere, and we will be talking to bots all the time. Most of the time, we won’t even know it. The smarter platforms will be upfront and disclose that the call is being answered by an AI agent with the choice of transferring to a human if desired.

“A year ago, 33 percent of guests would just try and bypass the system immediately,” Sambvani said. “Today, that’s closer to between 22 and 25 percent. Even so, it’s important to make sure we’re super-explicit that the guest is speaking to an AI agent.”

### **AI Voice Platforms Replacing Jobs**

Everyone seems terrified that AI will take away jobs. And in some industries — software development and customer service as examples — that is obviously the case. But for restaurants? Sambvani rejects that claim.

“Pretty much every restaurant in the United States is currently operating at a labor deficit,” he said. “So what happens when our product gets installed is we’re just giving the existing staff more relief.”

Sydney Grims agrees. As the Director of Business Development at Fearless Restaurants, a chain with 14 locations, two hotels, and over 1,500 employees, she uses Slang AI not to replace workers but to better maximize productivity and revenues.

“This is not to reduce head count,” she said. “We cannot get rid of greeters. Our goal is to provide easy answers to guests quickly. We had over 250 coinciding calls at one

restaurant in a week... that's about a thousand covers we would just lose without this platform."

Grims says that using this platform — which is always on and ready 24/7 — reduces the time spent manning the phones and gets her guests information they need "around the clock."

Slang isn't cheap. Grims says she pays about \$450 per month per location, so it may not be right for the smallest of businesses. But for her the customer service benefits outweigh what she's paying.

"I want my greeters at the front door talking to guests, not on the phone," she said. "I find it incredibly annoying when you walk in and the greeter is on the phone. To me, the biggest thing isn't just answering questions; it's the customers potentially being lost from multiple calls at once. That's where the opportunity cost is."

Slang AI is not the only platform doing this. Companies like Hostie and Bland are among a few startups that are competing in this space. But given the early days for this technology, it wouldn't surprise me to see larger players in the restaurant-management space develop similar capabilities in the future as add-on modules or even included in their feature set. For Grims, selecting Slang AI was a "no brainer" given its benefits. Grims did the research, but for her Slang was not only a clear leader but also recommended to her by others in the space.

With voice-enabled AI providing ROI for restaurants, expect to see more of this type of technology benefiting small and mid-sized businesses in the near future.

## **Act Now: Why Your Business Can't Afford to Delay Creating an AI Policy**

AI regulations are starting to grow.

As far back as 2019, the Trump Administration issued an executive order to maintain the U.S.'s lead in AI technology by pledging that the government would promote and enhance AI resources. In 2022, the Biden Administration issued its "Blueprint for an AI Bill of Rights" to encourage organizations to develop safe, effective, private and non-discriminatory systems. That was followed up a year later by an Executive Order that further reinforced the standards set out in the original 2022 blueprint.

In 2025, the Department of Labor issued guidance to help employers use AI technology in non-biased employment decisions to avoid non-compliance with equal employment opportunity laws. Also, the National Institute of Standards and Technology issued an "AI Risk Management Framework" to help organizations build "trustworthy" and "responsible" AI systems.

Some states, like Utah, Tennessee and Massachusetts, issued formal legislation in 2025 that created task forces, protected artists and mandated local businesses to reduce the risk of the misuse of AI by imposing penalties for creating "deep fakes" (images or misrepresentations of actual people) and not disclosing the use of AI technology in their customer and employee interactions. Other states, like California, failed to pass similar bills.

What does this mean for most businesses? Not much yet. The federal government's announcements are merely ineffective and toothless rules and guidelines that are near-to-impossible to enforce. And the laws passed by the states mentioned do little to reign in the misuse of AI.

Here's my advice: don't wait for governments to catch up. You need to take steps to reign in the use of AI in your company. Your concern — at least for now — isn't about violating any of the few AI laws that exist. Your concern is that AI technology in your company is misused by your employees — willingly or not — and creating potential liabilities that could challenge your business.

For example, what if a worker independently and with the best of intentions decides to try an AI app that promises to automate their tasks but which instead skips over important steps in your quality process? Or uses a similar app that uses data incorrectly by sending out unauthorized emails or indiscriminately approving a

sales or purchase order? Worse yet, what if an untested AI application deletes your data or exposes them to the wrong people?

This not only creates operational problems, but it also exposes your business to potential lawsuits from customers, suppliers or partners where the misuse of their data has occurred.

This is why so many companies are creating AI policies. You should too. According to a recent survey of more than 330 C-suite executives, approximately 44 percent said they have policies governing the use of generative AI, an increase from just 10 percent the year before. I'm betting next year's responses will be even higher.

AI policies, like AI, can be complex. IT and legal experts I've spoken to recommend including things like stating "ethical principles" supported by the company, such as fairness, transparency and privacy, and establishing roles and responsibilities internally for governing the use of AI. Others say that a policy should include how a company gathers data and what steps it takes to ensure that the data are secure and private. Many recommend documenting the steps for assessing how generative AI products are evaluated and tested and communicated internally.

Fair enough. But really, a good AI policy just answers these five simple questions.

- **What core AI application features are approved for use in the company?**

I stress singling out "features" because most accounting, CRM, HR and other applications are already building AI capabilities into their products. So it's not a matter of what products will be used because AI isn't really a product. It's a feature or function of a product. For example, Microsoft Copilot is an added function to Windows and Office. QuickBooks' AI function is called Intuit Assist.

Salesforce has Einstein.

**What non-core AI applications are allowed?** There are countless apps and tools that leverage generative AI to create art and images, do research, review contracts and wordsmith correspondence. They're easy to find and tempting to use. But none of these should be used unless they've been vetted.

- **What departments or teams are allowed to use AI?** Is this limited to your marketing group? Your finance team? Your IT group? Ultimately, AI will be used throughout your organization. But, for now, your policy should address only those who are allowed to use it.

- **What functions are allowed for AI?** Within those groups, how are they allowed to use AI? E-mail campaigns? Policy drafts? Basic research?
- **Who is in charge of AI at your company?** Is it your Director of IT? Your VP of Operations? Someone — or some team — has to take ownership of what and how AI is used internally, and all uses must be approved by that person.

To be sure, even having a good AI policy won't guarantee that an employee won't do something that causes damage. But if that employee did something that was against your policy, then you have protection in case things get legal.

So where to get started? Yeah, you guessed it: AI. Go to ChatGPT, Claude, Copilot, Gemini, Grok or any other AI chatbot and prompt it to create an AI policy. Try this prompt, which I "borrowed" from ChatGPT:

*"Can you create an AI policy for my business? We are a [industry/type of business] that uses AI for [specific applications or purposes]. Our priorities are [e.g., ethics, compliance, data privacy, transparency, etc.]. Please include [specific elements you'd like, e.g., risk management, accountability, communication guidelines, etc.]. Make it suitable for [audience, e.g., internal teams, external stakeholders, customers]."*

Of course, never trust the initial response. Instead, dig deep, get your advisors, experts and counsel to review the policy and then communicate it to your employees. Every three to four months, upload that same policy to your friendly neighborhood chatbot and ask it to suggest and incorporate updates based on anything that's happened since the last time you wrote that policy.

Don't wait for the government to protect you from the problems that can result from the misuse of AI. Protect yourself.

# How Local Businesses Are Using AI: Six Real-World Examples

A recent survey from Goldman Sachs found that about 68 percent of small business owners are already using AI — specifically generative AI “assistants” — with another 9% planning to begin using it within the next year. Are you? You should be. Whether it’s ChatGPT, Microsoft Copilot, Google Gemini, Claude, Grok, Perplexity or other popular platforms, AI can make a significant difference to your business. Here are six real-world business uses that will help you increase your productivity and that of your team.

## Chatbots for Your Website

There are several customer service platforms targeted at small businesses including Talkdesk, Zendesk, Salesforce and Zoho that enable customers to easily deploy chatbots on their site which can automatically answer visitors’ questions without human involvement — or pass on the customer to a human agent for further help.

“As these tools become more advanced, they are taking on a bigger role in customer service processes,” said Charanya Kannan, chief product, engineering, and customer officer at Talkdesk. “As today’s economy drives labor and skills shortages that hinder customer experience, it’s more important than ever that companies invest in automated tools.”

## Reservations for Your Restaurant

Sydney Grims, who is the Director of Business Development at Fearless Restaurants, a regional restaurant chain with 14 locations that include popular spots like The White Dog Cafe and Moshulu uses an AI platform called Slang.ai to take reservations and answer questions 24/7. Why? So that their staff can focus on serving their customers without phone calls distracting them.

“This is not to reduce head count,” Grims said. “We cannot get rid of greeters. Our goal is to provide easy answers to guests quickly. We had over 250 coinciding calls at one restaurant in a week... that’s about a thousand covers we would just lose without this platform.”

## Improving Your Communications

AI assistants have become very good at transcribing and summarizing online meetings as well as polishing emails, writing memos and tightening up other written communications before they go out to the public.

“Writing e-mails is a lifeline but is often time consuming when running and scaling a business,” said Kevin McLaughlin, a partner at Philadelphia-based accounting and advisory firm Centri. “We use ChatGPT to assist by quickly drafting e-mails that capture the right tone and message, which the owner can then personalize in minutes.”

## **Creating and Reviewing Company Policies and Other Materials**

I always tell my clients to never allow a single contract, agreement, quote or bid to leave their office without uploading it to their AI assistant for comments. These platforms have become well versed in spotting problems, identifying issues and suggesting ways to not only improve your corporate documentation but to identify risks and protect you against potential liabilities.

Neha Arnold, CEO of Sedna Consulting Group, a technology consulting firm based in Edison, NJ, agrees. She frequently has her team use an AI assistant to help with corporate documentation by double-checking outputs and acting as both a creative and analytical assistant. But she's also careful to not rely on the platform entirely.

"It's important to understand AI's limits," she says. "Research shows that AI models can falter with complex reasoning. It's best used to support — not replace — human insight."

## **Designing Marketing Materials and Blogs**

Howard McCabe, the founder and creative director of Dream Syndicate, a brand specialist based in Philadelphia, leans heavily on AI to write rough scripts, create graphic styles, come up with content ideas, design and even generate voiceovers and custom music scores.

"When shooting a commercial, if we miss a line of copy or the talent mispronounces something, we can train the AI on the particular actor's nuances and then the AI can generate a new scene with the talent saying the missing line or correcting the mispronunciation," he said. "In addition, now we are able to have the talent speak in a different language and make it fit within the same time frame, so, if we produce a commercial in English, we can then very quickly generate that same commercial in a different language with regional variations."

I realize that not everyone's in the content creation business like McCabe, but, with image and video creation platforms like Sora, Google's Veo and others, your marketing team can publish professional content that can help set your company apart from its competitors.

## **Performing Market Research and Competitive Analysis**

Your AI assistant is a trained advisor and friend who has the entire Internet at its immediate disposal and can discuss with you — just like a human — any business problem, issue or challenge you want to pose to it. I have clients who are leaning heavily into their AI assistants for help researching markets, products and competitors and brainstorming ways to stay ahead.

Arnold says he uses his AI assistant to provide critical feedback/pushback by prompting questions like "Why do you recommend this approach?" "What are the alternatives?" and "Question my approach and identify holes."

Other business owners, like Russ Napolitano, a partner at the Philadelphia marketing agency Xhilarate, uses his AI assistant for client discovery and meeting preparation.

“Before meeting with a prospect or client, we use ChatGPT to conduct quick discovery—researching their industry, identifying potential challenges, and surfacing relevant trends,” he said. “It’s like having a research assistant who can brief us in minutes.”

AI cannot be relied upon 100 percent. But then again, what advisor can? But, even in its current infancy, there are plenty of ways for today’s AI chatbots to help you in your professional life.

“We’ve been utilizing AI across our operations for quite some time, and it has truly transformed the way we work,” said Arnold. “Personally, AI has allowed me to save an average of 60-75 minutes every single day, time that I can reinvest directly into accelerating business growth, deepening client relationships and exploring new opportunities.”

## **ABOUT THE AUTHOR**

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## **Small and Mid-Sized Businesses Adopting AI? Don't Believe It.**

A recent report from Goldman Sachs caught my eye. The survey found that about 68 percent of small and mid-sized business owners said they are “already using AI,” with another 9 percent planning to begin using it within the next year.

“It’s a significant jump from the 51 percent of small and mid-sized business owners who were using the technology to increase productivity and expand their capabilities two years ago,” the report said. “Most small and mid-sized businesses using AI, about 80 percent, said it is enhancing rather than replacing their workforce. About 74 percent of small and mid-sized business owners using AI planned to grow their business in 2025. That compared to 65 percent of those not using AI or unsure about adoption. Nearly 40 percent of small and mid-sized businesses using the technology said it would allow them to create new jobs in 2025.”

This isn’t the only survey I’ve seen purporting that AI growth among small and mid-sized businesses is proliferating. Other reports — mostly from tech companies with their own agendas — have been sent to me confirming this. In addition, the U.S. Chamber of Commerce found that, in 2025, businesses “doubled their adoption of AI, increasing from 23 percent in 2023 to 58 percent.”

My advice: Be dubious about these studies.

My firm has more than 600 clients in the mid-Atlantic area. I frequently visit other small and mid-sized businesses around the country doing consulting work. I also speak to thousands of business owners at more than 50 industry conferences each year. I talk about AI. I ask them about their usage of AI. And here’s the reality: They’re not really using AI. At least, not yet.

Of course, tech companies want to give the illusion that AI is proliferating among small and mid-sized businesses so that business owners will experience FOMO and be made to feel like they should be jumping on the bandwagon too. And, of course, the media want their audience to believe the same because it’s a good story and leads into the “AI is going to take away your job” narrative that gets lots of clicks. And the AI industrial complex — software, hardware, infrastructure, data centers, consultants, venture capitalists, startups and all the others making money in this new wave — want to keep that narrative going.

But let's get real: AI usage among small and mid-sized businesses is in its infancy. Barely.

What these businesses are actually doing is dabbling. They're playing with chatbots like ChatGPT, Gemini, Copilot, Claude and Grok. They're using these platforms for research. They're getting help crafting e-mails. They're leaning on these platforms to review contracts, write policies and enhance research. Some businesses are using generative AI to create images, update websites and create marketing documents. This is good. This is productive. This is helpful. But it's not "adopting" AI.

The really core adoption — where AI agents are being used to reconcile accounts, place orders, send e-mails, converse with customers, apply cash, analyze transactions and produce quotes, estimates and proposals automatically based on historical transactions — is nowhere near happening at small and mid-sized businesses. There are no robots packing boxes, lifting pallets or cleaning offices. Workforces aren't being cut. Devices aren't running on their own. None of this is happening. Yet. Why not? Three reasons: cost, reliability and trust.

Big companies are spending billions on their AI models and — after a couple of years of doing this — seeing a benefit to the bottom line. Although some claim to be using AI to eliminate jobs, a recent report from MIT researchers revealed that 95 percent of generative AI pilots at companies are failing. Small and mid-sized business owners aren't going to risk their limited resources on technology that can't prove its ROI. Big companies have the funds to waste on these projects. Some will succeed and expand, and these innovations will ultimately trickle down to small and mid-sized companies when their value is proven. But for now, the cost to implement what is still an unproven and immature AI solution at a small and mid-sized business is too prohibitive.

And is AI reliable yet? Certainly not. Hallucinations are still very common and, according to some sources, are even getting worse. Even simple research requests on the most popular chatbots oftentimes return incorrect answers. And some reports say that problem is worsening too. The average age of the U.S. small and mid-sized business owner is over 55 years old. We've been hurt before by bad and buggy software. We're wary of this stuff and are hard pressed to rely on it until it's clear that it's reliable.

Finally, AI applications and agents raise all sorts of security concerns. Hackers are using AI to deepfake executives and for all sorts of nefarious purposes. To use these AI platforms, we're asked to send our most critical and confidential data to the Cloud, with promises from tech companies with a poor track record of

trustworthiness that those data are protected and secured and won't be used for any other purposes. Many of my clients are very hesitant to do this.

Don't believe what you read. "Adopting AI" means monkeying around with a chatbot. Many small and mid-sized business owners are doing this and good for them. But are they really using AI to generate more profits and increase productivity? Not yet.

## **Your Employees Are Terrified of AI. Here's How to Prepare Them.**

If you've been anywhere on the planet over the past few years, you have likely seen the countless predictions of how AI is going to take away jobs. Hundreds of millions of jobs globally according to another report! How can people not be terrified of this? Well, they are. Your employees are terrified too. And it's hard not to empathize.

AI is already replacing workers at some companies, and some fear greater job losses in the not-too-distant future. More companies are now publicly admitting how they're using this technology to reduce their headcounts. Other cost-cutting measures — driven by AI and other technology advances — are leading big brands to lay off tens of thousands of workers. Many articles pinpoint the jobs most likely to go away thanks to AI. Others discuss how job seekers face challenges finding work, not only because of a slowing economy but because of cutbacks fueled by technology.

So it's understandable why your employees would be concerned. But, as business owners, we know that they really shouldn't be. We need them. Especially the good ones. So here's how you can prepare your workforce for the inevitable, unavoidable, inescapable impact that AI will have on your business and their livelihoods.

### **Drill Down on Your Software Vendors**

Big brands are spending hundreds of millions of dollars to build their own internal systems for writing code, interacting with customers and performing tasks behind the scenes. But what about small and mid-sized organizations? Most will not be writing their own AI applications. They'll be leaning on the features introduced by their software vendors. As I write this, the technology firms that make accounting, customer relationship management, human resources, order entry, inventory management and other business applications are doing just that: investing millions in new AI capabilities for their platforms.

Owners and managers need to spend time with their most significant software vendors and understand what AI features and functionality they're rolling out and then choose which of these functions will provide the most ROI for their companies. The reality is that AI isn't going to impact all aspects of a business. But it will impact certain parts where it makes the most sense. Those parts need to be determined. Why? Because people will be affected.

### **Train Your People. For Real This Time.**

Let me guess: Your business has Microsoft Office or Google Workspace and you're using...what...20 percent of their features? Don't make this mistake again and don't do this with your AI investments. Once you choose which AI features you'll be focusing on (see above), then spend the money on training your people for real this time and then lean heavily into those features. Not only is it critical for your business to leverage whatever automation tools are available, but you'll find it making a huge positive impact on your employees' attitudes towards these technologies. Help your employees to become experts in AI for their jobs. They'll gain confidence in themselves and a new appreciation for how AI will make their jobs easier and their lives better. Most fear is caused by uncertainty and ignorance. Training will remove those factors.

### **Understand Your Demographics.**

A recent report found that a staggering 85 percent of ChatGPT's mobile users are male. Other studies have shown that older people use it less than younger generations. And more than six in 10 GenZers use AI for education, while 30 percent of younger generations use it weekly. Meanwhile, most older generations rely on AI mainly for work and professional tasks like helping with e-mails. It's important to tailor your training and your approach to AI based on who your people are.

### **Don't Advertise Your Intentions.**

Shopify's CEO said that his company won't hire workers unless it can be proven that AI won't do their job instead. Consumer financing firm Klarna revealed that their AI model would replace 700 customer service agents. Many CEOs have already publicly stated that AI will be helping them to cut headcount.

To me, none of these announcements say "Hey, we love our people." Imagine working at one of these firms. What would you think? You'd be afraid for your job. And that will impact your productivity and commitment. My advice: Don't be like these CEOs. Whatever AI plans you have for your business, keep them close to the chest. It's likely that, as a small and mid-sized business owner, these plans will not involve cutting headcount, only increasing productivity. But your employees won't know that and could interpret your statements differently. And given AI's rapid changes, those plans can change. Even Klarna's CEO revised his claims after realizing that, depending on the issue, customers want to speak with humans. Duh!

## **Change Your KPIs.**

Speaking of change, AI should cause you to change the Key Performance Indicators (KPIs) that you're likely using to measure your people. Your AI investments are intended to increase productivity, and that's what your metrics should be about. The whole reason why you're investing in this stuff is not to get rid of people but to help them do things quicker. Because of this, you should change your focus to KPIs that emphasize productivity like output per employee, revenue per employee, task completion rates, billable utilization rates and error rates.

## **Finally, Be Realistic and Transparent.**

The narrative is that employers will leap at the opportunity to replace their workers with bots, fire their employees, save money and increase their profits. And there's no denying that some jobs will be replaced. New technologies have a way of doing that.

But business owners like me — and just about all my clients — know better. There's myth, and there's reality. The myth is that everything will be done by AI, and few workers will be needed. The reality is that AI is in its infancy, and it's nowhere near the stage where we can rely on it to take away the core responsibilities that are being done by our very valuable employees.

But make no mistake: These tools will get better, more accurate and more reliable over time. AI agents will start assuming tasks behind the scenes. And employers will be using them to do the work that employees are now doing. Which means you should be realistic and transparent with your people. If they don't lean into these tools or their KPIs lag behind others, then you may have to make changes. You have a business to run. If employees don't adapt to other tasks and adjust to this new reality, then, yes, they may be out of a job. This is just a fact.

But, if you provide your people with the right training and context for your AI investments, your best workers will see the opportunity and step up to the plate. Those will be the ones who will not only help your business succeed but will themselves grow into better professionals.

## **No, It's Not Time to Replace Your Workers With AI. Not Yet.**

According to an April 2025 survey of more than 1,000 business leaders by organizational design and planning software platform Orgvue, more than half of those that laid off employees because they thought AI would replace their jobs are now regretting the decision. Does this come as any surprise? Not to me. And not to most of the business owners I work with.

I question the sanity of the people running those above-mentioned companies. They just laid off workers and replaced them with AI? They must have been reading quotes like this from Tim Cook, the CEO of Apple:

*"AI is already making businesses more efficient, more responsive, and more personalized. It's a growth driver."*

Except Tim Cook didn't actually say that. I asked ChatGPT to give me quotes from tech leaders "telling businesses about the importance of AI for their companies," and it gave me that response. But, when I asked where it got that specific quote, the chatbot retreated and said:

*I apologize for any confusion earlier. The quote attributed to Tim Cook does not appear to have a direct source from a verified interview, speech, or official Apple communication.*

Oops. This actually happened. And that was just the simplest of simple tasks I asked of ChatGPT. This tells the story of AI in 2025.

But apparently there are executives who don't know this? They actually fired employees because they thought that AI would do their jobs? Those executives are the ones who should be fired. The reality is that AI wasn't at the place where it was replacing people in 2025. And business managers — particularly in small and mid-sized companies — who thought it was better are probably thinking again.

At best, generative AI platforms like ChatGPT, Claude, Gemini, Copilot and Grok provide answers to questions, help us to compose better e-mails and create recipes for chicken pot pies. What they actually do is perform an enhanced version of search so that, instead of sifting through dozens of websites, lists and articles to figure out how to choose a great hotel in Costa Rica, fix a broken microwave oven or translate a phrase from Mandarin to English, we simply ask our chatbot a question and it provides the best answer it finds. These platforms are getting better and more accurate and are indeed useful tools for many of us.

But these chatbots are nowhere near replacing our employees.

“AI chatbots have had no significant impact on earnings or recorded hours in any occupation,” concluded two researchers who looked at the labor market impact of AI chatbots on 11 occupations, covering 25,000 workers and 7,000 workplaces in Denmark in 2023 and 2024. “Employers are also shifting gears and actively encouraging it. But, when we look at the economic outcomes, it really has not moved the needle.”

In most of today's workplaces, particularly amongst the 33 million small business owners, some of whom are my clients, AI is not being used in any core operation. Believe me, business owners would love to replace their employees and have their accounting, customer relationship management, inventory, order and payroll and systems do the work in lieu of them. But that's just not reality and won't be a reality for the foreseeable future. Why? For three reasons.

For starters, the technology doesn't exist, and what exists doesn't work very well. Sure, well-known players like Salesforce, Microsoft and Intuit are rolling out AI features designed to do everything from processing accounts payable to sending out e-mail marketing campaigns. But these are limited, immature and unreliable. Business owners aren't going to trust any of these tools to do data entry, make decisions or execute transactions without a human being involved. No thank you.

Second, to build these things means giving up data and intellectual property to the likes of Microsoft, Google, OpenAI and others and, to put it mildly, most businesses have little confidence that these companies will secure this data, let alone not sell it or use it for their own purposes no matter how many promises, guarantees, disclaimers and assurances they make. We're not even sure our data are safe, secure and protected when they're hosted in the Cloud, let alone allowing these companies even more access and watching how we're using our data. No one I know is comfortable about this.

Finally and most importantly, it's too expensive to build an AI system. Sure, Buy-Now-Pay-Later platform Klarna is replacing hundreds of workers with its internally developed customer service system leveraging OpenAI's large language model. And Meta is using AI to replace many of its programmers. And J.P. Morgan and other Wall Street firms are building in-house AI platforms to do the work of its Harvard MBA graduates. But, right now, AI is just a big corporate play. These systems cost tens if not hundreds of millions of dollars. Most smaller companies have data in multiple places and can't afford to hire an AI-experienced developer to bring together all of these data — even with the tools available — to create their own internal model and then — yikes — build agents on top of this messy, out-of-date and likely inaccurate information to actually perform tasks. Not yet.

But that doesn't mean never.

There's no doubt that big things are coming. Of course, the systems rolling out today will — like the generative AI platforms we're using — become more accurate and reliable. Businesses will give in to the loss of their privacy for the benefits it will provide. Their AI

platforms will one day be able to validate when data are potentially incomplete and inaccurate with other sources before launching into tasks.

Yes, the robots driven by firms like Boston Dynamics will one day be performing the work that construction and manufacturing workers are doing. Drones will one day deliver packages, monitor workplaces and count inventory. Driverless trucks will deliver our packages, autonomous forklifts will move pallets and bots that are indistinguishable from humans will talk to our customers and prospects like our people do now.

I, like many business owners, have no doubt that all of this is coming and that one day AI technology will indeed reduce our labor costs. But that day is still years away. My smartest clients know this and are waiting. Others — like the ones in the survey above — were simply duped into believing that this stuff actually exists

## **Security, Trust and “Agent Sprawl”: The Head of AI at Cox Communications Offers AI Advice to Smaller Companies**

Eric Pace is the Head of AI at Cox Communications, a job that didn't exist until just a few years ago. He brings years of technology experience, and, among his many responsibilities, Pace is charged with getting thousands of workers at the largest private broadband company in America to adapt and adopt AI so that they are as productive as possible and provide a better experience for customers.

You may not be running a multi-billion-dollar business, but I'm sure you and your management team have the same concerns. How can your company leverage AI so that your employees are productive and you're staying ahead of the competition? Pace has some advice.

### **Centralize**

For starters, the use of AI should be a centralized strategy across your organization. It shouldn't be scattered across departments, functions or locations. For Pace, the use of AI across the board should be tied to specific objectives and applied with the benefit of the entire enterprise as its goal, not just little pieces of it.

“At Cox, we chose to centralize the AI function when we got started so that it can grow the entire company's objectives in mind,” he said.

Pace says that Cox leadership realized that they should have at least one person responsible for distributed elements of its strategy, which is how he's developed into his role. Other businesses, in his opinion, should be doing the same.

### **Stay Current**

Pace's job is to know all there is to know about AI so that it can be used effectively at his company. Of course, this is an impossible task. But regardless, he devotes a significant amount of time to keeping up to speed on the latest tools and trends that will have an impact, and he strongly advises business owners and leaders to do the same.

“My AI education comes less from manuals and more from conferences, conversations and hands-on experimentation,” he said. “I follow certain experts and sites, and I'm constantly reading.”

Pace also admits that one of the best places to learn about AI is...AI.

“People need to stop thinking that AI Assistants like ChatGPT or Copilot are search engines and instead consider them as collaborators,” he said.

## **Trust But Verify**

Pace has also learned not to trust everything that comes out of his AI Assistant. He uses these platforms to research and summarize issues, but he also aggressively interrogates when something seems missed. He challenges his chatbots frequently by revising their summarizations and then asking for the things that they left out.

“You’d be surprised how much is missed,” he said. “No assistant, even an AI Assistant, is perfect. Coaching your AI Assistant is important.”

The same goes for agents. Cox is using AI agents in limited cases, mostly behind the scenes to check on the performance of its communications systems. Agents will grow in popularity and usage over the next few years. But they shouldn’t be blindly trusted.

“I don’t trust AI,” says Pace. “In the end, humans must own the final product, especially for anything that’s public facing. It’s still you that’s producing the output or representing whatever it is.”

## **Build vs. Buy**

As I’ve been writing about AI over the past few years, it’s mostly been a big company play. Many companies are building their own large language models and training data primarily for customer service and software development. The cost of these projects is enormous, and — according to some recent studies — the results have been less than optimal. But, if done the right way, building your own AI application can demonstrate ROI.

Pace says that he prefers to build many AI capabilities in house, rather than buying separately created applications, in order to avoid ending up with what he calls “a thousand flowers that bloom” or dozens of overlapping point solutions that are hard to govern.

“A lot of the companies we see are coming with very micro-focused point solutions... that ultimately lend themselves to... a thousand of those things in our landscape.”

And, although this strategy has been working for Cox, Pace doesn’t necessarily believe it’s the right approach for smaller organizations.

“SMBs shouldn’t try to replicate Cox’s engineering footprint,” he says. “They should start with the AI capabilities inside their existing systems (CRM, ERP, etc.) and selectively add focused tools where they’re weak, like content creation. We ultimately all have the same problems. I think the difference is scale.”

## **Target Specific Problems**

As a technology consultant, I’ve seen plenty of business owners and managers throw money at software and hardware solutions without a clear purpose. That’s good for Microsoft and Dell. But it doesn’t make much sense for a business with limited resources. Pace agrees and

advises that business leaders who want to leverage AI should first start with the real problem and not just “hey, we need AI.”

“Someone must bring a real, well-qualified problem that AI is suited to solve,” he said. “At Cox, we are just not going to buy AI to get AI in here. Someone has to bring me a problem that we have, and that problem has to be one that’s good to solve with AI.”

Pace also thinks it’s important to keep things simple and not have too many AI projects going on at the same time.

“It’s important to grow from a single use case in concentric circles, not scattered pilots,” he says. “Instead of deploying dozens of disconnected experiments, it’s usually better to start with one good use case and expand outward from there, so workflows remain connectable.”

### **The Security Challenge**

I always tell associates that there are no guarantees in life. Like everything else, AI is a risk/reward decision. If the reward of using these platforms is greater than the risk — particularly the security risks — then that’s up to you.

That said, there are some steps you can take to ensure that your data are protected. Pace says it’s important to grill your service providers, know what happens to your data, where it lives and what models are used.

“If a provider won’t explain this or answer our questions, Cox is out,” he said. “If a vendor is a black box, we walk away.”

### **Data Are Key**

AI automation can have amazing benefits, but, if you’re trying to do this with less-than-stellar data, you’re going to have a problem. Having said that, Pace says you don’t have to overdo it.

“You don’t need perfect data for AI to work,” he says. “The best approach is to define what specific AI products or agents you’ll be using and then clean up only the data that they’ll require.”

Pace believes “there’s not a company on earth” that has a clean data ecosystem. He says to fix your data but “you don’t need complete data harmony in order to monetize your AI initiatives.”

### **Agent Sprawl**

With all the potential productivity AI promises, there will be drawbacks. One that Pace pointed out is something he calls “agent sprawl.”

This is when it becomes so easy to create AI agents that companies have many — hundreds, even thousands — that overlap what each other is doing. Pace is trying to do “drive standards” as Cox builds new AI systems.

“Companies should be thinking about this now and creating standards,” he said. “If companies in general don’t get control of where they put all this stuff, you’re going to have sprawl, and it’s going to be a hard mess to clean up.”

## **Cox Workplace Study: Younger Employees Could Be Your Best AI Asset — But They Probably Won't Tell You.**

Millennials and Gen Z workers now make up about half of the country's workforce. And, when it comes to AI, they're pretty concerned. That's the conclusion I take from a recent workplace survey conducted by Cox Communications.

The good news is, according to the survey, more than 60 percent of Gen Z and Millennials feel positive about AI's growing role at work. But, although many feel that AI will create new opportunities, about half of GenZers fear that it could replace their jobs.

Of course, this fear doesn't stop these generations from using these tools. About 50 percent of Gen Z and Millennial employees do, and yet they're nervous to admit how much of their work is accomplished with AI, with 65 percent saying they're more familiar with their tools than the ones that their company provides.

All of this creates a dilemma for business owners and senior managers.

"Younger workers are using AI heavily, but they're just not talking about it at work," says Sarah Kim, who's vice president of commercial marketing at Cox Communications. "Businesses should be consulting with their younger generations and tapping into these digital natives for ideas before they develop broad organization AI policy or strategy."

So how do you get your team of younger workers share more openly about AI? Kim has a few suggestions.

### **It's Not About Output; It's About Impact**

For starters, leaders need to shift what they value. Kim, who has been managing teams of workers for more than 20 years, says that, thanks to AI, there's a change happening in how we value our employees: it's no longer about output; it's about impact. She sees how AI is making people more productive than ever...and democratizing knowledge.

"AI makes productivity easier and levels the playing field," she said. "Leaders should stop rewarding employees solely for output and begin valuing strategic contribution and business impact."

Security risks aside (and yes, there are serious security risks that need to be addressed through policies and oversight), Kim believes that employees shouldn't be afraid to use their own AI tools in the right business context, especially if it helps them do their jobs better.

"Of course, company management must set simple guardrails that protect customer data and competitive information, but that shouldn't preclude the use of technologies that make a person's impact even greater," she said.

The hope is that, if one employee is using a great AI application and the group becomes aware, it could help everyone be more productive. And just because an AI app is being used to do the work, that doesn't mean the employee is "cheating." In fact, this type of attitude should be encouraged. Disrupt or be disrupted.

### **AI Isn't a Nice to Have**

In addition to software development and customer service, marketing is one area that is being most impacted by a new generation of AI tools, and, as a marketing executive working for a large corporation, Kim feels strongly that a best-in-class marketer must adopt AI "full stop."

"AI literacy is a job requirement," she said. "Employees may worry about losing their jobs to the technology, but they're more likely to lose them to colleagues who use it well, end of story."

### **It's Not About Losing Jobs. It's About Change.**

To that end, leaders need to be aware that what many employees really fear isn't just the loss of their job; it's the changing nature of their work because of AI and whether or not they can keep up with these changes. AI is changing tasks, roles and functions. Its disruption is just beginning. People don't like change. But the people who adapt quickest will benefit the most.

For Kim, that means that the future of marketing — and most other company functions — will reward human-centric skills, because AI will democratize knowledge and executives will prioritize skills like organizational intelligence and human-to-human communication.

"Anyone could become an expert on anything with AI," she said. "It's how this knowledge is communicated and organizations are managed to use this information that will be a critical skill going forward."

### **Younger Employees Are Key**

As the Cox Workplace Study shows, Millennials and GenZers are excited about the opportunities that will be created by AI but also nervous about their futures. Considering the importance of this demographic, it's important to address these concerns head on.

"Younger employees clearly want a seat at the table, and leaders must show them their voices matter," said Kim.

She's right. Younger workers correctly believe their digital upbringing qualifies them to influence technology decisions, and this shouldn't be ignored. Business owners, managers and company leaders don't necessarily need to hand over the final decision on critical technology strategy to these younger workers, but we must close the loop and explain to them how their feedback shaped the outcome.

“It’s on us to communicate the why and show how we’ve taken that feedback into account,” said Kim.

### **Fun Stuff Ahead**

There’s no question that we’re still in the very early days of AI. Over the next few years, countless new products — along with predictions — will rain down on business leaders and will require their consideration. For Kim, this is all good and should be viewed positively. And it requires people to jump in now.

“AI adoption requires experimentation, fun and competition — not just more training,” she says. “My team will improve with AI and other technology tools because we’ll be using it and not just studying it.”

She encourages adoption through contests, gamification and social proof.

“We actually have a weekly contest... of who’s using Copilot and what they’re doing with it. It’s not about getting more training — it’s actually getting in there and using it.”

## How AI Is Ending Google's Search Monopoly

A couple of years ago, I attended an excellent conference in Seattle by a well-known firm that provides online search and marketing tools. They had a lineup of top-notch speakers who are experts in digital marketing from the largest corporations, brands and agencies in the country. The theme was Search Engine Optimization (SEO) and how to drive the most clicks to a website, e-commerce store or content page.

The conference was basically all about Google. Why? Because, in 2025, Google dominated search in the world. To get found, you needed to please the Google Gods. So what advice did the greatest and smartest people in the online marketing world have for additional search options? They all pretty much said the same thing: "beats me."

No one knows. That's because Google's search algorithm is a secret more closely guarded than the recipe for Coke or U.S. nuclear launch codes. Everyone there was trying to figure out what Google was going to do next, where Google may change its algorithm and how these changes would affect traffic to their site.

AI is now changing that. And it's doing so in three ways.

### More Options

For starters, it's giving our potential customers more ways to find us. Yes, studies show that Google still dominates search. But already you can see ChatGPT and others like it begin to make headway.

So far, even if ChatGPT's 1 billion messages per day were search related, its total share of the search market is less than 1 percent. Google saw approximately 373 times as many searches as ChatGPT in 2024, and Google searches actually grew in 2024 compared to 2023.

But things are changing. Gartner says that soon traditional search volume will drop by about 25 percent, with AI Assistants and virtual agents capturing a growing share of user attention and behavior. Others said that AI-powered searches would grow annually by up to 35 percent starting in 2025, reaching an estimated 14 percent of search market share by 2028, with Google declining modestly to about an 86 percent share. I'm betting that decline will be more pronounced with AI.

I've tried Google AdWords, and, for a small business like mine, it's not ideal. My company sells customer relationship management software, and the big players in this industry already have search results locked up. They spend more money than

me. They buy up all the good keywords. People searching for products I sell won't find me unless they click through to page 8 of their search results, and no one does that.

AI is helping solve this problem. As other chatbots take away search market share from Google, I'll be offered more ways for customers to find me. I predict that many small and mid-sized businesses will gravitate to these chatbots. ChatGPT and Perplexity have already announced their own browsers to compete with Chrome and collect data. More competition means more choices, less costs and better results for businesses like mine.

### **Less Clicks, Better Clicks**

Most have noticed that Google has introduced an "AI View" into their results where search answers are summarized. Some believe that this will result in fewer clicks on links to websites, and they're right. Smart marketing people, like Jason Rose, senior vice president of digital sales and marketing at HR firm Paychex, believes that this will have greater benefits for businesses like mine.

"People are reading the AI summary and kind of getting what they need and moving off," he said. "But it's not all doom and gloom because these visitors actually convert at a much higher rate."

To date, SEO has been all about getting visitors to your website. Websites are ranked based on their traffic. But how genuine is this traffic? In 2023, it was 49.60 percent of Internet activity, almost catching up to human traffic, which was at 50.40 percent. Meanwhile we're paying Google to send this nonsense to us. AI is fixing this too. It is changing the way people use the Web for research, be it academia or shopping.

Rose is right. By reading an AI overview, a visitor who clicks through to a website has given some thought to their action and is therefore a more-qualified prospect, a better visitor. Google and others will likely charge more for this. I'll pay. It's worth it.

### **Content Creation Opportunities**

To be included in an AI overview, your content has to be relevant and useful. Unfortunately, much of today's content isn't. At the Seattle conference I attended, some of the sessions talked about SEO tricks and games you can play with content (keyword stuffing, hidden links, showing different content to search engines than what is shown to users) to get noticed by Google. AI will help to stop this. As it gets smarter, it will be better able to root out this nonsense so that it's displaying the best answers possible.

This means that the best content will be included in AI overviews, and the websites with the best answers will have a better chance of being found. No games. No tricks. Just good, valuable content. And not content generated by AI because AI will be able to figure that out too.

This will be an opportunity for quality content providers — writers, bloggers, creators, etc. — to step up their game and prove their value. The best ones will rise to the top, unburdened by the crawlers and spiders that held them down. People worry that AI will replace content providers. It's actually the opposite. It's creating more opportunities for them.

"AI is reading the same content that the human would have and building summaries based off of that," Rose said. "So again, you need great content. Content is still king."

All of this is happening now. But it's still early days. Google is still Google. ChatGPT and other chatbots are infants in the search world and still hallucinate too much. But you can easily see the future. And the future is a world where, thanks to AI, more and better search options and results will exist. For a business owner like me, that world can't come soon enough.

### **AI for Manufacturing and Distributors: Where Is It?**

There are many good articles about how AI is going to change manufacturing. Most of these are conjecture, predictions and future-telling. They rarely list actual examples. They're valuable in that they can give executives some pause for thought. But I'm more interested in how AI is really being used by actual manufacturing and distribution companies right now. So where is it? I'm looking. Here's what I'm seeing so far.

### **AI for Manufacturing: Microsoft and Google**

Both Microsoft and Google published in 2024 more than 1,300 use cases of how their Copilot and Gemini AI offerings, respectively, were being used by businesses. It's interesting but unfortunately mostly repetitive.

About 99 percent of what I'm seeing is mostly the same thing: AI is being used to help people write better e-mails, analyze data, chat with customers online or perform research. It's mostly back-office stuff, which is important, but it's not hands on the shop floor. Of all these use cases, I found only about a dozen that specifically were about manufacturing and distribution.

For example, Microsoft says that its customer Rolls-Royce is using its AI tools to "optimize engine design, turbine production, and health monitoring" which they say

has “boosted machine usage by 30 percent, reduced scrap, and proactively prevented approximately 400 unplanned outages per year.” The software giant claims that another customer, Grupo Bimbo, is using AI to “modernize manufacturing, reduce downtime, and drive cost savings.” A company called ZF Group is using over 25,000 of Microsoft’s Power Platform apps to “engage 37,000 users to optimize manufacturing efficiency.”

Google says that UPS has used its AI tools and platforms to “build a digital twin of its entire distribution network, allowing workers and customers to view package locations in real time, representing a significant leap in transparency and operational control.” A global telematics leader called Geotab that processes billions of data points daily from 4.6 million vehicles used Google’s AI tools to “enable real-time fleet optimization, driver safety improvements, route efficiency, and decarbonization efforts.” Another Google customer called Kinaxis implemented data-driven supply chain solutions for logistics, including scenario modeling, planning, operations management and automation to enhance responsiveness. Prewave, a supply chain risk intelligence platform, is leveraging Google Cloud AI “to provide end-to-end monitoring, detect ESG risks, and deliver deeper visibility into supplier operations.”

I don’t doubt that these companies are getting benefits from AI on the shop floor and improving their logistics and supply chains after building internal solutions with Microsoft and Google tools. It’s just that I read a lot of words like “optimize” and “enhance” and “enable” without really understanding what that means in actual dollars and profitability. I’m sure the managers at these companies know. They better know. They spent untold millions building these systems.

### **AI for Manufacturing: On the Trade Show Floor**

Are equipment manufacturers leveraging AI in their products? I looked at the new products being offered and exhibited at trade shows like Fabtech, Modex and ProMat. These machines do everything from changing tools and laser welding to beveling, boring, centering, grooving, milling, tampering, slitting and processing coils. The companies making these products are without question making them better, more reliable, safer and faster each year.

But they’re mostly doing this through better engineering. There’s a smattering of AI usage I’m seeing — mostly being able to understand simple voice commands or to program jobs. And I’m assuming that these companies are at least starting to use AI to help them accomplish their better engineering, but my hunch is such use is in its nascent stages, at least for now.

The real AI action on the manufacturing floor recently has been robotics. For example, Amazon's Vulcan robots have advanced sensors that detect the size and weight and dimensions of products and can sort and move and pack them as a human does. ABB Robotics has a highly specialized product picking tool that does something similar. And furniture maker Four Hands uses robots to move boxes from the warehouse floor onto and off trucks, saving significant time that humans spend loading and unloading. Companies like Boston Dynamics, ANYbotics, Agility Robotics, Figure AI, Sanctuary AI and Unitree Robotics are creating robots that do inspections, move materials, pick and place parts, sort products, carry equipment and perform maintenance checks.

### **AI for Manufacturing: It's All About Robotics**

So what does this mean for manufacturers and distributors?

If you're running or managing an inventory-focused business, you can build AI solutions using tools and examples mentioned above from Microsoft and Google to help increase efficiencies in your back office. But, for the shop floor, your real investment dollars are going to be targeted towards robotic solutions leveraging AI. Save up your money. Build up your reserves. Start arranging your financing. Get your people ready. This is where to invest.

# **Robots, Glasses and Packages: Six Really Cool Ways Amazon Is Leveraging AI and Why a Business Owner Should Care**

Amazon is rolling out internal technology that's leveraging AI so that the company's employees and merchants not only sell more products but get more work done faster and more accurately. If you're running a small and mid-sized business, you should care. Why? Because what Amazon is doing with AI to run its warehouses, help its merchants, improve its logistics and enhance its back office is what you'll also be doing sooner rather than later. Are you paying attention? Here are six examples.

## **1. Using Glasses to Help Delivery Drivers**

According to Amazon's website, the company is creating its own smart glasses specifically for delivery drivers so that they can get turn-by-turn directions as they deliver packages. The directions would even expand into the stop itself, telling drivers what gates or elevators to use and maybe even avoiding overly excited dogs. The hope is that these glasses will reduce the time needed for delivering packages, even by a few seconds. Because the seconds add up. The company is still trying to overcome some hardware limitations (i.e. limited battery capability) before publicly launching.

*Why should a business owner care?* Google may have failed with its Google Glass years ago, but now these devices are becoming more user friendly and leveraging AI to provide real-world value. As big companies like Amazon embrace these technologies, more will proliferate that can benefit your company too.

## **2. Automatically Identifying the Right Packages for Picking**

It's called Vision-Assisted Package Retrieval (VAPR) and was expected to be fully active in more than 1,000 delivery vans last year. The goal is to make delivery faster and more accurate so that delivery drivers don't have to sort through what's in their vans. Instead, there will be a little green light displayed on the packages to be chosen based on the van's location.

Amazon says that "Once the van arrives at a delivery location, VAPR will automatically project a green 'O' on all packages that will be delivered at that stop and a red 'X' on all other packages. Through an audio and visual cue, VAPR will prompt the driver, confirming it has found the right packages, before the driver

needs to enter the cargo area. The technology also removes the need for drivers to use a mobile device throughout the process.”

*Why should a business owner care?* While Amazon has now exceeded the shipping volumes of both FedEx and UPS, its competitors are still huge, and we can expect them to be using similar AI technologies to improve their logistics. And soon businesses that do their own deliveries will ultimately be available to sign on to similar platforms. Expect this to be core tech for anyone delivering a package in the next few years.

### **3. Helping Merchants Sell Their Products**

Recently, Amazon introduced Project Amelia, a “generative AI-based selling expert” targeted towards their third-party merchants to help them design their sites, choose which products to offer and give the “answers, advice, and tools they need to succeed.”

The chatbot’s aim, over the long term, is to get familiar with the reseller’s business and products so that it can offer very personalized responses to questions like “How do I prepare for the holiday season?” or “Give me an analysis of my T-shirt sales.” For now, Amelia’s best uses are a natural language reporting interface for retrieving information, but going forward the company says it will be able to troubleshoot and fix problems with a merchant’s site and offer other support capabilities.

*Why should a business owner care?* If you’re an Amazon merchant, you should take advantage of these tools, both in their current and future states, to help you sell more products on the platform. But, of course, you don’t have to be an Amazon merchant to benefit. You can bet that many of their e-commerce competitors will be watching, duplicating and implementing similar features as they roll out.

### **4. Elevating Voice Commands**

Wired reported on a “complete rebuild” under way of Amazon’s Alexa and Echo devices, using AI in two ways. The first is a heavy reliance on AI for code-building so that new features can be written faster and changes introduced in a timelier fashion. Secondly, and as changes rolled out, users of these devices (and I’m one of them) found themselves enjoying a more human-like, personalized experience to get news and information and to do their shopping.

*Why should a business owner care?* Because Alexa and Echo devices will ultimately be used to perform voice-activated tasks like ordering products, researching information and — assuming the development tools are made available —

integrating with our business applications to eliminate typing and allow our employees to talk to our accounting, CRM and other information systems.

## **5. Powering Robots in the Warehouse**

Amazon has made it no secret that robotics are the core technology behind its warehouse-management practices. And recently, it deployed its one millionth robot, using a “new generative AI foundation model that will improve robot fleet travel efficiency by 10 percent.” The company promises that its investment in robotics will lead to faster delivery times and lower costs for customers and — to be politically correct — has re-emphasized its commitment to training its existing employees to prepare for the AI future.

*Why should a business owner care?* The cost of robotics has been dramatically decreasing while their capabilities have been dramatically increasing, thanks to AI. Amazon, with its deep pockets, has been investing in this technology for years, so it has a head start. But, thanks to the investments made by larger companies, many robotics companies have developed machines that will use AI to perform functions in warehouses, restaurants, retail stores, manufacturing plants and construction sites in a safer, more effective way than most humans. For business owners who can't find enough people to do this stuff, this will soon be a must-have.

## **6. Reducing Accounting Errors**

Optical character recognition, where information on a document can be read and then brought into a database, has been around for a while. But now, with advances in AI, these systems can not only extract data but better understand what to do with it. Amazon is leaning into this stuff heavily to help pay sales taxes and perform other accounting functions.

According to the Wall Street Journal, the company's finance teams “are turning to generative AI in areas such as fraud detection, contract review, financial forecasting, personal productivity, interpretation of rules and regulations, and tax-related work, moves in part aimed at reducing costs, boosting efficiencies and increasing accuracy, company executives said. These use cases are in a mix of experimentation and implementation stages.”

*Why should a business owner care?* Amazon's not the only one in this game. Similar capabilities are being rolled out by numerous accounting and business software companies for use by small and mid-sized companies too. As with Amazon, you may want to wait before buying because their technologies are also in a “mix of

experimentation and implementation,” so be careful about relying on them too quickly. But, as they get trained, they’ll get better, and as a result the back offices of many small and mid-sized businesses will perform more efficiently and accurately.

So, yes, Amazon’s doing lots with AI. And, yes, business owners should care.

## **Klarna, Etsy and a Driverless Truck Company Learn a Few Harsh Lessons About AI**

One of my favorite AI stories last year was the reckoning of Swedish buy-now-pay-later platform Klarna.

“Klarna’s AI assistant handles two-thirds of customer service chats in its first month!” the company giddily announced to the public, further trumpeting that it did the work of “700 customer service agents.”

And that wasn’t all.

“About 12 months ago, we would have been about 5,000 active positions within the company, and we are now down to about 3,800,” the company’s CEO said. “By simply not hiring, which we haven’t done since September ... the company is kind of becoming small.”

Replacing people with AI. Great idea! Except...not.

Last year, Klarna’s CEO, who, when delivering an earnings report, admitted that the company was “slowing down its job cuts” and getting back to hiring real people to do customer service because the company discovered that people actually want to talk to people.

Separately, a representative from Klarna said that the company is “not reversing on AI” and is “continuing to invest heavily in AI, including rebuilding our tech stack to be AI-first.” But the company also admitted that its CEO “acknowledged that an overemphasis on cost—not AI itself—led to lower quality.”

It turns out Klarna’s not the only company experiencing buyer’s remorse from AI.

For example, a company that announced that its “driverless trucks” built on an AI platform would be rolling through Texas recently discovered that they actually need human drivers after all. Translation company Duolingo aspired to replacing its translators with AI bots but then faced a backlash from its community. Etsy has faced similar backlash from its community thanks to non-human-looking AI-generated products flooding its system.

After firing 8,000 employees and replacing them with AI systems, IBM rehired many due to “gaps in service, dips in employee morale, and delays in resolution.” Australian telecom company Optus attempted to automate functions with AI but then found that AI couldn’t handle many issues as well as humans. McDonald’s

stopped its AI-based ordering test after discovering that humans could do a better job servicing its customers.

Which is why it should be no surprise that a recent report by organizational design and planning platform firm Orgvue noted that as many as 55 percent of companies that had laid off staff due to AI automation now regret the decision. According to the report, “these companies found that AI could not fully replicate the nuanced understanding and adaptability of human workers, leading to a reevaluation of their workforce strategies and a renewed emphasis on human roles.”

Uh...duh?

This stuff just wasn't ready for prime time. And companies who thought that they could use AI instead of humans learned the same lessons as Klarna, McDonald's and others.

Why? For three reasons.

### **For Starters, People Aren't Stupid.**

I stayed at a Marriott conference resort last year and called to find out if the restaurant was still open. A very human-like bot answered my call, and at first I thought it was a real person. But I figured out quickly that it wasn't. Something was just...off.

Just like you can sense someone else in a room with your eyes closed, humans innately know when they're not dealing with another human. We quickly figure out when we're talking to a bot. Maybe not right away. But give me just 60 seconds on the phone with an automated, AI-driven voice, and I'll be able to figure out that the “person” on the other end isn't a person. AI isn't yet able to respond quickly, jump back and forth between questions and issues, and generally behave like a human. All you have to do is ask a personal question or veer off track from the main conversation, and most AI bots get confused and then sound like...a bot.

### **Next, People Will Want to Talk to Humans...Sometimes.**

How many times do you furiously punch “0” on the phone the minute an automated system picks up?

Navigating through these help desk mazes can be infuriating and time consuming. But that doesn't mean there isn't a role for AI. A good customer service system using AI will eliminate the “press 1 for customer service, press 2 for sales, etc.” with a human-like voice asking questions and (hopefully) giving answers quickly. But therein lies the most important thing: If an answer can't be gotten quickly or if the

caller simply wants to vent to a human, there should be quick way to take the red pill (or is it the blue pill?) and get out of the Matrix.

My advice to companies is to understand that people do want to talk to people sometimes and to understand that not every question is a simple question. Be transparent when a bot answers the phone and give us a way out. Don't get rid of your customer service staff. Use AI to screen and answer low-level questions and then use your humans for everything else.

"Humans deeply care about what other humans think—it's something that seems hardwired into us," OpenAI's CEO Sam Altman said at a conference. "While we may keep developing better tools, our focus will always return to one another."

### **Finally, the Companies That Advertise Their Internal AI Initiatives Are Making a Mistake.**

Many companies think they're doing the world a favor by issuing press releases advertising their AI investments. My advice: don't. It's simply bad PR, often premature to share and could create unnecessary and potentially uncomfortable explanations if early strategy or results change (they likely will).

Please don't advertise how you're replacing people with AI. Don't be like the Shopify CEO who publicly stated that it has to be proven that any new job can't be done with AI. He looks like a villain. No one wants to hear it. Keep it to yourself.

Many workers are terrified of losing their jobs, and, when a company like Shopify does this kind of stuff, it says to them: "We don't care about you." Good luck finding talent after that. Who wants to work for a company that considers its people so value-less that it will not only replace them with bots but also tell the universe how smart it is by doing so?

AI is great, and it will get better. But never believe that it will be good enough to fully replace human interaction. It never will.

# How AI Is Reshaping an ERP Software Company's Strategy

Keywords: AI in ERP, intelligent ERP, ERP software trends, business intelligence

For the past couple of years, I've been telling my clients and community of businesspeople that they have two choices when it comes to incorporating AI in their companies: build or buy.

Building, for the most part, has been a big brand game. As I've previously written, financial services companies have spent tens of millions of dollars building out internal platforms on AI models for customer service, research and programming functions. Small and mid-sized companies don't have these kinds of resources, although some have come on the market that — with maybe a few hundred grand — can enable some to build out their own internal AI solutions. These tools will certainly improve and become less expensive over time.

Buying AI solutions, however, is a better option for most of these small and mid-sized organizations. Unfortunately, they have to wait until the companies that they rely on to provide their core software systems start rolling out AI features that are accurate and reliable enough to use. This is now happening, and the proof comes from one mid-market enterprise resource planning (ERP) provider.

Epicor has been around for several years. The company has more than 23,000 customers in 150 countries who are mostly distributors and manufacturers. It has grown through acquisition and by making a good product. Its recent user conference — where I participated (I have not been compensated by the company to write this column) — had about 4,000 attendees. Most of these attendees were accounting and management types eager to hear what's coming from the provider of the core systems they use to process orders, manage inventory and make planning decisions.

They, like me, left with several takeaways. For me, these were the most significant.

## **AI in ERP Was About Business Intelligence Last Year.**

Epicor's theme was "cognitive ERP" or using AI to analyze data and predict outcomes. By doing so, users can smooth out supply chain issues and potentially mitigate tariff challenges (a big topic this week) by better understanding their costs and product availability so that they can predict activity. A good manufacturing and distribution ERP system enables companies to model sourcing scenarios and assess tariff impacts at the SKU or bill-of-material level, which is critical for navigating ongoing geopolitical uncertainty.

“You need to have a system that allows you to understand scenario planning and how you might source something differently,” Steve Murphy, the company’s CEO, told me. “AI can help companies manage tariffs and supply chain disruptions by providing supplier risk scores, traceability, and ‘what-if’ simulations, especially as geopolitical tensions rise.”

### **AI in ERP Is Also About Supporting and Not Replacing Humans.**

The day will come when AI is reliable enough to truly do the work that humans are doing. But even ERP providers like Epicor aren’t stepping into that minefield yet.

“We’re not exaggerating. Summarizing specs, automating quotes, assisting orders...that’s all extremely real. But letting AI swap vendors? We’re not there yet,” said Murphy. “I wouldn’t fire anybody over AI.”

Vaibhav Vohra, Epicor’s President and Chief Product and Technology Officer, agrees and emphasizes that Epicor uses AI to automate routine tasks internally and increase margins to complement skilled labor by enabling them to focus on high-value work.

“Attempts to replace human workers with AI or robotics often fail,” he said. “We tried it, and we weren’t successful. The true opportunity lies in using AI to assist workers and make them more efficient, not to eliminate their roles.”

### **Finally, AI in ERP Will Ultimately Be About Vertical Integrations.**

Epicor’s Vohra says that AI becomes significantly more useful when customized for specific industries. Which is why ERP software providers like Epicor are focusing on defined sectors.

“We’re moving away from being a general ERP provider to becoming a collection of highly specialized vertical ERP platforms, with each one tailored to its industry,” he said. “We’re picking our partners that we’ll be in bed with for a long time.”

AI without data is like a smartphone without the Internet. But, for most distributors and manufacturers, the data needed to make decisions aren’t just in their ERP systems. There are data that will be collected by drones checking inventory, robots stocking shelves, machines that monitor and track runtimes, and autonomous vehicles moving materials around a warehouse. Just as importantly, there are data in the systems of suppliers, customers, freight companies and other vendors.

Software companies like Epicor need to integrate their systems with all these other repositories to provide true value, and the executives running the company realize that. According to Vohra, the company has tripled its number of partners to focus on

niche capabilities like rugged devices for poor Wi-Fi environments and other warehouse machinery.

“Our competitive strategy is rooted in specialization,” said Murphy. “By going deep into specific verticals like discrete manufacturing and hard goods retail, our company can differentiate itself from larger players trying to serve everyone. We’ll continue to be open to integrating or acquiring companies with complementary technologies like robotics or drones to deliver faster innovation to customers.”

All of this is where AI in ERP stands. I expect this column to be outdated in a year, if not less.

“Despite all the complexity, our AI and data tools are developing more quickly than I expected six months ago,” said Murphy. “People are productive, and that’s working for us.”

## **Why Does a Telecommunications Firm Care About AI? This Is Why.**

Cox Communications is the largest private broadband company in America. Its fiber-powered wireline and wireless connections are available to more than 12 million homes and businesses and support advanced cloud and managed IT services nationwide. Why does it care about AI?

Two big reasons. The first is connectivity.

“The fabric of our infrastructure is indeed what we do for a living... the air, the water, the utility of getting to the capabilities that you would think of as AI,” said Jeff Breaux, the company’s Chief Commercial Officer. “We are playing on many different planes...connecting customers to the AI engines in the cloud and the data centers.”

While big tech companies are struggling to prove that the billions they’re investing in AI is going to be worth the return, the real money that’s being made right now is in infrastructure. And that money is benefitting many industries.

Countless, giant data centers are springing up around the world, providing thousands of construction jobs for an industry that desperately needs the work in the midst of high interest and sluggish building and real estate demand. But they’re not the only ones profiting.

Who also benefits from the data center boom? Energy providers and consultants. Cooling specialists and the equipment they sell. Companies that make chips, hardware and networking switches as well as GPU servers, processors, memory boards, monitoring sensors, storage, lighting, networking software, security tools...the list goes on.

But what about telecommunications? Think about it: all this needs to be connected to the end user. You can build the greatest data center ever, but, if no one can access the data, then what’s the use? That’s where firms like Cox come in. According to Breaux, AI cannot function without high-speed, resilient connectivity, and Cox’s commercial business unit — including brands like Cox Business, Segra, Hospitality Network and RapidScale — builds and operates the infrastructure that makes AI usable in the real world. He sees this as the foundational layer of the entire AI ecosystem. And he’s right.

So that’s this first reason. Which brings me to reason number two: tech services.

Besides providing the infrastructure, Cox is also doing something unique in the AI space. It offers services through a company called RapidScale, a managed services provider that helps businesses modernize IT by offering cloud solutions including everything from Desktop and Infrastructure as a Service to backup, recovery and security solutions. But, thanks to Cox’s AI investments, RapidScale is now positioned to do more: help companies first figure out and then use the AI applications that Cox’s network is helping them to connect.

“Many businesses know they want to begin to put AI to work, but their data and their environment are not in a position for AI to take advantage,” Breaux says. “RapidScale helps them get organized by getting their data in a position where it can be actionable by the language models.”

Breaux sees these two opportunities as major growth areas for telecommunications firms like his. Sure, there’s plenty of money to be made providing connectivity services between data centers and the rest of the universe. But that universe has a lot of businesses. And, once they’re connected, they need help. Who better to do this?

Breaux says that Cox can address these needs. But he’s not delusional when it comes to the limits of his firm’s capabilities. It’s why he oftentimes recommends and brings in partners — cloud providers, application vendors, IT consultants — when a customer needs something outside of Cox’s or RapidScale’s wheelhouse.

“We’re a 128-year-old company. We don’t make commitments to customers we can’t fulfill,” he said.

Given the uncertainty and newness of AI, Breaux believes that many customers often lack expertise and need a partner to ensure that their AI projects are value driven rather than expensive experiments. He’s concerned that companies can incur significant costs without driving business value. He wants his organization to help his customers ensure that they’re making the right investments and achieving the best outcome.

“They may not have the talent, the expertise. Even the courage! We consult with them to say: how might you approach this opportunity?”

So where is this all heading? Breaux sees a future where every business runs a multi-layered AI ecosystem — and innovative telecommunications firm Cox supports the whole life cycle. Breaux projects rapid acceleration in AI adoption and sees Cox as a long-term partner for infrastructure, cloud, connectivity and modernization.

So, it’s not just about Microsoft or Google or OpenAI. And it’s not just about infrastructure. It’s about connecting and then usability. And the firms in the middle of this food chain are the ones best positioned to help businesses get ROI from their AI investments.

## **The 2025 Stanford AI Index: Six Takeaways That Are Important for Your Business**

Last year, the Stanford Institute for Human-Centered AI, an interdisciplinary institute established in 2019 to advance AI research, education, policy and practice, published its 2025 AI Index Report, which aims to “develop a more thorough and nuanced understanding of the complex field of AI.”

The report had several important takeaways that impact all of us who run businesses. Here are the five biggest takeaways.

### **Large Language Models Are Getting Small and Mid-Sized and Cheaper.**

#### **The report says:**

*In 2022, the model registering a score higher than 60 percent on the Massive Multitask Language Understanding (MMLU) benchmark was PaLM, with 540 billion parameters. By 2024, Microsoft’s Phi-3-mini, with just 3.8 billion parameters, achieved the same threshold. This represents a 142-fold reduction in over two years. Depending on the task, LLM inference prices have fallen anywhere from 9 to 900 times per year since 2022.*

#### **Why this is important for your business:**

As I wrote, it’s becoming more affordable for businesses of all sizes to build their own AI solutions using company data from many different sources. The biggest obstacle remains the price of a developer or IT person sufficiently versed in these tools to do the work.

### **Problematic AI Jumps**

#### **The report says:**

*The number of AI-related incidents rose to 233 in 2024, reached a record high and registered a 56.4 percent increase over 2023. Among the incidents reported were deepfake intimate images and chatbots allegedly implicated in a teenager’s suicide. While this isn’t comprehensive, it does show a staggering increase in issues.*

#### **Why this is important for your business:**

AI is being used for bad stuff. As business owners, we have to let others worry about those terrifying Terminator-type risks that could destroy human civilization and instead focus on getting training and tools to combat the growing use of AI to fool our employees into downloading malware, opening up our systems for data breaches or inadvertently transferring money out of our accounts.

### **More Useful Agents Are Rising.**

**The report says:**

*AI agents show early promise. In short time-horizon settings (two hours), top AI systems score four times higher than human experts, but when given more time to do a task, humans perform better than AI, outscoring it 2-to-1 at 32 hours. Still, AI agents already match human expertise in select tasks, such as writing specific types of code, while delivering results faster.*

**Why this is important for your business:**

AI agents are rolling out this year, but few are worth using in your business due to their immaturity. That's for now. In the meantime, we should still be testing them and getting familiar with their capabilities. Within the next few years, agents will be commonplace, performing a great deal of work that our employees are currently doing. Some business owners will (rightly) see this as an opportunity to reduce staff. But smarter leaders understand that their job is to prepare their best people to leverage these tools to be even more productive.

**AI Investment Is Sky-High and Going Corporate.****The report says:**

*The U.S. widened its commanding lead in global AI investment. U.S. private AI investment hit \$109 billion in 2024, nearly 12 times higher than China's \$9.3 billion and 24 times the UK's \$4.5 billion. Businesses are turning to AI. In 2024, the proportion of survey respondents reporting AI use by their organizations jumped to 78 percent from 55 percent in 2023. Similarly, the number of respondents who reported using generative AI in at least one business function more than doubled, from 33 percent in 2023 to 71 percent in 2024.*

**Why this is important for your business:**

AI is real. Right now, it's a big corporation game with larger brands sinking hundreds of millions of dollars into agentic and generative AI systems that do everything from writing software code to autonomously handling customer service requests. Ultimately, these things will pass down to small and mid-sized companies that opt to wait for their core software vendors to introduce AI features into their business processes.

**Regulations Move to the States.****The report says:**

*U.S. states are leading the way on AI legislation amid slow progress at the federal level. In 2016, only one state-level AI-related law was passed, increasing to 49 by 2023. In the past year alone, that number more than doubled to 131. While proposed AI bills at the federal level have also increased, the number passed remains low.*

**Why this is important for your business:**

I'm not expecting significant regulations coming at the federal level in the short term. Most will be at the state level and focused on two things: misusing AI in the hiring process (it can be biased) or duping customers with questionable AI bots. Of course, many of these regulations will be decided on by regulators who may be challenged turning on their own TV sets, let alone understanding the implications of AI. But regardless, it will be important to monitor these rules in your state to make sure you're compliant.

The above five trends are important for business owners and managers to keep in mind as they're considering AI and other technology investments. And yet, as interesting as they are now, won't it be fascinating to see what their 2030 report has to say?

# How to Turn Your Accounting and CRM Systems Into ChatGPT in Six Not-So-Easy Steps

You run a small and mid-sized business, and every tech expert in the universe is telling you to “embrace AI” and warning that, if you don’t, you’re going to fail.

They’re a little dramatic. But they’re not wrong. So you have two choices. You can wait for your software vendors to develop AI features on top of their applications. Or you can build your own.

Unless you’re a huge corporation with lots of resources, building your own AI system was not a great option even as recently as a year ago. But there’s been a significant change in the tools available.

Let’s say you’re using an accounting system like Epicor, Dynamics, Sage or QuickBooks Enterprise for your quotes, orders, invoices, inventory and payables management. And let’s say you’re using CRM software like Zoho, Salesforce, Insightly or HubSpot for your sales and marketing. Can you turn these systems into an AI-based system so that you can query all this data like you can do with ChatGPT?

The answer is yes. But it’s still complicated and expensive for many small and mid-sized businesses. However, if you want to consider this option, then here are six not-so-easy steps you’ll need to take to do so.

## **Step 1: Hire a Developer.**

You’re not going to do this on your own, and all the remaining steps will require a human to bring the apps, tools and data together. A good developer will cost you \$150K-\$200K annually. The good news is that, thanks to AI, many tech firms and the government are laying off developers. So there’s talent available.

## **Step 2: Define Your Deliverables.**

How do you want to use your data like ChatGPT? You’re going to want to think of all the prompts you’ll be using such as “Give me the status of a customer order” or “Based on prior projects, how would I price this project?” or “What materials can we substitute to manufacture this product?” or “How much machine time should I consider for this job?” This will keep you focused on results.

## **Step 3: License an LLM Platform.**

Just like you would license a database like SQL Server to write an application, you’ll instead need to license an LLM (large language model) to be your ChatGPT. There

are lots of options available, and that's an entirely different article I could write. But you should know the big players: OpenAI, Llama, Anthropic, Google, Microsoft. All these companies will deliver to you a ready-to-go LLM model that can be populated with your data and trained.

#### **Step 4: Create Your Data Integration and Index.**

Now the really hard part.

You will need to use the APIs (application programming interfaces) provided by your accounting and CRM vendors to move data from these systems into your LLM. Or you can consider out-of-the-box data integration tools like Zapier, Fivetran, Airbyte, Talend or Make. Or your developer can write custom scripts.

LLMs are different than databases. A database has tables with rows and columns of data. In an LLM, data are unstructured. So, instead of having an invoice record showing date, customer, amount and description, an LLM would have the same information but in the format of "on June 12, 2024, Acme Corporation was invoiced \$354.60 for dry goods." This information needs to be indexed so it can then be prompted. Tools like LlamaIndex or LangChain can turn these data into unstructured chunks that can be queried.

Key information about this data needs to be stored in a "vector" database using tools like Pinecone, Weaviate or Chroma. Different than an LLM — which is considered to be the "brain" that understands and generates language — a vector database is a filing cabinet or a type of database that helps computers quickly find things that are similar to each other, like finding a photo that looks like another photo or a sentence that means something similar to another sentence. It works by turning things like text, images or sounds into sets of numbers (called vectors) and then comparing those numbers to find the closest matches. LLMs and vector databases work together.

Metadata filters then need to be created to make that happen. You'll also need to schedule workflows to update data from your accounting and CRM systems into your vector database and LLM so that your queries are using the most recent information available.

I'm simplifying this whole process. There's more work involved. And there are licensing costs, which can be significant depending on your data needs and usage. All of this should be investigated in advance and before you get started.

Now do you see why you need a developer?

### **Step 5: Build Your User Interface.**

ChatGPT has a very simple user interface. But there's a lot going on behind the scenes so that it can translate the prompts we submit into a format that its LLM understands. You don't have to build this from scratch. You can use dashboards like Streamlit, Gradio or ChatGPT's custom interfaces. Or you can develop and embed the interface into Microsoft Teams or Google Gemini. Your custom interface would need security to limit data access to users based on their logins and roles. Authentication, encryption and audit logs also need to be created and maintained.

### **Step 6: Train, Train, Train.**

Do you notice how ChatGPT and other chatbots are becoming better at answering questions? That's because, since their introduction in 2022, there have been countless millions of queries made to their LLMs, and with each query the system gets smarter. The same goes for your system. Your users will need to test and train and review and help your AI system become smarter too.

I recently showed these steps to a client, and they were overwhelmed by AI's complexity. They're not wrong: It is complex.

But it is something that can be done with the right developer in place using the right tools, including the ones I've mentioned above. For small and mid-sized companies that don't want to wait for their software vendors to catch up, or for those that have data stored in multiple places and need to consolidate to truly build a meaningful generative AI system, there is now a (somewhat) affordable path.

All of this will take time. Probably a year. Do you do this? Do you wait? At least now you have options.

# **AI in Accounting Is Here: Seven Game-Changing Innovations You Should Know About**

Over the past few years, there have been countless articles and columns from people predicting how AI will be used for and by accounting professionals. Finally, these predictions are beginning to become reality. Here are some interesting uses of AI in accounting that those of us in the profession should know about.

## **Reducing DSO**

People make mistakes when entering orders into their supplier portals. A finance platform called Tesorio aims to automate this process to minimize these mistakes and speed things up. The problems they're solving include incorrectly formatted or inaccurate submissions. Their agents aim to reduce the time it takes to fill in required fields and submit invoices to various supplier portals. According to Tesorio, its agents autonomously access these portals and submit invoices and then monitor the approval process. Not only would this help customers by expediting the ordering process, but it then reduces DSO — or days sales outstanding — which is the time it takes for the supplier to complete a sale and get paid.

## **Tax Research**

The U.S. Tax Code is long, and the interpretation of these rules takes up countless more pages. All of this is being turned into LLMs and trained with questions to deliver fast and reliable answers. One company doing this is Thomson Reuters, which recently partnered with AI platform Anthropic to build such a system with Claude, its popular chatbot, as its interface. According to Venture Beat, it's one of the "largest rollouts in the tax and accounting industry." Built on Amazon Web Services, the content also includes resources from 3,000 subject matter experts and 150 years of professional publications.

## **Expense Capture**

There are several companies leaning heavily into AI to automate expense capturing — be it through scanning, e-mails or synching with banks. For example, Fyle has something called "conversational AI" where a user takes a photo of a receipt and sends it by text which is then automatically categorized. SparkReceipt not only automates scanning and categorization of receipts but also accepts information from bank statements and other documentation. Dext says that it works with every major accounting software and integrates with over 11,500 financial institutions worldwide and creates "smart supplier rules that help to efficiently process and publish invoices." All these applications learn with each document so that their AI

algorithms can apply similar logic to other, similar documentation in lieu of a human having to do so.

### **AI Bookkeeping**

A tech firm called Briefcase raised \$3 million in 2024 to not only do expense capturing but also to use AI to automate the entire bookkeeping process. Its AI algorithms supposedly learn all the details from every transaction and then post all the way through to a company's general ledger. Briefcase acts more like an accountant than a bot. It's smart enough to detect duplicate invoices and receipts. It can also detect invoices that are prepayments (i.e. insurance) and then automatically schedules monthly entries to amortize and record the amounts. It can do the same with deferred revenue. Based on prior transactions, it will automatically create regular accruals and other adjusting entries.

### **Deliver Us From Spreadsheet Hell**

Regardless of how "automated" we seem to be, most of my clients are still finding themselves in spreadsheet hell, managing various Excel or Google Sheet files and manually updating them for reporting and analysis. LiveFlow uses AI to deliver us from that place. The company raised more than \$13 million for its AI Connector to bridge spreadsheets and popular accounting software like QuickBooks and Xero where information can be shared with teams without giving them access to the full accounting system. It positions itself as the intermediary between the accounting system and spreadsheets to enable up-to-the-minute budget vs. actual, cash flows, vendor spending and other analysis.

### **An AI-Driven Dashboard**

I like my clients to keep a thumbnail "flash report" of key information in their business. But because data are located in different places, it's time-consuming to put together. A startup called Finally raised \$200 million last September to connect data from financial institutions, accounting software and other sources into a single, easy-to-access location. Using a single login, Finally built a dashboard of all pertinent data like spending, account transactions, trends and other information related to a company's financial health which can be viewed anywhere and in real time. Its AI capabilities are used to identify abnormal expenses, unusual margins or unrecognizable transactions. As it learns, it makes better recommendations tailored to a company's financial history.

## **Agents in the Back Office**

Microsoft has rolled out 10 new agents targeting sales, finance, operations and customer service for its Dynamics customers. On the financial side, these agents will include using AI to “autonomously manage collaboration with suppliers to confirm order delivery, while preempting potential delays” and “help teams prepare and cleanse data sets to simplify and reduce time spent on the most labor-intensive part of the financial period-close process that leads to financial reporting” and “automate the matching and clearing of transactions between subledgers and the general ledger.”

Intuit, the maker of QuickBooks, is going all-in on AI. Intuit believes AI can be used to do a lot of the mundane, repetitive administrative work that’s wasting time. Its “Intuit Assist” is using agents to create invoices, match expenses, generate invoice reminders, convert e-mail exchanges into estimates, invoices and bills and schedule payments.

We’re still at the very early stage of using AI in accounting. The technology remains immature and unreliable. But it’s getting better. Last year, we saw the introduction of AI tools for brave accountants to try. But this year, usage will increase. By 2027, many companies will be relying on these and many other AI agents to perform a significant number of financial tasks. The best accounting and finance professionals will lean into these agents to help them do their jobs better. Those who ignore them will do so at their professional peril.

## **Recommended AI and Tech Tools for Accountants to Consider in 2026**

Thanks to AI, the world of technology is rapidly changing. As a certified public accountant, I've been testing and using various tools at clients and discussing with others in the profession. If you're an accountant like me, here are a few that I'd recommend checking out and potentially using — either at your firm or recommending to your clients — this year.

### **AI Assistants**

Every business professional should subscribe to an AI Assistant like ChatGPT, Microsoft Copilot, Google Gemini, Perplexity, Claude, Grok or several others. A good AI assistant will integrate with your office platform and your saved file systems like OneDrive, Google Drive or Dropbox. Your AI Assistant can help give you expert (although never perfect) advice on any business issue facing your firm or your clients. Also important, a good AI Assistant can create policies, review documents and suggest just the right wording for client communications.

### **Microsoft 365/Google Workspace**

Every good office needs a good office platform, and the two most popular are Microsoft 365 and Google Workspace. New AI capabilities can automatically create presentations, analyze spreadsheets, build macros, write proposals and quickly extract data from files in folders. For 2026, I recommend hiring a Microsoft or Google consultant (try LinkedIn) and getting your team trained. Not only will you realize all the tools that you're not using (which will increase your productivity), but your employees will become more familiar (and less fearful) of AI and better appreciate its value.

### **Paychex Partner Pro**

Paychex (a client of my company) offers a platform called Paychex Partner Pro (previously called AccountantHQ) that gives accountants instant access to their shared clients' payroll and human resources data from one simple dashboard, allowing them to save time and deliver smarter insights to their clients. Other major payroll and HR providers offer similar platforms. It's a great way to keep on top of your clients' payroll data and tax filings and identify potential HR needs that could be the source of additional business for your firm.

### **GenAI In Popular Accounting Applications**

Xero has Just Ask Xero. Intuit offers Intuit Assist For QuickBooks. Sage has its own version of Copilot. SAP has Joule. Most major accounting and enterprise resource planning (ERP) platforms offer Generative AI tools and assistants that help both companies and their accountants receipt data extraction, document classification, invoice and bill generation, invoice reminders and proactive financial insights into a company's data. All use similar natural language query interfaces akin to what you'll find in a popular AI assistant. Ultimately, these tools will replace how we analyze and report on all our data.

### **Agents in Popular Accounting Applications**

In July 2025, Intuit announced a "ground-breaking" team of AI agents to "fuel growth for businesses." While agents still have a way to go before they're truly deemed reliable, many software makers like Intuit are rolling out their versions of agents to help do more work in the back office. Microsoft Dynamics, for example, is rolling out agents to handle sales order processing, supplier communications, financial and account reconciliations and time and expense reporting. It's important to get familiar with the current (and planned) capabilities of these agents not only to use within your firm but to help guide your clients.

### **BILL Accounts Payable Automation**

BILL is one of several accounts payable automation systems that many accountants are helping their clients to implement. These systems use optical character recognition to extract accounting data from vendor and supplier invoices and bring them into just about any mainstream accounting system for approval, processing and payment. Platforms like BILL are using AI to make more intelligent and accurate decisions and are helping to cut the repetitive tasks many accounts payable staff are performing to enter and pay invoices.

### **Meeting Transcription and Summary**

Products like Zoom, Teams, Meet and Otter are helping accountants and their clients save time and be more focused at meetings by "listening" in on conversations, transcribing them and providing detailed summaries and action lists for participants.

### **FloQast for Workflow Enhancement**

FloQast Accounting Transformation Platform says it's "built by accountants, for accountants" and claims to simplify workflows and enhance productivity. It enables accountants to build auditable workflows to automate tasks like accruals, journal entries and reconciliations — no IT required.

## **AI Bookkeeping**

Several startups like Kick, Pilot and Puzzle are using AI to automate the bookkeeping process. Similar to the technology used by BILL, these applications can automatically bring in data to their platform, post transactions and create journal entries, all without human intervention. As they mature, they'll become an indispensable (and profitable) part of any accounting firm's data-collection process from their clients.

## **Finally (of course) Tax Research and Preparation**

If there is one area where Generative AI is having an impact for accountants, it's helping them (and their clients) do tax research and prepare tax returns. Platforms and tools like TaxGPT, Tutti and Thomson Reuters are offering great applications that can help any accountant be a tax expert by finding and verifying important information as well as helping to prepare and manage tax return compliance.

There are many technologies available for accountants — and accounting and finance professionals — right now, and they'll only become more reliable with more choices in the years to come.

## **How Google's Project Jarvis Will Soon Eliminate Your Accounting Department**

There's a rumor that Google will soon be launching a major update to Chrome. But it's more than your typical update. It could be huge. And although it's targeted at consumers, there will ultimately be a major impact on companies.

The application is code-named Project Jarvis, and it's designed to literally take over your device and perform tasks as if you're sitting in front of it. Which means, just by giving a few instructions, it can go on to Amazon and purchase a product or Expedia to book a flight. All without a user doing a single click.

According to Google, it's nothing more than an "intelligent companion designed to simplify your life, from managing your smart home to effortlessly sharing files" where users can use its "user-friendly interface" to "get information, send messages or complete tasks."

Sounds innocent enough. But it's much, much more.

According to Betsy Burton at Aragon Research, Project Jarvis "represents a whole new step towards a future where AI seamlessly integrates with our digital lives." She says the integration with Chrome will be "almost an extension, but with the AI capabilities needed to understand your needs and preferences and work autonomously on your behalf."

Microsoft, IBM and Anthropic are working on similar AI agents, and, to be sure, all this technology is in its earliest stages. Google, for sure, is leading the way.

"I think about agents as intelligent systems that show reasoning, planning, and memory," Google CEO Sundar Pichai says. "They are able to think multiple steps ahead, work across software and systems, all to get something done on your behalf, and, most importantly, under your supervision."

It's still early days, but, rest assured, this technology will become better — much better — quickly. And the impact on companies once adopted into business applications will significantly disrupt the way work is being done. The best example that I, as a CPA, can demonstrate is how accounting departments will be impacted. Why? Because most of the work done by accounting departments involves mundane, repetitive data entry on screens. All of which can be ultimately replaced by Jarvis-like agents.

Think about what your accounting staff is doing. Then think about how a simple voice command to an agent can do this instead. Examples:

“Convert today’s approved open quotes to orders.”

“For all orders shipped yesterday, convert to invoices and send to customers.”

“Compare all cleared checks on our bank statement to checks written in our accounting system and generate a report of open checks.”

“For all customers with open orders past a promised date, send an e-mail updating their status.”

“Create a new customer record using information in this saved document.”

“Purchase six truckloads of materials from XYZ supplier at a price not exceeding \$1.00.”

“Make an estimated tax payment.”

All these things are now being done by inputting data into a device, usually a desktop. And, with all due respect to the people doing the work, none of these tasks takes much brainpower. All of them can be done by an intelligent-enough agent that becomes familiar with your accounting applications.

Is this over-hyped? One Reddit user echoes a lot of people I know when she says she’s cautiously optimistic.

“It could be a game-changer if it truly enhances our Chrome experience and workflow,” she writes. “But Google’s track record with AI products is hit-or-miss. The key will be how seamlessly it integrates and whether it offers real value beyond existing tools. I’m excited to test it out and see if it lives up to the hype!”

All of this is not without risks. Aragon’s Burton says that Project Jarvis “introduces a whole new host of security, privacy and ethical challenges.” It would ultimately have unprecedented access to your company’s data and be carrying out tasks mostly unsupervised. “There’s also the risk of over-reliance, with users potentially becoming overly dependent on the AI for critical tasks that may or may not be accurate,” Burton writes.

None of this is happening right away. But it’s going to happen pretty fast. My prediction is that the big tech companies that are developing agents similar to Project Jarvis will be licensing their technologies to software vendors. Accounting software vendors from Intuit to Sage to Epicor and SAP will be developing similar

agents on their own or may use Project Jarvis or Anthropic or Microsoft. As these agents become more dependable, they will literally be doing the work that your accounting staff is doing. Your payables and billing people should be taking note and updating their skills if they want to keep their jobs.

Because this is what it's all about, isn't it? Jobs. Productivity. Overhead reduction. I have clients who employ multiple people in their accounting departments doing data entry all day. They rekey data from one system to another. They attach documents. They enter and retrieve information. They move transactions to spreadsheets for more analysis.

All of this is done by moving a mouse along a screen, pulling down menus, clicking on links, identifying open fields, entering data into those open fields, clicking the save button and then moving on to the next transaction. Project Jarvis AI would easily replicate those actions. With less mistakes. All day and all night. And it doesn't need health insurance. It would get smarter as it learns.

You'll start to see this happening soon. Most accountants and business owners I know won't trust this technology. Many will resist. Accountants like me tend to be overly conservative. And people doing data entry inside of companies oftentimes get territorial. We hate change.

But having this attitude will put our companies in peril. Because younger, more innovative competitors will lean heavily into Project Jarvis and its competitors to help them run their companies as efficiently as possible. And, by doing so, they'll be able to quote prices much lower than those who don't while still protecting their margins.

# How Intuit, Xero, Sage and SAP Are Positioning AI to Change Your Accounting Department

You're running a small or mid-sized business. Or maybe you're a senior financial manager. You want to leverage AI to make your accounting and finance operations better and your people more productive. What options did you have then? Read on to discover them.

## A Bunch of AI Startups

There were many startups leveraging AI to do all sorts of things in accounting.

For example, Ember, Layer and Teal were developing applications that would embed within existing platforms to eliminate synchronization of data with accounting software. Rows, GPTEExcel and Numerous.ai were offering smart, AI-based spreadsheets (or formulas for spreadsheets) that, these companies promise, will "build better spreadsheets faster." Basis, Materia and Tutti were rolling out large language models to perform tax and financial research for both financial managers and outside accountants.

H&R block has "assistance" features that leverages AI to help file tax returns. Startups like Lili's AI accounting platform — which is targeted at very small and mid-sized businesses — promises that "your accounting and payments in one platform simplifies your bookkeeping and gives you a clear picture of your financial position." Several AI-based bookkeeping startups such as Kick, Pilot and Puzzle are also in the space. And there are vertical applications like FundGuard, which has raised millions for an AI-based application geared specifically for asset managers.

For the most part, the above applications — while showing promise — are in their relative infancy and are still in development. If you want to get in on the ground floor, go for it. But you may want to wait before buying.

If you're a financial manager, or an accountant (like me), then you're probably conservative and — unless there's a significant business demand — don't like to be on the bleeding edge of technologies. My clients are using well-established accounting software applications and — rightly so — are looking to these vendors to introduce AI features so they can increase productivity and help their businesses run more efficiently. So, when it comes to AI features, what can you expect to see from some of these bigger and more mainstream accounting software companies this year?

## **Xero JAX**

Xero, which has more than 4 million subscribers in over 180 countries, has introduced JAX. It's an AI Assistant that will do things like generate and edit a quote by voice command, alert when there's an overdue invoice (and help create the appropriate response), proactively prepare a payroll run in advance for review and approval and help with cash projections.

## **Intuit Assist for QuickBooks**

Intuit launched its Intuit Assist for many of its products late in 2024. For its flagship small and mid-sized business accounting platform QuickBooks, Intuit Assist offers a natural language reporting and analytics tool ("What is my income year to date?", "Who are my largest customers?") along with its AI advice on trends, issues and observations it gleans from a company's financial data. Much like Xero, it will also identify overdue and potentially overdue invoices and help craft responses based on the relationship with the customer.

## **Sage Copilot**

Sage's popular accounting software Intacct has its own AI assistant called Copilot, which also promises to perform similar functions as JAX and Intuit Assist such as preparing payroll for review and providing data and analysis of a company's financial operations on voice command.

## **SAP Joule**

Joule is SAP's AI assistant that will perform many of the functions I've described above but is also offering a more-advanced workflow-oriented experience for users. For example, it has a pretty cool process for resolving customer disputes and returning items that involves both a conversational interface and intuitive assumptions as to what's needed next in the process. This is more-advanced functionality than what's being offered by Intuit, Xero and Sage but lays the groundwork for the future.

## **And That's the Key Word: Future.**

For the most part, the AI functions being offered by these companies today are nothing more than a glorified version of ChatGPT. But they're being built using your company's data as their large language model. If you start digging into these functions, get ready to see words like testing, preview, waitlist, beta, trial and experimental. This is the software company telling you not to trust the results its AI functions are delivering. Yeah, they're just as nervous about this stuff as we are.

I've played around with these products and with Microsoft Copilot and Google Gemini, and the results are irregular and unreliable. Sometimes the queries just spin. Other times, the results are inaccurate. And even if the AI features work as promised, the incomplete and lousy data in my accounting system — which is my fault — produces the unsatisfactory results that you would expect.

The good news is that you can see where the train is heading. Some of the startups I mentioned above will fail, but others will flourish; and their AI tools will transform the way accountants and financial managers do their work. The AI offerings from Xero, Intuit, Sage, SAP and other smart tech companies will continue to evolve, get better and become more reliable. Right now, the media, PR and marketing are driving their AI offerings. Within a few years, it'll be their customers and competition that will be telling them what AI functions they need. Like all nascent tech, this will quickly improve as it's used more.

We haven't even seen the tip of the iceberg yet. Based on these early days, the future for AI in finance and accounting is exciting.

## **Balancing the Books: The (Very) Emerging Role of AI in the Accounting Industry**

For accountants like me, the promise of artificial intelligence is exciting. Why wouldn't it be?

The profession's biggest firms — like EY and PwC — are deploying AI technology in their auditing and financial-review procedures to identify irregular transactions or patterns of inconsistency. The technology could ultimately be used to perform a much deeper level of auditing analysis that can offer both investors and financial statement readers a more accurate and complete picture of a company's finances and at a more affordable cost.

Accounting software provider SAP recently released its AI assistant called Joule which promises — like Microsoft Copilot and similar offerings from Salesforce — to “provide customers with contextualized information and assistance when performing tasks in SAP applications.” SAP is already building an AI foundation layer with Joule sitting on top to help customers do things like create job descriptions and interview questions as well as analyze financial data, forecast sales trends and help with decision making.

In a keynote speech last year, Oracle founder and CTO Larry Ellison said that his company's Cloud capabilities will be leveraging AI to resolve customer service issues faster and — in the healthcare field, for example — help providers reduce their manual work through voice commands.

ERP maker NetSuite is adding AI capabilities throughout its financial products too. The company has recently added its own generative AI application called NetSuite Text Enhance for use across HR, finance, supply chain and sales. The tool promises to generate “content for any text area based on a few starter words that describe intent.” According to the company, “NetSuite Text Enhance helps finance and accounting, HR, supply chain and operations, sales and marketing, and customer support teams improve productivity by leveraging AI to produce relevant drafts that they can quickly and easily review, edit, and approve.”

These are just a few examples of accounting products and platforms that are starting to leverage generative AI. Other major providers from Sage to Epicor to Microsoft Dynamics, Xero and QuickBooks are doing similar, exciting things. But take note of the words in all these statements, press releases and news articles: They are “could” and “will” and “building” and “promises.” It's all just starting. Accountants should be aware: None of this stuff is ready yet for prime time.

Why? For three reasons.

The first is articulated well by Rajiv Rao, a contributing writer to ZDNet, who warns that, if you want to use AI tools for accounting, “you better think again.” Rao cites a recent survey that pitted ChatGPT against humans to solve accounting problems. Unfortunately, AI didn’t do too well, with students scoring an average of almost 77 percent correct answers vs. ChatGPT’s 47 percent success rate. “According to the study,” Rao wrote, “The LLM (Large Language Model) did fine on things like auditing but had trouble getting its artificial neurons around problems that dealt with tax, financial and managerial assessment problems — and these were sections that involved a lot of math. The output of these AI LLMs hinges on probability, and not accuracy. Output, by design, has been architected to represent an answer that has the statistically highest probability for the question asked. And numbers, sadly, don’t work like that.”

So AI really has a long way to go before it’s figuring out accounting problems.

Which is why you’re not seeing a lot of AI in the technical capabilities of these accounting applications. Even with all the hubris around the “transformative impact” of AI, what’s telling to me is that these new AI “features” really aren’t featured very much in these companies’ products. Research firm Gartner, which publishes its quarterly “Magic Quadrant” that looks at the leading Cloud enterprise resource planning (ERP) systems in the world, barely mentions AI features in the major accounting platforms in its latest report. Why? Because there really aren’t any, at least none that would make a difference to the accountants using these products.

Finally, even the software vendors themselves are telling the world that their AI offerings aren’t quite there yet. Per the sources I’ve reference above, few details of PwC’s AI technology have been disclosed, with the firm’s spokespeople admitting that “it feels like something we should be developing or exploring” and that early results showed the technology has “legs” for auditing. Analysts of SAP say that Joule “has promise” and that rolling it out will “take time.” And although NetSuite touted its AI tools in its recent press release, the fact is you have to read a little before you realize that most of the features added to the product’s new iterations have little do with AI.

This doesn’t mean that AI won’t live up to its promise. It’s just that the AI functionality teased by the largest accounting and ERP vendors is still being developed and we have a ways to go — maybe a few years even — before it gets rolled out, perfected and incorporated into our companies’ and clients’ financial

processes to the extent that we can actually rely on marrying this automation with our data.

For now, accountants and financial professionals should be paying attention and getting ready. We need to prioritize cleaning up our databases, going to vendor conferences, demanding demonstrations and understanding exactly how these tools will help us do things quicker and more affordably. That way, when prime time comes, we'll be good and ready.

## **J.P. Morgan Is Taking Big Risks With AI — and Businesses Everywhere Should Be Thankful**

In 2024, the Wall Street Journal interviewed Teresa Heitsenrether, who heads up the AI rollout at the nation's largest bank, J.P. Morgan. If you really want to know how AI is being used in the business world, then watch J.P. Morgan.

That's because J.P. Morgan is one of the many big companies that are on the front lines of AI. They're the ones spending countless millions on AI to improve productivity, increase profits and — let's not mistake this — keep their headcount as low as possible. They're not alone. Many big brands in other industries, from are, like J.P. Morgan, licensing AI models from OpenAI, Llama and Google to do the same. That's because AI is a big, corporate thing.

So, with all those millions being spent over the past few years, what was the status as of February 24, 2025, the date that interview was published?

"It's very early innings," Heitsenrether admitted. "First, we want to put the tool in people's hands and let them be able to ask questions and get answers. That already starts to spawn ideas, innovation, some productivity."

J.P. Morgan, like other big brands, has big plans. The banking giant has started with a generative AI rollout that's being used by about two-thirds of its 300,000 employees on "average for one-to-two hours a week." The platform is there to help internal employees do quicker research across multiple datasets so that they're better prepared for client interactions and internal meetings. It's also being used by customer service reps to look up transactions, documents, notes and previous customer interactions to more quickly and accurately resolve issues.

Heitsenrether's next plans include marrying the bank's AI platforms with its policies and procedures so it can learn to act like a J.P. Morgan professional. And then comes the big payoff: AI doing the work of humans.

"The third horizon, and we're not there yet, is for the models to be able to do more reasoning," she said. "What happens is they get a chance to think. OK, based on the complexity of the problem that you're asking me, let me think in the same way a human being would approach it. It lets the model find the resources it needs. Maybe it's going to go to the Internet or some system outside J.P. Morgan's databases. You can effectively take the workflow of somebody who's an investment-banking analyst or client-service person and teach the models the steps they would take to get their jobs done."

It all sounds exciting. But it's also extremely risky. Particularly for a conservative financial institution. Heitsenrether is going to have a lot of challenges. Differentiating and choosing between both public and private data which will invite copyright and intellectual property arguments. Minimizing the potential catastrophic costs of AI hallucinations which can cause wrong decisions and poor advice. Implementing controls to reign in its AI agents' behavior which can initiate incorrect orders, offer bad advice or generate inaccurate research. Navigating the bad press of replacing people with technology. Navigating client concerns about dealing with bots instead of actual humans, particularly when a bot can't understand human emotions and nuances.

Customers are fickle. People are dubious. Employees are frightened. Shareholders are impatient. And the technology? Well, we all know how unreliable that can be. I'm betting Heitsenrether has plenty of sleepless nights ahead of her, particularly those evenings before the next new AI thing gets rolled out.

And for this, all businesses should be thankful.

Countless soldiers died building Rome's Appian Way through enemy territory. Many workers perished constructing the Panama Canal. Astronauts have died in the pursuit of space travel. At J.P. Morgan, like other big brands, there's likely (hopefully) to be few deaths from their pioneering AI efforts. But there will certainly be costs. And mistakes. And potential lawsuits. And the loss of shareholder value. All of this to achieve a model of operating that is more automated, faster, more reliable and more accurate. This will not happen overnight. It will take years.

And, like the first roads of Europe and a new passage for shipping, the successes of J.P. Morgan will be shared by the rest of us. Big corporations are the AI pioneers. They're the ones figuring out how AI will benefit the business world and as they're testing it in real-life situations with actual people. New ideas will emerge, and new products will be developed. Ultimately, this trickles down to the rest of the business community as tech startups and other entrepreneurs watch, copy and develop cheaper and more efficient systems to market.

Despite the surveys you see, small and mid-sized businesses aren't really using AI. Not in the real world. Sure, we're dabbling with ChatGPT or other chatbots. But none of us are deploying AI in our core accounting, CRM, HR and operational systems. And we don't have the resources to develop, test, train and expand our own AI projects. We're waiting for this technology to be available someday so we can use it where it really matters. That day wouldn't be possible without big companies like J.P. Morgan risking their resources on these solutions.

Of course, they're doing it for their own benefit. But the rest of us will benefit from this too.

## **Can AI Predict the Next Unicorn?**

Can AI pick the best startup investment?

We all wish we could pick investments better, right? And if you're a venture capitalist or in private equity, doing so is your job. But how to know which startups will be the next Airbnb, Uber or Meta? How to tell?

Some platforms are now introducing AI-leveraged solutions to do just that: give an investor a strong indication whether an early-stage company is going to receive future rounds of funding and grow into that next billion-dollar unicorn. And do it with 95 percent accuracy to boot. Is this just fantasy?

### **Crunchbase Launches a New AI Platform to Help Pick the Best Startup Investment**

Not according to the team at Crunchbase. Last year, the company, known for providing historical data on tens of thousands of early-stage firms to its subscribers, relaunched itself as a new platform that will take this data, learn from it and then make predictions for its subscribers.

"The historical data industry as we know it is dead," said Jager McConnell, CEO of Crunchbase, in an interview with Venture Beat. "If you are a company, a data company, and all you're dealing with is historical data...I think you're going to find that you don't use it as much anymore in the future."

Crunchbase says that its predictions will identify — with as much as 99 percent confidence — which companies will be able to raise future funding, using a combination of private, public and "user engagement pattern" data. Crunchbase's new AI platform will answer questions like "What is the business model of this startup?" and "Compare startup A with startup B."

"The real magic behind our ability to predict key milestones in company lifecycles lies in our unparalleled breadth and depth of knowledge," Megh Gautam, Crunchbase's chief product officer, said. "We've built features that are generalized, not tuned to any single dataset."

But Crunchbase is not the only firm doing this.

### **Other Platforms Are Jumping Into the AI Investment Game**

Research service Morningstar has released its generative AI platform targeted at asset and wealth managers that can "process natural-language queries, read and understand hundreds of thousands of reports written by Morningstar's analysts,

gather investment information from Morningstar's comprehensive databases, and then generate actionable, verifiable insights. Clients receive the answers they seek in seconds while getting time back to invest in higher-value activities. Clients can also layer their personal research, editorial, or support content to curate the platform's responses."

A stock-picking AI platform called Sentieo combines financial research, data management and analytics in one platform and allows its clients to track companies, analyze market trends and export data efficiently for further analysis.

"Portfolio managers can search through earnings call transcripts, SEC filings, and other financial documents to quickly spot trends, sentiment, and red flags," the company says on its website, and "with its deep document search capabilities and visual analysis tools, analysts can gain insights from unstructured data, enhancing decision-making stock selection and risk management."

Another platform called FinChat.io says it can "help quants with deep data analysis, market prediction models, and financial modeling, enhancing their ability to develop algorithmic trading strategies" all through its AI-leveraged tools.

Even OpenAI is in the game with ChatGPT-4. The company says that GPT-4 "excels in analyzing market trends and predicting investment outcomes. It is particularly effective for generating insights from vast datasets and automating trading decisions."

Although none — other than Crunchbase — of these platforms are claiming that they can always make predictions for picking investments, let alone with 95 percent accuracy, these deliverables don't seem far off. For now, most investment platforms are providing research using GenAI. But we can see where this is going. As these platforms become better trained and therefore smarter, many investment decisions will be made by algorithms without any human involvement. A lot of this is already being done with government bonds and stocks by mutual fund managers and larger Wall Street investment funds on behalf of their retail customers.

These tools will be used in conjunction with human investment analysts and serve as another expert voice in the decision-making process. They will do the grunt work — the research and number crunching — currently being performed by lower-level workers and will ultimately replace several of them.

But they won't completely replace humans in the investment process.

That's because startup companies are run by humans. And a significant part of any VC's investment decision is not just the product, or the model, or the potential for

scale up and exit, but who is actually running the company and does this person have the necessary personality traits for ensuring their return on investment? Without looking in that person's eyes and spending hours in a conference room, on a golf course or at a bar, it's impossible to truly understand the person — or people — being backed.

One thing's for sure: no matter how good AI gets at data analysis, it'll likely never reach that level of human judgment.

## **Are Your Female Employees Dubious About AI?**

As AI use proliferates both in our personal and professional lives, one thing is becoming clear: Women appear to be less inclined to use the technology than men.

### **Studies Show Many Women Are Dubious About AI.**

A 2022 Pew Research study found that women in the United States were more skeptical than men about some uses of artificial intelligence. The study found that women in the U.S. were less likely than men to say that technology overall has had a mostly positive effect on society (42 percent vs. 54 percent). In addition, women are less likely than men to say they feel more excited than concerned about the increased use of AI computer programs in daily life (13 percent vs. 22 percent).

“Gender remains a factor in views about AI and technology’s impact when accounting for other variables, such as respondents’ political partisanship, education and race and ethnicity,” the study’s authors wrote. “Gender gaps also appear in the amount of concern Americans express about AI programs being able to perform repetitive workplace tasks, make important life decisions for people and know people’s thoughts and behaviors.”

Pew’s research dovetails with other analysis. For example, research firm Appfigures found that men make up 85 percent of ChatGPT’s mobile users. A study from Axios found that almost half of the females they surveyed said “It’s not even possible” to regulate AI, compared to just 23 percent of men. The study also found that 31 percent of men said they would or do let their kids use AI products like chatbots “for any purpose,” but just 4 percent of women agreed. In fact, 53 percent of women would not let their kids use AI at all, compared to 26 percent of men.

Harvard Business School Associate Professor Rembrandts Koning, who has authored a research paper on this phenomenon, has noticed that fewer women use the generative AI tools that he and his colleagues at the Digital Data Design Institute at Harvard have created for entrepreneurs around the world. His research reveals that women are adopting AI tools at a 25 percent lower rate than men on average “despite the fact that it seems the benefits of AI would apply equally to men and women,” he says.

### **Why Are Women Dubious About AI?**

Anecdotally, I don’t see this. The women in my life — my wife, daughter, work colleagues and clients — seem to use AI tools as frequently as the men do. But you can’t deny the research, and maybe something’s there.

I'm not a psychologist, I'm not a woman, and I'd be out of my depth trying to understand why this is so. So I really shouldn't be giving reasons why women are dubious about AI. But that's never stopped me before!

Women, in my experience, tend to be more practical and less skeptical than men which means that newer technologies like AI may need some more time to truly be proven before they buy into their value. Women, I feel, are generally more risk-averse than their male counterparts and by being so would rather not share or rely on information from AI Assistants. Women are surely more nurturing than men — it's why so there are so many more females in professions like healthcare, veterinary science and education — and many may be wary of chatbots due to their robotic and insensitive nature.

I do believe that many women can see the writing on the wall. Using OpenAI's deep research tool, I asked it to list the 20 jobs that will be replaced by AI, and many of these jobs — proofreaders, bookkeepers, social media marketers, content providers, customer service representatives — are performed primarily by females. If my livelihood relied on any of these occupations, I'd be very wary of AI chatbots as well.

### **Employers Need to Wake Up to Their Female Employees' Concerns.**

All these things are important for employers to know. Why? Because according to recent studies, almost half of our nation's workforce is female. If our female employees tend to be more dubious — or even suspicious — of AI, this has an impact on our businesses. AI will be replacing many jobs in the not-too-distant future. We're already seeing this at companies like Klarna, Goldman Sachs and Morgan Stanley.

Over the next few years, AI will be a growing part of our business. Already, some reports say that as many as 57 percent of small and mid-sized businesses are using GenAI. Big software companies like Microsoft are introducing agents to do a lot of back-office work that will replace the tasks being performed by our staff. Robots are creeping their way onto the retail and factory floor, threatening the jobs of our workers.

Our workers — especially our female workers — are seeing this too, and it may be having a deeper impact on their psyche than we realize. As business owners, our employees perceive us as eager to implement these technologies as a cost-saving tool. They're not wrong. They do have a right to be concerned. Their jobs are at stake.

But not as much as some think. Business owners and managers do want more automation. We want AI. But most of us don't want to use this technology to replace our employees. We can't find enough good people! We just want more productivity out of our existing workforce, and, if AI can help, then that's an answer. But clearly our employees — particularly our female employees — are skeptical. And rightfully so. So what should we be doing? Communicating and training.

We should be leaning heavily into the AI features provided by our existing software vendors, and we should do this by investing more in training. We should involve our employees — especially key female workers — in the rollout, training and adoption of these tools. The more comfortable our people become with these tools, the less hesitant they'll feel about using them. They'll realize that they can be better, more productive and happier employees. Many will overcome their fears that the technology will replace them and accept it as a tonic to their stresses. Others will allow the technology to do their work and embrace the opportunity to learn more skills and contribute in other ways.

There could be good news on the horizon. Although women's adoption of GenAI has been historically half of their male counterparts, a 2023 Deloitte study predicted that the experimentation with and use of generative AI by women will equal or exceed that of men in the United States in the next few years.

Maybe that will happen. Maybe not. But to the men who run businesses — and according to another report from Pew, approximately 76 percent of small and mid-sized businesses are still owned by men — I say this: pay attention. Our critical female employees are telling us something important. They have concerns about AI. It's our job to respond to and allay these concerns.

## **I Went to the Microsoft AI Tour. Here's What I Learned.**

Last year, I attended the Microsoft AI Tour at the Javits Center in New York. I officially went to a few sessions, unofficially peeked into a few others, sat in on Executive VP Scott Guthrie's keynote, mingled, walked the floor, had a sandwich, drank three cups of coffee, hit the men's room twice and still made my 6:00 p.m. train back to Philly.

Microsoft did a great job. There were, like, a thousand people there. Probably more. Check-in was fast with a QR code for those of us who pre-registered. The event was free, and it included a continental breakfast and lunch. There were plenty of smiling staff. And plenty of perky Microsoft employees, giddy with the Kool-Aid they'd been drinking. My only disappointment with the event was just how scripted the presentations were, leaving little room for the presenters to add their own color. Oh well, sign of the times. Maybe the bots will do better when they run these conferences in a few years.

More importantly, I was there to learn about AI and how Microsoft — one of the world's largest tech companies — was going to change my life and my business with it. I learned a lot. Here are five takeaways.

### **Small and Mid-Sized Businesses Can Now Develop Microsoft AI Solutions.**

This used to be an impossibility. Not so much anymore. Microsoft has rolled out more than 1,800 AI models on GitHub (yes, even DeepSeek we were told with a wink), countless other no-code/low-code apps, tools to work with more than 1,400 plug-ins on Copilot Studio and an upgrade to Fabric that brings together data from multiple places including texts and images and gives even the most inexperienced developer the ability to write queries using Copilot prompts while building a “lake house” of information. In the hands of the right developer, this can be used to connect in real time and bring in and train vast hordes of data from other systems — ERP, CRM, HR, you name it, even custom databases — into a company's own LLM.

Businesses with the capital and know-how can then use this stuff to build everything from a human-like customer service chatbot to an internal system that makes recommendations for inventory planning, project management, logistics or how much drywall is needed for 10 new residential homes under construction.

How much capital? A lot. Even though these tools are affordable, the overall investment wouldn't be cheap. You'd still need a \$200K-per-year developer, along with a few external Microsoft consultants to use them all. But this was not an option before. Now it is.

### **The Microsoft AI Publicists Are Obsessed With the Word “Human.”**

Every presenter took pains to say how all these AI tools will enhance human productivity, improve the lives of humans and create better human workers because hey...it's all about us humans. Let's go, humans! We rock!

But only a small number of the human attendees at this event actually believed this. Why? Because when a Microsoft manager jumps into Guthrie's keynote (it was scripted, of course) to gleefully demo how a very, very human-sounding and -looking bot answers questions and helps a visitor buy camping equipment, we can all read the writing on the wall. And it's bye-bye, humans! Sure, this stuff is great for consumers, but we know the “humans” who actually benefit from this technology, and it isn't the customer service reps who are currently doing this work and will soon be out of a job. It's their former employers who will be counting the money saved. When will these big tech companies finally admit the truth?

### **Agents Were the Buzzword of 2025's Microsoft AI Messaging.**

Second to the word “human” was the word “agent.” They'll be doing everything for us, behind the scenes, underneath the bed, in front of our faces...whatever. I watched demos and presentations showing how agents will soon order products from Amazon, do payroll, send out e-mail pitches and go after malware. Microsoft is releasing a bunch of new agents for its Dynamics product lines this year, and this is just the start.

Of course, no business manager in their right mind will actually rely on these agents during this first go-around because only fools rely on a version 1.0 of anything Microsoft releases. But these will get better, more accurate and more reliable over the coming years, and this event made it clear for me that agents are the future of AI in business.

### **Microsoft's Own People Still Don't Trust Microsoft AI!**

In two sessions — and I will not disclose which ones because I don't want nice people to lose their cushy jobs — the audience and I watched with knowing glances as the presenters referred to how “brave” they (or a colleague) was by actually demoing their Microsoft AI application live. What? This is brave? Glad to know I'm not the only who feels that way!

If they're so brave doing this in a demo, how brave do their customers need to be when it's real-life data? To me, it's still evidence that these applications — while great and exciting for the future — are still not ready for prime time. Maybe that's good news for all those customer service reps who will soon be replaced once this technology actually works. It gives them time to find new jobs...or skills.

**Finally, I Can Confirm That No One Knows How to Pronounce Azure.**

It's the elephant in the room. And it begs the question: who thought up that name? How did Microsoft's image and brand team approve this? The Oxford Dictionary says that Azure means "bright blue in color like a cloudless sky," and I get the connection to Microsoft's Cloud platform. Bright, blue, cloudless, smooth, beautiful, etc. etc. But is it Az-ir or Az-ore? I heard it pronounced both ways by actual employees at Microsoft multiple times. Geez.

I joke, but the Microsoft AI Tour was not a joke. It was a productive day. Microsoft is putting out some serious AI stuff, and if you're running a company of any size, you're a fool to ignore it. Talk to your software vendors. Get training. Watch a few YouTube videos. Bring in a consultant. One thing's for certain: Your best competitors will.

## Cool Technology From CES That Will Help Your Business

The Consumer Electronics Show is, of course, geared for consumers. And there were some amazing products introduced recently. Like robo-vacuums that suck up gallons of liquids, batteries that can power homes for days, mighty gaming laptops and gigantic gaming monitors, facial and palm recognition locks for your front door, fully transparent TV displays and even outdoor BBQ grills that are so smart they take the fun of out of grilling.

But what about technologies for businesses? CES had them too. Here are 17 that are worth checking out if you own or operate a business of just about any size.

**Apple Vision Pro** - Visual Reality headsets are still just for fun and popular with gamers. But a growing number of businesses are using VR to do everything from provide training, analyze construction sites, walk through new homes and provide remote healthcare. Apple's new headset — when actually launched this year — will provide a better-quality and more-immersive experience. It will also be a new opportunity for app developers. It won't be cheap, but I bet it'll be worth it.

**TCL RayNeo X2 AR Glasses** - Will employees at the weekly management meeting wear Apple Vision Pro headsets? I don't think so. However, and at only 60 grams, these glasses are much lighter, less ridiculous-looking way to immerse yourself in a VR world and — gasp — maybe the Metaverse one day? Tentatively expected to launch soon, the glasses may be a giant step towards providing a way to be in a VR world without looking like a reject from the '80s band DEVO. We'll see.

**Generative AI by iStock** - Nvidia and Getty Images have teamed up to provide an AI-leveraged way to create images from text using an inventory of non-copyrighted content. This looks like a great tool for businesses looking to revamp their websites, build out their marketing stock and enhance their overall branding without breaking any intellectual property rules.

**Belkin Auto-Tracking Stand Pro for iPhone Tracking** - It follows you everywhere, and you don't even have to make eye contact. This is an excellent tool for remote workers, in-office meetings and for creators/entrepreneurs to step up their online effectiveness.

**Lenovo ThinkBook** - Want to work in Windows? Check. Want to work in Android? Check. This device detaches and switches between the two — Windows for the laptop and Android for the tablet. Separate chips and all. This is a nice solution that can be shared by employees who prefer different operating systems and further removes your company's need to be dedicated to just one platform.

**Nvidia Chat with RTX** - According to the chip manufacturer, Chat with RTX — which became available in early 2024 — “allows AI enthusiasts to easily connect PC large language models to their own data using a popular technique known as retrieval-augmented generation (RAG). The demo, accelerated by TensorRT-LLM, enables users to quickly interact with their notes, documents and other content. It will also be available as an open-source reference project, so developers can easily implement the same capabilities in their own applications.” Running AI on large language models can cause latency and privacy issues. Doing this on your own device or server can address those issues.

**Swarovski Optik AX Visio Binoculars** - First of all, these binoculars are about \$5,000 to buy, so I’m doubting your typical bird enthusiast will be purchasing them. But the potential is enormous, not only for people in the wildlife and animal science industries but for any business — contracting, construction, transportation, military - that in the near future needs to leverage AI and use binoculars to immediately identify objects at a distance.

**OpenAI Custom GPT Store** - Could this one day be as big as the Apple App Store? It’s certainly possible. OpenAI has launched its own marketplace of apps using ChatGPT and other of its technologies that can be downloaded and used by both individuals and businesses. Already there are countless apps to help with productivity, image generation, training, research and programming. I am definitely going to take a deep dive into this site soon and find some good ones for businesses, and of course this creates many opportunities for tech-minded entrepreneurs.

**Asus ZenScreen Fold OLED MQ17QH** - According to the company, it’s the world’s first foldable OLED portable monitor. According to The Verge’s Eric Born and Sean Hollister, the monitor “promises to be lugged around without breaking your back or bag and it may do just that.” They also say that “when you fully flatten the screen, the crease really does seem to disappear, and it feels quite portable, even if we wouldn’t exactly describe its heft as featherlight.” For designers, engineers and others who need bigger and clearer screens while on the move, this is a move in the right direction.

**DJI’s Flycart 30** - With Walmart announcing that its drone delivery now covers as much as 75 percent of Texas, there’s no question that drones are becoming a legitimate way to get supplies, products and other materials into the hands of recipients inexpensively and fast. The problems have been distance and power, and drone manufacturer DJI has taken steps to overcome these challenges. Its latest model — the The Flycart 30 — is “a beefcake of a drone” and can fly up to 10 miles with 66 pounds of cargo at a cost of \$42,000. Freight is a significant expense for

many businesses, and I'm betting that drone solutions like DJI's will help reduce these costs in the years to come.

**Gatik's Self-Driving Trucks Plus Goodyear Smart Tires** - Autonomous trucking — like the vehicles made by Gatik — is becoming more of a reality and could be an enormous cost saver for both trucking companies and their customers. So why not combine these vehicles with tires that are self-monitoring air pressure and other issues affecting their use? “The real-time data derived from intelligent tire technology not only enhances the safety and predictability of our autonomous vehicles but also enables us to maintain high levels of efficiency, reliability and delivery uptime throughout our operations,” said Gautam Narang, Gatik CEO and Co-founder.

**Wi-Fi 7 Certification** - Let's agree that all this stuff needs a fast Internet. Well, it's about to get faster. The Wi-Fi Alliance, a global network of all the companies that bring Wi-Fi to the world, announced that it has finally certified Wi-Fi 7, a significant upgrade. Many companies in the space, such as Airties, Boingo, Broadcom, RUCKUS Networks, Intel, MaxLinear and MediaTek, have been testing out the latest iteration of Wi-Fi which promises to provide “unprecedented capacity and spectrum efficiency to support far more connections and immersive applications” and will be “open-source, and hardware-agnostic so that ISPs can gain maximum flexibility and control over subscribers' home broadband experience.” All of this means a faster and more flexible Internet within the next 12-24 months.

### **Battery Toaster**

Use Case: productivity for on-the-go employees

It looks kind of like a toaster, but, instead of toasting bread, it reheats batteries. Five at a time are saved in the unit. So, when employees need a new battery, they simply swap it out in seconds and are on their way. It's fast and eliminates the need to remember to recharge and bring a portable battery pack. There are drawbacks, however. A phone has to have a case attached which adds clunkiness, and the cost — at about \$450 — can be a lot.

Though not ready for prime time, keep an eye on the paper batteries, like the one introduced at CES by a company called Flint. According to CNET, “they're fully flexible and can be shrunk down to the size of a coin battery or embedded in a smartwatch strap. Flint's paper batteries share a structure with traditional lithium ion batteries, but that's where the similarities end. Their key component is cellulose, which acts as a natural medium for ion transfer between the anode and cathode, a critical chemical exchange necessary for batteries to work.”

## **Rollable Laptop**

Use Case: eliminate multiple monitors

Lots of people use dual monitors on their job. But is there a way to reduce the cost? This laptop comes with a 14-inch display, but you're not limited to that. And you don't have to buy another monitor. You can just "roll" it with your fingers to provide — according to Lenovo — 50 percent more display space, which can help employees show two browser windows of the same size on the same monitor. It's vertical, but that should be OK for writers and developers, and the less spent on buying more hardware, the greater the cost/benefit.

## **A Large Rollup Screen**

Use Case: quick meetings and events

Speaking of screens, how about a "grand cinematic experience" using a 100-inch display that comes with 60-watt Harmon Kardon speakers and that rolls up quickly and then disappears into a professional-looking, furniture-like case. It's smart and easy to use and can help upgrade your presentations and meetings.

## **Smart Glasses With Built-In Hearing Aids**

Use Case: Productivity for disabled employees

If you have employees with mild-to-moderate hearing concerns, they can consider getting these cool glasses that amplify sounds based on where they're focusing. The glasses (which are not yet available in the U.S. pending FDA approval) are a more attractive and convenient alternative to hearing aids (particularly for those employees who already need glasses because why have more hardware on your head than you need) and can help them do their work faster and more efficiently. According to the company, the glasses' "advanced beamforming technology, coupled with open ears and natural sound, allows you to effortlessly catch up on sounds that may be missed, especially in noisy surroundings" and "not only offers comfort and convenience but also ensures high-performance sound quality."

## **Normal-Looking Smart Glasses**

Use Case: Smarter employees on the go

Halliday Smart Glasses

These glasses — introduced in 2025 — allow employees to get real-time translation, do searches, get script and presentation prompts, receive notifications, capture

audio and get assistance with navigation, among other time-saving assistance. The units have a 12-hour life and, different from the awkward and bizarre looking headsets that awkward and bizarre gamers wear, actually look normal.

### **Autonomous Farm and Construction Equipment**

Use Case: more work done with fewer people

While car companies continue to struggle with autonomous vehicles that can navigate city streets without running over puppies, many companies are making self-driving vehicles that can be productively used in warehouses and on farms. John Deere offers a bunch of diesel- and battery-powered autonomous tractors and trucks that come equipped with advanced cameras and sensors that enable one employee to do the planting, crop spraying, dumping and moving work of multiple workers.

CES was all about consumers. But if you're running a business, try some of these technologies. One or two may definitely help increase productivity.

## **A Successful Tech Venture Capitalist Shares His Thoughts on How AI Will Impact Your Business**

Run a business? Want to learn what technology is coming that will impact your business? Then do what I do and follow the activities of Emergence Capital. It's a venture capital firm focused on early-stage enterprise software companies and has been behind some of the most disruptive platforms used by your business and mine such as Salesforce, Box, Bill and Zoom.

Of course, most of the conversation around technology nowadays is about AI and how it will impact businesses. That's Joe Floyd's job. A general partner at Emergence, Floyd has spent over 15 years advising and investing in "rocket ship" startups like Salesloft, project44, LogDNA and other similar companies.

So how will AI impact your business this year and in the near future? Here are some of his thoughts.

### **Voice Is Ready for Prime Time.**

According to Floyd, the advent of reading models is here, and they are getting extremely good.

"Prior, you really couldn't have a full-fledged voice AI agent that sounded human," he said. "And now for the first time, you can, and it's a combination of sub-500 millisecond latency. These really human-sounding voices have the ability to reason, understand where you are in the conversation, and then actually have the appropriate response."

Floyd says that AI voice agents are now outperforming humans.

"They stick to the call script repeatedly, and they never get tired," he said. "They never have a bad moment. They're doing it at a rate that is higher than the average success rate for humans. They just execute."

All of this is happening very fast, according to Floyd, and the winning companies will be the ones that are laser focused on strategies like: "I'm going to be the best voice agent for mortgage servicing and mortgage sales" or "I'm going to be the best at healthcare scheduling."

"There are real cost savings for businesses using AI voice agents," he says. "The ROI is just undeniable."

## **Agentic Workflows Will Explode.**

Floyd acknowledges that AI agents are — obviously — a big area right now, and he's looking closely at companies that are building proprietary models using agents that are improving workflows faster.

“We're seeing a lot of AI startups and companies that are taking over a manual process with agents, like document ingestion or communicating with customers to answer questions or perform compliance,” he said.

Will these agents ultimately replace humans in the workplace? Floyd says it depends.

“For example, AI agents will help accountants do all the boring stuff that they don't want to do, so that they can actually have the interesting strategic conversations that they want to have — and also serve multiple customers with the same staff,” he said. “Smart companies are providing tools to create small language models that are hyper-tuned to do one thing, and a larger model can choose one of maybe 40 different agents to get a specific job done.”

Floyd is also seeing a proliferation of voice agents being used for sales and customer support.

“These are things that both enterprise and small and mid-sized business will definitely adopt,” he said.

## **A More Efficient Use of Infrastructure Is Coming.**

There's still seemingly an unlimited demand for data centers and server space that can't be immediately met. But Floyd doesn't think the need to build bigger and more data centers will continue in the long term. Some startups are focusing on making the data better.

“At some point, you're actually not going to need to build bigger and bigger large language models,” he said. “What we're seeing is the post-training of large language models starting to take a much bigger role than pre-training. Models are staying the same size but are being pruned, not tuned, to make them better, and there's more of a premium placed on the quality of data, rather than size of the infrastructure.”

## **AI Will be Taking Over the Desktop.**

Tech companies from Google to Anthropic are already introducing AI applications that can take over a device and perform Web browsing activities with minimal human involvement. Floyd says this will continue to evolve over the next few years.

“You can imagine a world where there’s a website where humans can read and there’s also a website version that is machine optimized and readable, and then the software just goes to town without human involvement,” Floyd said. “As part of the operating system, an AI application is able to capture anything on the screen, read it, process it, and have it accessible to a large language model. It will have its own small model built in, which means that my data’s never going out to any public servers unless I allow it to. So I can say, ‘Hey, this requires a level of understanding that isn’t capable of the small model that’s running on my CPU. Go ahead and send this information out. Get me a better answer.’”

### **Quick Building Apps Are Starting to Come of Age.**

Just a few years ago, new applications from Web-building platforms allowed small and mid-sized businesses to create their own websites for the first time ever and minimize the need to hire an expensive Web developer. But these were still complicated, and the average owner was still not really able to use them. Floyd’s excited by new agents that can enable those same business owners to do this by talking in natural language and building websites on the fly.

“This is only the start,” he said. “Web applications now have their own databases that can enable small and mid-sized business owners to build their own applications — like a CRM or project management system — in the same way.”

Using one of these platforms, Floyd — who says he hasn’t written a line of code in “20 years” — was able to build his own CRM application “in under 30 minutes!”

### **Old-School Vendors Are Partnering With AI Startups.**

Floyd is not confident in the ability of legacy software vendors to build their own AI functionality.

“I think they will have absolute garbage, and I don’t think any of them will do anything interesting,” he said. “It is already being proven out that the startups are simply producing better, more highly tuned solutions.”

So what are older vendors doing? According to Floyd, the smarter ones are partnering.

“AI startups need data and distribution which the old companies have,” Floyd says. “And you’re seeing more of these partnerships than I think you ever saw before. I don’t think the legacy vendors will be able to build good AI solutions themselves. Some will be able to buy or partner their way into decent solutions.”

### **A Final Warning for Business Owners.**

Floyd warns that, if you're running a company and you're not adopting AI, your company just won't be around in five years.

"Even if you are a nuts-and-bolts company that you think has nothing to do with technology, your competitors will adopt it, and they'll out-compete you," he said.

Floyd says that small and mid-sized business owners are the ones who need to pay attention to AI most.

"AI agents are perfect for a lot of manual uses cases — like order entry, inventory management, answering phones, sending invoices, collecting or disbursing payments," he said. "One company I came across recently is helping physical store owners parse invoices for goods ordered and input that data directly into inventory systems. This is saving owners hours of manual work every week, and they are doing it at a fraction of the cost. I think there will be lots of use cases like this for owners and employees of these small and mid-sized companies."

## Why Google's NotebookLM Is a Killer App for Small and Mid-Sized Business

Previously, I wrote that Google's NotebookLM is "definitely not open for business yet." I've revisited. And now I can report: It is. Last year, it was shaping up to be the year's killer app for small and mid-sized business. Here's why.

It is your company's LLM.

For starters, NotebookLM is a mini-LLM for your business. It's simple to use. You and your team create folders for different purposes and then upload documents (mainly PDFs and text), connect other sites or link to YouTube videos. Yes, there are data limitations. But almost instantaneously, those data are available for anyone you choose to query with clear citations for the source of its responses. Google promises that data won't be used for any other purposes.

It uses external data.

Second, the data is used by NotebookLM in conjunction with other external data. So, if you're linking to outside websites or including references to external resources, NotebookLM recognizes that and brings that information into play as well as the internal information you provided.

It's an internal chatbot.

Third, it acts like any popular chatbot. Users can add manual notes to the folders which are then used as part of the LLM. Chats are stored. Folders can be shared both internally and externally. The other thing I appreciate is that its interface is — unlike many applications I use — simple. It's not full of useless options, menus, taskbars, icons and other garbage that gets thrown in front of me by software makers with the intention of making my life easier but instead complicates what I'm trying to do.

It speaks.

Finally, NotebookLM can converse with your team both by text and by voice. Much has written about its ability to instantly create podcasts based on the data you've uploaded, and that's fun. But, in a serious context, your users can choose to hear a conversation about the data with two human-sounding "hosts" instead of reading. This is useful not only for those who may have disabilities but also for those who are driving, jogging or are just better at consuming data when it's spoken to them instead of reading it.

How I'm using it now.

I'm just an independent user and am waiting to be accepted into the pilot program for NotebookLM Business, which promises more enterprise features and is already used, according to Google, by more than 80,000 organizations. However, I've still been using NotebookLM for my business in these ways.

**Job searches.** I've been looking for a developer to hire and recently placed an ad on a job search site. Different from my experience last year — when I attempted to do the same thing — I'm now able to upload every resume I receive and have NotebookLM perform analysis. I've asked it to create tables for me to import into my spreadsheet. But, more importantly, I've asked it to rank the most- to least-qualified candidates based on the job description, and it's helping my team and me to qualify those candidates. Already, it's saving me hours.

**Financial analysis.** I've uploaded my last few years of financial statements to a separate private notebook and asked it to analyze results and make recommendations. It's identified trends and anomalies that I hadn't noticed before. It pointed out to me expenses that were much higher than in years past and revenue categories that had significantly declined. I haven't uploaded my company's tax returns yet, but I plan to and then ask for tax advice, although, of course, I'll run any responses by our outside accountant.

Now that I'm sufficiently satisfied that NotebookLM is reliable and can work for my business, here's how I plan to use it going forward.

**Proposals.** I plan to upload all the proposals we've done for every client and prospective client over the past five years. That way, my team and I can query our proposal history for fees and services offered and answer any other questions for future proposals where we've had to dig into the past to find what we did before.

**Contracts.** I plan to upload all the contracts we've done with our clients over the past five years so my team and I can use that data to not only identify trends in what we did but also answer pricing and service questions.

**Policies.** We're a very small company, so it's not like we have a human resources bureaucracy. But, like any company, we do have our policies. My plan for my business — and to recommend to my clients — is to upload all of our policies (PTO, ethics, discrimination, hiring, social media, etc.) to NotebookLM so that, instead of having to answer questions about these policies, I can merely direct my employees to the relevant notebook let them get their answers on their own.

**Customer and vendor invoices.** When we bill a client for services, we send them an invoice in PDF format. When we receive invoices from our suppliers and contractors, we also get them either within an e-mail or in PDF format. Going forward, we're going to start uploading those invoices to separate notebooks, so, instead of having to dig into my accounting system, my team and I can quickly ask NotebookLM about customer and vendor billings.

Why not ChatGPT?

You may ask why don't I just do this with another chatbot like ChatGPT, Copilot or Claude? The answer is that I probably can. But we're a Google shop and use Workspace, Gmail, and other Google applications, so this makes the most sense and positions us for future integrations that the company promises. I'm also sure that, as all these chatbots mature, they'll be going head-to-head with similar functionalities and charging businesses for the privilege of using their services.

Will Google NotebookLM make sense for my business?

For NotebookLM to really make sense, it can't add more hours to my day, and that's my biggest concern.

To use it for proposals, for example, I still have to first enter data into my CRM system. Then generate the proposal. Then send the proposal to the client. And then take the extra step of uploading the proposal to the appropriate notebook so that my team can then access and query it.

My question: when will Google eliminate these steps? Do I really need to save these things as files anymore? Do I need to subscribe to OneDrive or Dropbox and store files in my folders on my device? Can't my CRM save the proposal directly to NotebookLM and can't NotebookLM be smart enough to "create" a file for me based on my instructions that can then be e-mailed to the client?

I think this will happen. But not right away. However, I'm not complaining. While big companies are creating their LLMs to do customer service, offer financial advice, monitor their employees or analyze potential deals, I'm happy to create my own little LLM to offer better and more accessible information for my team to help me run my business better. NotebookLM is doing that right now. It's shaping up to be a killer app for small and mid-sized business.

## **How Agents Will Disrupt Small and Mid-Sized Business**

Surveys are touting the “high adoption rates” of AI in small and mid-sized businesses. But this is just hype. Most of my clients aren’t really using AI like their much larger counterparts. But that changed last year. Thanks to a wave of AI agents, small and mid-sized businesses were finally able to start automating with AI like big companies are doing.

While corporate brands like Klarna, T-Mobile, UBS Warburg and J.P. Morgan were spending millions to create LLMs that can do everything from completing customer service inquiries, listening in on customer interactions, transacting investment purchases and behaving like human wealth managers, small and mid-sized businesses last year were mostly tinkering around with generative AI Assistants like ChatGPT and Claude or toying with Microsoft Copilot and Google’s Gemini for Workspace to help them write better e-mails or answer basic questions.

In the past, the AI story was big businesses building big AI applications. That’s because small and mid-sized companies couldn’t afford to build. But things changed. Instead of building their own applications, small and mid-sized companies tapped a wave of AI-enabled software that will far surpass the capabilities of the chatbots we’re now using. They’re called AI agents.

An AI agent takes generative AI to the next level. It doesn’t just generate a response or an e-mail or a document. It actually does something. It performs tasks. It initiates transactions. It fixes problems. It behaves like a human.

Microsoft, for example, last year rolled out 10 agents for its Dynamics 365 customers. These “assistants” will better qualify leads by conversing with prospects, confirm sales and purchase orders, reconcile invoices in one ledger to cash receipts in another, approve expenses, resolve issues, close tickets and schedule field service agents. The company plans “many more agents” in the near future.

CRM giant Salesforce is introducing SDRs (sales development representatives) and Einstein Coach agents that will also qualify leads before a human interacts, schedule meetings and then offer a video likeness of a person resembling the lead to help the salesperson rehearse their pitch through role-playing and by providing competitiveness analysis before actually conversing with their actual human target. According to the company, “The SDR gets you meetings, the coach helps you get better at your pitch.”

According to Intuit, which dominates the small and mid-sized business accounting software world, its soon-to-be-released agents will be “bringing together the power of GenOS, the orchestrator, large language models, GenSRF (Security, Risk and Fraud), and the UX experience, and it’s tying all that with what people really want, which is the ability to have work done for them.” Its financial agents will analyze a company’s cash flow and then pay bills accordingly. Those same agents will digest and understand e-mails, documents and images to automatically process invoices and apply cash.

In the healthcare world, chipmaker Nvidia has voice-enabled AI agents that will assume the role of nurses at a much lower rate per hour. In the software development world, firms like You.com have raised money to offer their “research” and “genius” agents that can retrieve reports and solve complex problems and better understand complex scientific concepts.

For both consumers and small and mid-sized businesses, both Anthropic and Google have announced new agents that can literally take over a device and then perform various tasks like Web browsing, button clicking and text input to perform any task that an employee normally does (e.g. “book a flight on this day and this time” or “order more office supplies” or “submit a customer service complaint”) with a single command.

Last year, small and mid-sized businesses weren’t just using AI to “generate” a response to their queries. They were leaning on AI agents to actually do something with that information.

The big worry, as always, is people. Although none of these companies will publicly admit it, their agents are doing the tasks that humans are doing, which obviously means that less humans will be needed.

For business owners who are already facing labor shortages and struggling to increase their company’s output and meet their customers’ demands without increasing their overhead, agents will be useful. In an economy challenged by demographic declines and immigration hurdles, they’re a godsend. And until these agents are paired with technology like Google’s Project Astra and robotics made by companies like Boston Dynamics and Agility Robotics, warehouse workers are still going to be in high demand. But that won’t take too long — probably a couple of years.

Should employees be concerned? Only the ones who don’t embrace this stuff to make themselves more productive and valuable.

The reality is that agents are finally going to start moving AI from the corporate boardroom to Main Street this year. It won't happen immediately. They won't work as well as promised (when does a new technology ever?). But rest assured that, like the Cloud, mobile apps and other technologies, our software providers will be pushing their customers to use their agents, and my smartest clients will do just that.

## How AI Is Killing the Harvard MBA

A recent study revealed that applications to MBA programs increased 12 percent last year, with finance concentrations continuing to be the most popular. To those MBA seekers — particularly those from Harvard and other fine institutions seeking their fortunes on Wall Street — I say this: buyer beware. Your MBA might not help you get that lucrative job. Why? Because AI is already killing your prospects.

Wall Street has its allure. From Gordon Gekko and Jordan Belfort to Logan Roy and Bobby Axelrod, Hollywood and the media have glamorized the wealthy who have conquered the investment banking world. The potential for riches has attracted the very best and brightest MBA students from Harvard, Stanford and other elite universities. Starting salaries at these top firms are \$150,000. But the costs are also high. Up until now, if you're willing to give up your life, blood and soul to your firm, you would have a chance — a chance — of sharing in the riches.

But things have changed. AI is seeping in. It's being used right now by those very same firms to kill off the vast majority of people they employ, which include many of those hopeful Harvard MBAs.

Goldman Sachs, for example, has funneled millions into a new LLM that is now used as a “copilot assistant” for its investment bankers. The AI-driven application searches through extensive public and proprietary documents to provide answers and extract analysis, translates multiple languages and summarizes data from millions of files.

According to the Wall Street Journal, the internal platform allows Goldman to “to fine-tune the models with its own internal data in a safe way and that complies with regulations.” Goldman employees can “access the platform directly to interface with various models” that can “answer questions and extract analysis.”

Investment banking giant Morgan Stanley recently introduced its “AI@Morgan Stanley Assistant,” a friendly name for this job-killing app that “provides quick access to Morgan Stanley’s intellectual capital.” Using OpenAI’s large language model architecture, the firm’s assistant quickly navigates through hundreds of thousands of research reports, takes notes during client meetings, summarizes key points and even sends automatic updates and tasks to attendees, including clients.

J.P. Morgan Chase is using AI for wealth management, consumer banking, fraud prevention and customer service. Its “ChatCFO” product is a tool for its clients to use to access the data they need to run their companies. Its “IndexGPT” application is “an AI-powered tool for thematic investing, using natural language processing to

generate investment baskets.” AI is being used at the firm to help its advisors make recommendations and summarize meetings and its banking group to determine “optimal locations” for new branches and ATMs using GPS and demographic data.

UBS has created an AI model for its Mergers and Acquisitions group that scans hundreds of thousands of target firms in seconds, generates buy-side ideas, identifies potential buyers and even highlights companies that are potential targets of activist campaigns which may be an opportunity...or a minefield to avoid.

These are just a few examples. Just about all of the big name investment banks and venture capital firms — from Citigroup, HSBC and Barclays to Sequoia Capital, Andreessen Horowitz and Tiger Global Management — are investing in startups that are building or buying applications and infrastructure and that can quietly sift through vast amounts of data to discover the next big startup, assess the financial health of their investment targets, determine market potential, and perform predictive analytics and decision support. These applications also have algorithms to forecast success rates and make quicker decisions.

Already we’re seeing the future. One report says that AI could also make the field harder to break into and alter the skills required for entry, with some banks testing tools that could reduce some junior banker tasks to seconds from days. Even Citigroup admits that AI could displace more than 50 percent of banking jobs.

What gives pause is that these applications are just starting. Some are less than a year old. Project yourself ahead just a few years. A single AI application will easily perform the research, calculations, analysis and problem solving that dozens — even hundreds — of high-paid Harvard MBAs have been doing on Google and spreadsheets for years.

Firms like Goldman Sachs and UBS can not only save thousands of hours of time using AI but will be able to make better, more profitable decisions. Why hire a Harvard MBA when you can have a robot do the work in their place and do it better, round-the-clock and without the need to cut holiday bonus checks?

This is what these firms are all about. They’re driven by math and data and profits, and, if technology can put a buck more in their partners’ bank accounts, it will be leveraged. Can’t blame them. Capitalism and profiteering start in lower Manhattan. God Bless America.

Of course, some humans will stick around. These will be the very smart and select number of MBAs who will be driving these applications and using them to profit themselves. They’ll recognize the technology’s power, jump on new ideas and

become its master. And Harvard and other top business schools have a long history of recognizing and adapting to trends to churn out valuable graduates, so it's more likely that their programs and students will adapt and evolve to meet the needs of the market. It will be interesting to watch.

## **Small and Mid-Sized Businesses Aren't Using AI Like You Think — Here's the Reality**

According to a new study from the U.S. Chamber of Commerce, nearly every small and mid-sized business — 98 percent of us! — said they are “utilizing a tool that is enabled by AI,” and, of these tools, 40 percent said they were “using generative AI tools like chatbots and image creation.” When one reads those numbers, you immediately think: Wow! Small and mid-sized businesses are really leaning into AI, right?

Wrong.

There are more than 30 million small and mid-sized businesses in the U.S., and I'm sure there are more than a few intrepid entrepreneurs who are leaning into AI apps and tools and platforms to help them run their businesses. They are pioneers. They're probably solopreneurs or run very small and mid-sized companies, where there's low risk if something doesn't work or “hallucinates” (which is another word for AI not working.) They're geeks and gamers and enjoy monkeying around with technology.

But most small and mid-sized business owners aren't like this. They run pizza shops and gas stations. They lay bricks and put up drywall. They sell parts to other businesses and provide professional services. Seven million of us have employees and have been around the block for a while. We know not to trust anything new from Silicon Valley until there's been enough time for testing.

Based on my company and my clients, I can attest that small and mid-sized businesses were definitely not substantively using AI in the past few years. But that doesn't mean we're not intrigued. We are. For us, AI is a way to keep overhead low and get more productivity from our existing employees. We know AI will substantially change the way we operate our back office. We can see how AI will leverage new machines — robots, drones, headsets — that will make us much more efficient and profitable. But not yet.

Ask any business owner and they'll tell you that “utilizing a tool that is enabled by AI” likely means the odd query using ChatGPT, Gemini, Anthropic or another chatbot. These platforms oftentimes provide good but not perfect responses and still cannot be relied upon. We understand the potential. But no one's taking them seriously so far.

A few unfortunate souls have been tinkering with Microsoft Copilot or Google Gemini in their office systems. Spoiler alert: neither works very well right now.

They lock up. They spin and spin with no results. They provide wrong or inaccurate answers. They sometimes disappear and then mysteriously reappear on our screens. But, like the chatbots, we also understand the potential of these tools. They will obviously grow better in the future.

Previously, small and mid-sized business AI utilization was mostly allowing a smattering of employees to try out a few apps to pretty up their profile photo, review a contract or transcribe an online meeting. Sure, technically this means “utilizing a tool that is enabled by AI.” But, in reality, it’s more like playing with toys that use a little bit of AI. We’re certainly not relying on this stuff for our core operations.

And can you blame us? Most small and mid-sized business owners — myself and my clients — would never trust AI to automate our internal processes. That’s because few of us actually have processes! And even if we do, we know that using AI would be a disaster since our databases that would drive any automation are typically inaccurate, incomplete and unreliable. My clients are also very concerned with the privacy and security of their data. We’re not sure we trust Sam Altman or Mark Zuckerberg when we use their Cloud-based AI offerings or that legislation passed by politicians who barely know how to plug in their TV sets is going to truly offer us protection.

Up until now, the real AI game was with large companies, not small and mid-sized businesses. Big companies like Klarna, Taco Bell, Walmart and many others were spending millions of dollars licensing LLMs from OpenAI, Google, Mistral and others. They were creating custom, internal AI-driven applications to perform autonomous customer service chats, listen in on employees’ conversations, generate countless investment scenarios, talk to customers on the phone and replace shop assistants with virtual assistants. That was how AI was being used then.

So don’t believe the hype. Small and mid-sized businesses aren’t really using AI...yet. But as infrastructure builds, developers get more experience and LLMs proliferate, we know that the software companies that provide the technologies that underpin our core operations — accounting, CRM, inventory management, HR — will be rolling out lots of AI functionality for us to enjoy. This will happen in the next few years. And small and mid-sized businesses will adopt. But for now, we’re just playing.

## **This Two-Minute Video From Google Shows You How AI Will Soon Turn Your Company Upside Down**

Whenever clients ask me how AI is going to impact their business, I always do the same thing: point them to a video from Google. It's only two minutes long. But if you're a business leader and want to know what's coming, it's a must-watch.

The video shows a Google Project Astra developer who points her smartphone at different objects and the "agent" — a Google AI application — explains what it's seeing. Very (and eerily) accurately. When asked, it points out a speaker that makes sounds, it creates an alliteration by looking at a group of colored pens, it immediately reads code from a screen and explains what the code is doing, it identifies the location outside her office window as Kings Cross, London and it even remembers where she left her glasses.

It's seeing everything. It has memory. It understands its surroundings. It knows the difference between a pen and a speaker.

According to Google, the "agent takes in a constant stream of audio and video input. It can reason about its environment in real time and interact with the tester in a conversation about what it is seeing."

This is real stuff. This exists. Imagine taking the phone she's holding and inserting it into a moving robot or a car or a plane. Or a missile. Or a drone. That's what's already here.

Some of this AI technology continues to trickle into the mainstream. For consumers, Google Maps can immediately identify where you are with a camera and point you in the right direction for walking, and Google Lens can immediately tell you about objects just by taking a photo. Apple's latest iPhone can see and describe things too. ChatGPT 4o is giving fashion advice and tutoring children. It's amazing, and it's still early days. Particularly for businesses.

But just you wait. Imagine a device — any device — that's able to use a camera to see and then understand what it's seeing. And imagine these devices have access to your company's internal accounting systems, files, documents and other data, as well as the Internet and any external data services where you have a subscription (start budgeting for that too).

Imagine pointing your device around your warehouse and it telling you what inventory you have in stock, when it was purchased, what customers use it, what condition it's in and whether it thinks you should order more based on prior levels.

Or a device that points out potential safety issues or OSHA violations. Or which employees are working on what machines and whether their skill set is right for the job.

Agents will drive autonomous forklifts and material carriers and power robots to lift things on and off skids. It's like having the smartest, most informed warehouse worker walking around your facility making sure everything is ship-shape.

Or say you're running a construction project. You'll have an expert project manager inside of a device — a drone, for example — that's checking on project progress 24/7 in all conditions and comparing to estimates and timelines. And checking on delivery of products and identifying that the materials received look right. That same device will help to identify safety issues, count inventory on site and visually inspect the quality of new structures.

Retail store and restaurant managers will be able to do the same with kitchen staff, inventory and managing capacity just by holding up their phones. Flight attendants can walk down the aisle of a plane, and the agent will be able to identify all passengers along with their status and potential health concerns.

The agent will be part of drones that fly autonomously around properties, vehicles that transport materials within a warehouse, robots that pick up boxes from a shelf and put them on a pallet, security cameras that take action on potential breaches and equipment that senses high humidity, shaking or other maintenance issues. The agent will leverage new AI-enhanced hardware to process what it sees and make decisions fast.

Since OpenAI released ChatGPT in 2022, there have been countless pundits prognosticating about the "future of AI," and for my clients none of this is real life. It's like watching an episode of Star Trek and acknowledging that, yeah, someday we'll be able to tele-transport ourselves to different places. But that day's nowhere near yet.

But this is near. Very near. Just take a look at the Project Astra video. This isn't the future. This is the present. This is now. This technology exists.

Google, Apple and other big techs won't be developing all these solutions. They'll be licensing their systems out to other tech companies who will be doing this. If you're running a business, these are the companies that are selling and supporting your current software and hardware platforms, your machinery and equipment, your communication and security systems. They're the ones who will be incorporating

this stuff. Talk to them. If they're not leveraging this existing technology — or have plans to — you'll need to find tech partners that are. Before your competitors do.

## **Eight Great AI Business Apps That Probably Won't Be Around Two Years From Now**

In 2007, the iPhone's introduction spawned an avalanche of mobile apps. When OpenAI introduced ChatGPT 3.5 to the public in 2022, the same thing happened: a proliferation of apps, tools and gadgets that use generative AI to accomplish certain business tasks.

Most of the mobile apps from the iPhone launch era are no longer around. It will be the same with today's AI apps. That's because these things usually take one of four roads.

A very, very, very few will actually scale into something big and become a genuine platform. Think Slack or WhatsApp or Square, which all started out as much small and mid-sized mobile applications and evolved. Some AI apps will get purchased by a bigger tech company and rolled into their offerings. Other larger software companies will simply write their own AI apps that replace the existing ones. A handful of these apps will stick around but will recede into the shadows as a niche tool with a small and mid-sized fanbase.

You can argue with me. But, in the end, 99 percent of the AI applications you hear about today won't be around in just a few years. It's not that they're not good. It's just Darwinism. Here are eight examples.

**Otter** - This is a great application that uses AI to monitor meetings, transcribe conversations, summarize discussions and create actions. Does anyone doubt that Microsoft Teams, Zoom or any other more dominant meeting platform will offer these same features? Most already do or are rolling out these features. Why get Otter when your existing meeting application already provides this functionality?

**Profile Pic Maker** - There are countless AI apps that promise to take a standard photo of any schlub like me and turn them into Brad Pitt (or at least a better version of themselves). Sounds impossible — particularly in my case — but it happens. I point out Profile Pic Maker because it's one of the best of them. But c'mon — as if this won't be built into the next camera app on your device? Of course it will.

**Eightify** - This is another great AI platform that can take long videos from YouTube and summarize them, saving users hours of watching time. So why doesn't YouTube just do this? Maybe it's because the longer someone watches a video, the more ads they watch, so that's a disincentive. Until YouTube makes this part of its paid offering or YouTube TV. Sorry, but I don't see this type of technology as a stand-alone long-term play. Perhaps as a niche survivor.

**Xembly** - I love this application. It uses an AI assistant to schedule meetings, navigate conflicts and create agendas. Among other powerful features, the platform literally lets users do this just by chatting with it or sending a message through Slack and then it finds the time on everyone's calendars. There's no question that this is a problem needing to be solved, and Xembly does a good job solving it. Until Microsoft, Google, Slack and all the other larger customer relationship management (CRM) and workspace app providers just build this into their own platforms — or buy Xembly.

**Rask** - This app converts videos into 130+ languages in a matter of minutes. Very cool. Will YouTube offer this feature? Hmm...130 languages plus more viewers in more countries equals more eyeballs and...ka-ching...more advertising dollars. Seems like a no-brainer. Or otherwise, will a larger video production platform — say Adobe — do the same? Of course they will. Even so, this could still survive as a niche product for video people who are fans of a certain type of production software that doesn't offer this functionality out of the box.

**Lavender** - Because I'm in the CRM world, I've played around with Lavender, and it's fun. The software will "coach" you to write better e-mails. It'll score the e-mails you write and offer improvements and personalization suggestions. "Become an e-mail wizard!" the company promises. "Level up your team! Make e-mail magic happen!" As if Salesforce, Zoho and every other major CRM player won't just do the same? It's only a matter of time.

**AskJack** - Want to create a large language model for all your company's documents and files? This way, you can train your LLM so that your employees can ask it anything about your policies, procedures and rules and get accurate and consistent results. That's what AskJack will do, and this can apply to human resources, operations, help desk, customer service and legal departments. But wait...both Microsoft and Google are already doing this by creating LLMs out of a company's e-mails, calendars, OneDrive and Google Drive documents. Within two years, any Office or Workspace user will have the same functionality that AskJack offers.

**SpeedLegal** - Here's a specialized LLM for contracts. The AI application bills itself as a "negotiation partner" for both lawyers and non-lawyers that will help identify risks, explain legal jargon, make tailored suggestions and give other insights about any legal documents or contracts you allow it to review. Assuming the output is reliable (I admit to not testing it yet), I wonder long term who will use this tool? Won't this kind of thing be included in a mainstream law firm platform like Clio or Smokeball or be made available to consumers via bigger players like LegalZoom and LegalShield? Probably so.

Agree? Disagree? To be clear, these are great apps, and I highly respect the people who developed them. I'm also assuming that a few of the app makers aren't looking to be the next Snapchat — they're doing what they're doing to create new tech and make a few short-term bucks. Good for them. But for the rest, I'm just hoping they've got a good exit strategy. Because things in the AI world are moving fast, and most won't last on their own for very long.

## **AI for Manufacturers: Hype vs. Reality**

To write this column, my plan was to research how AI was impacting manufacturers so far. Spoiler alert: get ready to be underwhelmed.

Here's what I found: There's a lot of hype and a lot of rosy predictions right now. A writer at TechTarget lists "10 AI Use Cases in Manufacturing." Another blog talks generally about "The Increasing Use of Technology in the Manufacturing Industry." Research firm Forrester paints a picture of the "future" for manufacturing AI. A manufacturing group's site lists the "manufacturing technologies that are shaping the industry."

It's all very general, and it can be exciting. But it's not now. What about now? What about the next 12 months? What's hype and what is the reality of AI for manufacturers now? Here's what I've learned.

### **For Starters, It's a Big Company Thing.**

For all the hype about AI, it's still a very big company thing. Sure, there are surveys like one from GoDaddy that said that small and mid-sized businesses were getting benefits from AI. But this is literally scratching-the-surface kind of stuff. While small and mid-sized businesses are using simple Generative AI products to write blogs or create policies, big companies like Klarna are spending millions of dollars building AI chatbots that are replacing hundreds of customer service reps. BMW and Amazon plan to introduce "humanoid" robots powered by AI brains to "free up" workers, and Tesla is almost halving its production time to build cars using AI-powered 3D printers. Corporate investment in AI "is surging," says the Wall Street Journal.

The list goes on. AI is a big company game right now. Eventually, these applications will become commoditized and affordable for the rest of the world. But not this year, for sure.

### **Today's AI's Manufacturing Solutions Are Custom Solutions.**

There are lots of apps for creating profile pictures, writing essays and concocting recipes. But there are no significant "apps" for manufacturing worth mentioning right now. There are no big advances in AI functionality built into mainstream manufacturing, ERP, order entry or inventory management applications. As I wrote above, this will happen. But not yet. Corporations with big budgets are spending big with firms like Mobidev, Innover, Pleora Technologies and many others are in development to build their large language models with integrated data that can be

custom trained on the organizations' internal processes and proprietary information.

Someday, the software companies that serve most businesses will have these AI-driven tools available as part of their feature set. But, if you want software that truly leverages AI in your manufacturing business today, you're going to need to build it yourself.

### **Manufacturing AI Is Leveraging Existing Technology.**

AI isn't creating anything new right now on the plant floor. Instead, it's being used to upgrade existing software and hardware. A quoting solution that's been around for decades is using AI to construct better queries on its existing architecture. A robot that's been used for sorting and palletizing items on a production line is now getting an AI upgrade to better identify and adapt to those products. An existing drone line can now do more independent things because an AI drives it. Big brands are now slapping sensors on the machinery and equipment they're already producing to monitor vibrations, humidity, heat and several other factors that are reported for maintenance or self-remediated.

The hardware and software are the same. But their brains are getting an upgrade.

### **GenAI Has Its Limitations.**

Generative AI is certainly powerful. But it's just getting started. We're only in the first year or so of the LLM phase, where models are being built, tested, trained and — most importantly — litigated. GenAI is limited because it's immature. It also carries a lot of risks ranging from hallucinations (getting it wrong) to misinformation to losing control of itself. Today's AI applications are built around the GenAI model and — a year and a half after OpenAI's groundbreaking release of GPT 3.x — they're already looking old. Even OpenAI's CEO Sam Altman recently admitted that the current version of ChatGPT "kind of sucks" when compared to new releases on the horizon. Both Altman and chipmaker Nvidia's CEO Jensen Huang have said that Artificial General Intelligence (AGI) — the holy grail of AI where the software performs is as good as, if not better, than humans — is only a few short years away.

Altman and Huang like to downplay the hype around AGI, but I believe that, when this happens, AGI-driven machines and robots will be able to truly do what humans do and with these capabilities will significantly disrupt everything from assembly to formulations to materials movement on the shop floor.

### **The Best Place to See AI Is on the Road.**

It's still early days for manufacturing AI. But hardware companies, software companies and equipment makers are investing heavily. And for manufacturers, the best place to find out what's coming is to talk to your vendors...and go on the road. Visit conferences like FABTECH, PROMAT and MODEX — among the many others in the manufacturing space. Go to your industry trade show this year. Stop by the exhibitors' booths.

In the past, you could miss one of these events every year or two. But not this year. This year, companies are quickly rolling out new products and upgraded technologies that are leveraging AI, and the best way to get up to speed on them is to go and watch them in action.

That's the AI reality of AI for those in the manufacturing space.

## **From Microsoft to Nvidia to Boston Dynamics...Here's How AI Is Being Deployed on the Shop Floor**

If you own or manage a manufacturing, distribution or warehousing facility, it's time to get serious about artificial intelligence. That's because the technology is starting to mature into something that is actually generating ROI. Software and hardware vendors are rolling out AI technologies both independently and as part of their existing products, and leveraging these technologies is critical for increasing productivity, reducing overhead and increasing profits.

### **Robotics**

Manufacturing and distribution businesses of all sizes are investing heavily in AI-powered robotic technologies for the shop floor. Walmart is rolling out autonomous forklifts driven by AI software. Amazon is deploying hundreds of human-shaped warehouse robots to lift and move packages as well as independent drones to monitor traffic, safety and workflow. A German company called Robco is lending out robots that perform lathe turning, laser engraving and palletizing (the robots can then be reconditioned and used for other customers as needed). Other robots are being used in food processing and baking operations to independently mix ingredients and then load finished products into cartons and cases.

Some think that humanoid robots are just in the movies. But that's not the case. They're appearing more frequently on the shop floor — alongside and in lieu of workers.

For example, 1X creates an abundant supply of labor via safe, intelligent humanoids for the manufacturing floor. Agility Robotics is pumping out tens of thousands of humanoid warehousing robots. Boston Dynamics now makes an electric-powered version of its humanoid robot Atlas. Apptронik's Apollo is a general-purpose humanoid robot designed to work in the plant and the office.

Unbox Robotics offers a bunch of AI "swarm robotics" to "accelerate the parcel sortation and order fulfillment to facilitate efficient express logistics operations delivering seamless end customer experience." United Robots produces AI-powered robotic cleaners, disinfectors and carriers that do everything from removing microbiological contaminants to safeguarding workers to tugging heavy loads or carts. Other humanoid robots designed to perform all sorts of industrial tasks — and winning awards— are now available (or coming soon) from companies like Figure AI and Sanctuary AI.

The robots on the manufacturing floor are controlled through the Cloud using platforms provided by NVIDIA (the chipmaker refers to the new platform as “a general-purpose foundation model for humanoid robots”) and the aforementioned Agility Robotics, which the company says can “command a robot army, say, to start moving bins to a conveyor belt at a particular time.” Not sure I like the sound of that, but OK.

### **Internet of Things**

Industry Week’s VG Govindarajan and Venkat Venkatraman write that smart companies like Rolls-Royce are using “fusion technology” being powered by AI to turn yesterday’s equipment into thinking, intelligent machines.

“Tractors have become ‘farm-based computers’ linked to precision agriculture Cloud systems,” they write. “Rolls-Royce offers ‘Power by the Hour’ agreements for its aircraft engines. This approach ensures that Rolls-Royce is responsible for the maintenance and performance of its engines, with costs linked to the hours that the engines are in operation.”

Firms with complex processing applications — particularly larger power generation, oil and gas, chemical and food and beverage manufacturing companies — are now implementing AI platforms like Uptime AI which uses sensors to monitor, analyze, evaluate and alert when there are disruptions, malfunctions or other problems that can create anomalies, loss of efficiency and safety issues.

Other software firms and hardware manufacturers are partnering to create Internet of Things (IoT) sensors that are using AI technology and models. The sensors are then installed on manufacturing equipment for the purposes of “making hardware smart” using audio, video, vision, temperature and pressure sensing.

### **3D Manufacturing**

A variety of companies like Fathom Digital Manufacturing, Protolabs and Stratasys are using AI to “dramatically accelerate the product development cycle” that allows manufacturers to design, create, test and evaluate prototypes in “a matter of days, rather than weeks or months.”

### **Consolidating Data Into Large Language Models**

For AI to work, large databases must be built from disparate information.

One company called EthonAI has launched a new software platform that they say “is designed to provide managers and engineers with a ‘sixth sense’ to follow what’s

happening within their factories more closely.” The platform brings together data from multiple sources and then uses AI to make recommendations for management.

“With AI tools, it can be easier for companies to identify patterns that produce poor quality products and implement changes quickly,” says Rae Hartley Beck. “When a greater percentage of final products pass quality control, less waste is produced and more value is created for companies.”

In 2024, another company — Sight Machine — announced a partnership with Siemens AG to create a manufacturing data platform for collecting, contextualizing and analyzing all types of manufacturing data to improve production. Sight Machine’s software “analyzes the entire history of production runs to determine the best settings for the current conditions.”

Microsoft announced several initiatives to bring data under one roof using “Copilot templates” so that their customers can “create their own copilots.” The idea is for employees to use natural language queries to retrieve data, like asking the large language model why a machine is breaking and getting insights to help resolve the issues faster.

Manufacturers in the auto industry are reportedly investing in internal AI applications to help improve production scheduling, minimize line stoppage, test chemical mixtures, align data from different sources to better communicate with suppliers and customers, and source materials based on real-time availability around the world to reduce supply chain bottlenecks.

In the back office, Cloud computing platform ServiceNow has released financial, customer service and operations software designed specifically for manufacturers that uses AI to do things like automatically recommend replacement parts for customer maintenance, automatically manage customer exceptions, communicate independently with suppliers, and autonomously log a problem and deploy a field technician with the necessary knowledge, skills and equipment to manage the task. Other manufacturing software makers like Epicor, SAP and Sage are rolling out similar AI-based functions.

OpenAI’s ChatGPT was released in November, 2022. It created a flurry of activity, jump-started a tidal wave of investments, launched countless startups and forced every software and hardware company to double down on their AI offerings. Less than two years later, manufacturers were beginning to see the results of these efforts. And we’re just getting started.

## **You Own a Manufacturing Company. Here's How to Use AI This Year.**

You're a small or mid-sized manufacturing company.

You're not Amazon, and you're not Toyota. You don't have robots crawling over your facilities, and you don't have hundreds of millions to spend on automation. You weren't born yesterday either. You know that, like all new tech, AI is still in its 1.0 version, and you're not going to risk your business on immature and untested applications. And yet you can also see where things are going: AI will certainly have a dramatic impact on your business in the not-too-distant future, timeline unknown. So, for now, do you do nothing?

No, you can do something. You can start leveraging AI in your manufacturing business. Here are a few ways how.

### **Sign on to an AI Assistant.**

This year, it will be critical that you and your senior and mid-level managers subscribe to one or two of the main AI Assistant players — ChatGPT, Gemini, Copilot, Claude, Perplexity or Grok. There are many others, but these are the leaders. None are perfect, but then again, who is? No document, agreement, bid, proposal, quote or other correspondence should leave your company without first being uploaded to your AI Assistant for comment and advice.

Train your people to use these tools to create new policies first before having them reviewed by your attorneys and experts. Connect these tools to your internal data — OneDrive, Google Drive, Dropbox, Teams, Gmail — so that you can search and get answers about your company's information. Use it for research. Converse with it about your business. Ask for advice. You will be smarter, get better answers and be more productive when you lean into a good AI Assistant.

### **Lean Into Microsoft or Google's Office Tools.**

Chances are your company runs on either Microsoft Office 365 or Google Workspace. Each has its own AI tool — Copilot (Office) and Gemini (Google). Hire a consultant from LinkedIn or a similar site and get your entire staff trained on these capabilities. They've come a long way. Use these AI tools to more quickly create presentations, transcribe and summarize online meetings, translate calls in different languages, write e-mails, analyze spreadsheets and manage data. Not only will your staff be more productive, but they'll be less fearful of what this stuff does and be better at their jobs.

### **Build an Internal Solution.**

Thanks to a proliferation of tools available now, you can build your own AI system using your own data. You can create your own large language model and synchronize data from your ERP, accounting, inventory management, HR and CRM systems into it. You can create your own agents and perform automated tasks with minimal human involvement. I wrote about the steps you need to take for Forbes last year. It's not cheap. But it may be a good direction for your company.

### **Buy an External Solution.**

Don't want to build something internally? You're not alone, and you're not wrong. Doing that can be time-consuming and expensive and probably out of your wheelhouse as a small and mid-sized company. Instead go to the manufacturing software providers that you use — Dynamics, Sage, Epicor, SAP, Acumatica, Infor, NetSuite or whatever. Have their product people walk you through all the current and forthcoming AI functionality they're including in their products to justify the ongoing monthly fees they charge. Figure out what makes the most sense for your business, adopt, clean up your data, then train your people and implement. Do this in small bites.

### **Leverage Your Things.**

It's the age of the Internet of Things, and most of the best AI advancements are hidden in the form of sensors on manufacturing equipment. Major suppliers from Boeing to Caterpillar to Hitachi have multiple sensors using AI on their engines and equipment which monitor everything from humidity to output to potential safety issues. Your suppliers are likely doing this too, and you need to ask and understand. This data can now be sent wirelessly to a large language model where AI-leveraged applications can analyze, interrupt, remediate and notify.

Consider also augmented reality devices like HoloLens, Vision Pro and Ray Ban Meta which can help do inventory, identify safety issues and train employees. Use small drones in your warehouse from companies like Gather AI, Vimaan, Verity, B GARAGE and Brightpick to cycle count inventory and monitor production. All these technologies exist and have significantly come down in price.

### **Finally, Watch Robotics.**

Only the big companies are investing in robotics, but that's quickly changing. Companies like Boston Dynamics, Atlas Robotics, ABB, FANUC and KUKA are using AI when creating robotic arms and human-like imitators that can move product, count inventory, pack and seal. Robotics shows worth attending include the

International Robot Exhibition (IREX) in Japan and the Consumer Electronics Show (CES). Go to one of them so you can see all the new stuff that's real life and making its way to your manufacturing floor. Start thinking about where you can deploy robots in your facility and hone in on a few of the manufacturers of these devices that you like. I'm betting that, within two to three years, you'll be investing.

Your manufacturing business is going to be significantly changed by AI in the next few years. This is absolutely going to happen. Right now, the technology isn't ready for prime time. But, as it approaches adolescence and then adulthood, no manufacturer will be able to compete without doing all the things I have listed above. You've got about two to three years to prepare. You should start now.

# **AI Software and Hardware Products Disrupting the Construction Industry...and the Blunt Truth About Them**

If you're running a construction business or team, you want to be up to speed on the software and hardware that are integrating the latest artificial intelligence tools so that you can leverage these features to get work done faster, cheaper and with greater accuracy. Over the next few years, there will be a proliferation of technologies that will be using AI to disrupt the construction industry. But there are plenty of great tools available right now to consider. Here are a few.

## **Project Management**

Project-management software is now using AI for the following purposes:

- automatically assigning tasks based on roles and availability;
- creating and optimizing new projects based on prior projects;
- tracking actual vs. budgeted expenditures with alerts and suggestions;
- forecasting completions based on prior projects, milestones, timelines and activities;
- automatically communicating and responding to both team members and clients;
- identifying anomalies in project progress compared to similar projects;
- providing real-time internal and external analytics.

Applications to check out: Procore, ClickUp, Kwant, BuildStream, AutoDesk

## **Training and Remote Management**

Virtual and augmented reality headsets are now being deployed with AI capabilities on construction sites and in the office to enable:

- training for new workers in a controlled and safe environment;
- identification of safety issues;
- recording of project process for further analysis;
- visual confirmation of projects for offsite team members;
- on-demand review of designs and plans.

Products to check out: Microsoft HoloLens, Magic Leap One, Meta Quest

### **Surveying and Inspections**

Companies using drones, mobile devices and autonomous vehicles are providing their products to construction customers who use AI to:

- conduct visual pre-surveys of project sites;
- analyze conditions;
- monitor project progress;
- track worker safety;
- patrol physical spaces and then create models;
- take images of physical spaces to calculate distances and volumes.

Companies to check out: DroneDeploy, Scopito, Pix4Dcatch, Mapware, PrecisionAnalytics, Airworks.io

### **On-Site Worker Support**

AI technology is now being used to power robots that are already performing some of the basic tasks that workers perform such as:

- welding materials and removing waste such as nails and other materials from scrap materials;
- lifting and moving objects around a job site;
- autonomously transporting materials;
- monitoring sites for safety issues.

Companies to check out: KUKA Robotics, ABB Robotics, Boston Dynamics, Dusty Robotics

### **Building Design**

New CAD/CAM software products are using AI to:

- create and model new designs based on prior or similar projects;
- suggest design enhancements;
- identify potential design flaws and structural issues;

- perform predictive modelling based on a designer's instructions;
- suggest energy savings;
- analyze historical project data and simulate different scenarios;
- optimize resource allocation;
- assist in generating 3D models;

Applications and companies to check out: Fusion360, Bentley Systems SYNCHRO, Alice Technologies

### **Estimating**

To do an estimate, it's common to have drawings, plans or photos of the potential site. Estimating tools are now leveraging AI to read those documents and files to:

- identify spaces and sizes at a location;
- calculate dimensions, weights and other measurements;
- compare prior and current plans for differences;
- identify potential problem areas;
- automatically pull in products from prior purchases to determine costs;
- suggest labor hours and materials required;
- create draft estimates for review.

Applications to check out: Tocal.ai, CountBricks, PlanSwift

The blunt truth: These products are expensive.

They will require a significant amount of time, resources and dollars to truly use them the right way. Many that I've included above are likely out of the wheelhouse for many small and mid-sized construction firms.

Project management applications take time to implement. Virtual reality headsets need programming. Surveying and inspection technologies also require programming as well as equipment maintenance and replacement costs. Robots, while coming down in cost, are still a big company thing and are far from perfect. Building design software requires a certain leap of faith and much validation. Estimators need training and support to properly use the AI features in their software.

Their AI capabilities are still in their infancy. Justifying the return-on-investment may be difficult. Just like all those miraculous mobile apps that appeared after the iPhone was introduced, it's a guarantee that some of these products will die on the vine, as will the companies behind them.

But...it's still exciting. Now that the cost of storage, processing and Cloud computing has decreased so much, the door is open for a new wave of AI-based technology that will change the way construction firms do business in just the next few years. Those mentioned above are ahead of the pack and worth a look.

If you're running a construction company, it's important that you stay on top of these technologies. As they mature, you'll find their use of AI will help you increase productivity, reduce overhead and grow profits. And I'm betting your competitors will be doing the same.

# **AI in Construction: Actual Stories About How AI Is Actually Being Used Today**

Search for articles on how AI is used in the construction industry and, if you're like me, you'll start getting frustrated. There are countless thought pieces from thought leaders about all the ways that AI can and will change the industry but very few that tell actual stories of actual technologies that are actually being used by actual construction companies. The good news: This is starting to change. AI apps for construction companies are hitting the market and maturing. These are actual products from actual companies that are actually available right now.

Here are a few stories about them.

## **Home Remodeling**

An excellent piece by Nancy Keates in the Wall Street Journal highlights a few home remodeling applications like Renovate AI, Reimage AI, Digs, Skipp and other tools that enable individuals to reimagine a new kitchen, bathroom or bedroom and share with their designer, architect and builder. For the contractor, this saves time and helps clarify projects.

"Many of the AI apps are aimed at improving the speed and communication for homeowners working with an architect or designer," Keates writes. "Some homeowners say the tools are already offering a newfound leg up in managing their projects with the pros."

## **Robots on the Construction Site**

GeekWire's Kurt Schlosser tells the story of a pilot program in Seattle where builder Skanska is using robots from Nextera Robotics to provide high-resolution, 360-degree photographic images so that Skanska's development team can keep "near-constant eyes on a project site."

Meanwhile, Boston Dynamics' Spot the Robot Dog's "agility and athletic intelligence" to "get around job sites that other robots can't" is reporting project progress, accessing hazardous areas and detecting health and safety issues.

## **Robots Putting Up Drywall**

In 2022, Jeff Rubenstone of industry site Engineering News Record reported on a drywall installation robot offered by a company called Canvas that is "able to semi-autonomously finish large sections of drywall" and is "changing the way some drywall teams perform their work."

“The robot focuses on broad spaces, high-volume sections, as well as hard to reach areas like high spaces and corners,” the company’s CEO and co-founder told Rubenstone. “The machine can handle the application of the finishing compound and the sanding of it. Workers do the taping and handle the more complex geometries.”

### **A Custom ChatGPT Construction Application**

A startup called Togonal.AI has launched a ChatGPT-based application that enables construction companies to upload charts, designs, documents and other files into its own large language model so that workers can chat, query and get answers to questions conversationally.

“With hundreds of pages in construction plans, ChatGPT will help Togonal.AI users save time, improve accuracy and serve as a powerful tool to eliminate mundane tasks, so estimators can focus on higher-value jobs,” the company’s founder and CEO said in a press release.

Togonal has another app that uses AI to help quickly search images for specific objects, symbols or tags (e.g. how many sprinkler heads are in this landscaping design plan?).

### **VR Images Created From Designs**

A Bay Area-based company called Resolved is now selling virtual and augmented reality apps that use AI to walk through job sites and then “virtually perform safety inspections, emergency procedures or lock out/tag out to ensure alignment with building operations needs.”

The app also integrates with leading construction software platforms like Procore to convert Business Information Modelling (BIM) files into “fully immersive VR walkthroughs” so that teams can collaborate on project status, specs and progress.

In a case study, Resolve says it saved one construction client more than \$3 million by flagging “over 1,000 potential issues during collaborative VR review sessions” that would have been “missed with traditional review processes.”

### **Converting Videos Into Projects**

OpenSpace.ai enables workers to walk around job sites while automatically capturing videos and then converting those videos directly into BIM designs.

The company is targeting construction company owners, general contractors and tradespeople to provide an effective way to monitor job progress and keep projects

updated using AI-leveraged video tools. According to one case study, a member of a field team “simply straps a 360-degree camera to their hard hat and walks the site once or twice a week, and imagery is automatically mapped to project plans and stored in the Cloud, which makes it simple to locate images from different points in time.”

### **Drones Converting Images Into Data**

There are several companies that use AI to power drones. One example is Skycatch, whose drones offer a “suite of Deep Learning–based analytic tools for automatically cleaning and extracting value from data” with one of its uses focusing “on geological features such as toes, crests, safety berms and stockpiles.” Drones are no longer just cameras in the sky. Companies like Skycatch are converting photos and videos into data and then helping to project job progress and automatically identify safety and maintenance issues.

The hype of AI in the construction industry is receding, and the reality is taking hold. Numerous startups are building applications, hardware and robots that will historically change the way projects are done. Right now, there’s a stream of new AI technologies coming to the market. Within the next few years, there will be a flood. My advice to business owners in this industry is to start swimming.

# AI in Construction: A Few Game-Changing Tools Every Contractor Should Know

According to some industry reports, the AI in construction market is expected to grow from about \$4 billion today to almost \$12 billion in just the next few years. There's a lot of new technology coming. But if you're running a small or mid-sized construction firm, what AI tech could you be leveraging this year to increase productivity and products? Here are a few real-life products and companies that you should be considering.

## Drones

Drones have come significantly down in price and are being used by a number of firms to track quantities of materials, progress, employee movements, security on job sites and safety issues. Firms in this industry say that, when deployed the right way, drones can decrease surveying and inspection time by as much as 90 percent. The big players in this arena include DroneDeploy, Pix4D and Propeller Aero.

## Robotics and Building Automation

While we're still a ways off from humanoid robots replacing workers, there are other types of robots that are already performing functions on a job site alongside their human counterparts.

For example, robots made by Canvas can perform drywall finishing and create a "digital twin" of all work performed for quality assurance. Products from Dusty Robotics will map out project areas and print full-scale floorplans directly onto slabs, eliminating layout errors and reducing rework. Boston Dynamics sells a robot dog called Spot, which can reach places deemed hazardous or unsafe for inspections, safety checks and observation.

Using robotic stations and data capture, a company called Trimble delivers hardware, software and services used in construction, infrastructure, geospatial sciences, transportation and logistics that use AI for "precision positioning, data modelling, analytics and connected workflows."

Built Robotics offers AI-driven pile drivers that automatically navigate to a pile's precise location based on a digital project plan where it then drives the pile to the specified depth with minimal operator input, allowing a single operator to perform the task typically required by a two- or three-person crew. RIC Technology offers 3D printing robots that can autonomously build both commercial buildings and residential housing. Versatile attaches sensors to its cranes to track load paths, cycle times and idle equipment, which helps to identify productivity bottlenecks, unsafe operations and reduce overall equipment costs.

Once a building is up and running, AI is being used to improve the conditions inside. Driven by proprietary technology and model predictive control algorithms, Siemens Comfort AI

continuously optimizes indoor comfort and energy performance, running autonomously across building portfolios without manual intervention.

## **Project Management**

Procore is a major software player in the construction industry, and what it's doing to advance AI should be watched closely. The company has recently rolled out its Procore Assist which serves as a conversational AI Assistant that provides contextually relevant answers on demand and helps its users to find information needed from specs, RFIs, submittals and building codes in seconds. New features include multilingual and mobile support as well as a photo intelligence option which can also allow users to summarize project progress and provide safety insights from analyzing jobsite photos.

Procore also announced late last year that its Agent Builder product had entered "open beta" and once fully tested will allow users to automate workflows by building custom AI agents to meet the unique needs of their business including generating RFI content, searching project documents for answers and automating jobsite reporting.

Autodesk's Construction Cloud is leveraging AI to better predict project risks from thousands of prior jobsite datasets, identify subcontractor performance issues before they impact schedules and help to detect quality and safety issues.

If you're interested in building your own app, you may want to look at what construction firm Skanska is doing with its AI chatbot called Sidekick, which is designed to help the company explore catalogs of data from its numerous projects without introducing secret or proprietary information to the public domain. Built using the same tech as ChatGPT, users can ask Sidekick questions, and it responds with answers based on a collection of internal data that will remain within Skanska's proprietary cloud. The product is for internal use only and will not be sold commercially, but it provides a good example of how larger companies are licensing large language models to develop their own solutions.

## **Estimating**

If you're an estimator, you're looking for applications that can help knock out your estimates as quickly and as accurately as possible. iBeam claims it's the only AI-assisted fully automated construction takeoff (which is the process of identifying and measuring all the materials and labor needed to complete a project, based on drawings or specifications) software that delivers estimate-ready outputs. Other companies providing similar functionality include Togonal.AI, which reads blueprints and performs takeoffs automatically, reducing estimating time and mistakes.

## **Augmented Reality**

Thanks to products like Meta's Orion, augmented-reality devices are looking much less bizarre than they did just a few years ago. And, while Meta is a big player, the number of these devices are proliferating, thanks to Apple's Vision Pro and Microsoft's HoloLens as

well as several smaller competitors. These glasses are not only growing in use but are now benefitting from several new applications that are turning them into an important tool to have on the construction site.

For example, a company called OpenSpace has Vision AI that can perform 360-degree camera walks and then uses its AI technology to compare jobsite progress to BIM (Business Information Modelling) models and schedules. The company says its device can “instantly show what’s behind walls” and flag delays, missing materials and safety hazards.

Buildots offers hardhat-mounted cameras and AI software that automatically detects deviations from design, tracks quantities installed vs. planned for billing accuracy and may be helpful in reducing disputes between various parties working on a job. An engineering-grade helmet made by XYZ Reality says it can do “super-accurate model-to-field overlays” that will prevent rework, speed up QA/QC inspections and perform real-time deviation detection.

If you’re fan of HoloLens, Orion or Vision Pro, you’ll find custom solutions from Unity, Trimple and Fologram that can overlay BIM models on jobsites, visualize “clashes” before building, provide guidance on layout and installation and enable remote collaboration and real-time project design markups as well as offer on-site visuals, real-time simulations and immersive walkthroughs of projects.

These are all technologies driven by AI that exist now. They’re still in an early stage but becoming more accurate, reliable and consistent enough that a growing number of construction firms are leaning into them to help increase productivity, improve quality and grow profits.

# When Will Small and Mid-Sized Businesses in Construction Truly Adopt AI? Tech Company Trimble Urges Patience.

In the construction industry, AI use cases are beginning to grow.

## Construction Industries Slowly Adopting AI

At my clients' jobsites, I'm seeing a number of surveillance drones that are keeping track of safety, job progress and weather conditions as well as more foreman equipped with augmented-reality headsets to assess job status, identify open areas and point out potential safety concerns.

Robots won't be replacing plumbers and pipefitters anytime soon, but robot dogs are already being used to send back data from hazardous areas or places considered too risky to send a human. 3D printers, autonomous material movers, stand-alone drilling and mixing machines and IoT-enabled protective clothing are now contributing to more productivity on the job.

What about the back office? Here I'm seeing new features in project management, such as estimating and Building Information Management (BIM) software systems that are leveraging AI to scan, capture and process data faster and more accurately and on a larger scale than a person could.

## How Trimble Plays the Role of Connector

This is all about better ways to collect and then use data. But who sits in the middle? As all these data are accumulated, how do you connect one system to another — and then analyze the information? One company, Trimble, is doing this part.

Trimble is a Colorado-based technology company that provides software and hardware to help its clients — many of whom are in the construction industry — plan, design, build, measure and manage projects that connect what happens in the office (design, estimating, project management) with what happens in the field (surveying, machine control, scanning, site data capture and 3D takeoff/data prep). Trimble says its technology streamlines the entire project life cycle — from estimating and design to project management, field operations and financials — and uses AI tools to unify data, improve collaboration, reduce errors and waste, and give real-time visibility into costs and progress.

Trimble, like others in the construction industry, is heavily leveraging AI to provide a better and more productive experience for its customers. In fact, it was doing so long before AI took off in the public narrative. According to Mark Schwartz, a Senior Vice President at the company, Trimble had AI invoice recognition and routing in its ERP system "before ChatGPT was a thing."

"Old-school AI-machine learning and photogrammetry have been in our products for years," said Schwartz.

For companies like Trimble, AI readiness is less about hype and more about data connection and workflow integration, which unintentionally prepared it for today's AI moment. Schwartz says that his company has had a longtime strategy to enable better connection and scaling of different software systems which set them up to use generative AI faster.

### **Getting Small Businesses on Board**

But when will small and mid-sized businesses (SMB) bite? Sure, many are dabbling with generative AI chatbots. But the day will soon come when they will move more towards back-office systems to improve their operations. For Schwartz, there's little question that the opportunity is there.

"We heavily serve the small and mid-market...because it's so underpenetrated with technology," he said. "Once they start using one or two things, it's like the enlightenment comes."

Two other factors will come into play: tech-enabled bigger companies that will subcontract down to smaller organizations and pull them into their tech-enabled ecosystem and a growing number of younger people trained on newer technology at an earlier age. As this plays out, more SMBs will find themselves being drawn faster into using AI internally. But companies like Trimble know that this will take time because SMBs have little room for error.

"For SMBs, they want the Google Workspace version," Schwartz says. "They're like: give me the five tools that just work."

And many SMBs remain dubious, particularly because of the less-than-reliable AI results many have seen in real life. Even Schwartz admits that, while today's AI can be "excellent for productivity," it's also dangerous when deterministic accuracy is required.

"I don't think any of us want to go to the 52nd floor of a high-rise designed entirely by an AI agent" he said.

So, when will there be a tipping point for SMBs? For Trimble and Schwarz, it's all about patience. He believes it will be as trust in AI is built gradually through narrow, high-value workflows. But adoption doesn't have to be aggressive.

"There's plenty of productivity to be had right now without forcing the issue," he said. "It's important for SMBs to use it in the most relevant workflows, and that will build trust over time. People will realize that, for many tasks, the 90 to 95 percent answer is good enough when it can be done in seconds versus days."

## **Forget White-Collar Dreams — AI Is About to Make the Trades the Job of the Future**

While standing on the sideline watching a high school soccer game, my friend, who owned a small and successful construction company, complained that his son — a senior — was starting at a respected local university that fall which would cost roughly \$200K over the next four years.

“I could take the same money and set him up in a contracting business,” he said. “It would be a much better investment.”

That was in 2010. The kid did go to that college and graduated four years later with a degree in history. Where do you think he is now? Working in the construction business. I’m betting that, if my friend and I had that conversation in 2025, things would have turned out much differently. College tuition is a dubious investment. The trades — particularly construction — is a much better bet. And for that you can thank AI.

Ask anyone in the construction business and they’ll complain about the lack of skilled workers in their trade. The numbers support these concerns. The Associated General Contractors of America reported this past year that 92 percent of firms had a hard time filling positions, and 45 percent delayed at least one project due to labor shortages. A worker shortage model from the Associated Builders and Contractors estimates that the industry must attract 499,000 workers in 2026 to meet demand. The National Association of Homebuilders estimated in 2025 the number to be as high as 723,000 annually.

Why the shortage? Among the reasons are that younger workers have gravitated away from working with their hands over the past few decades in lieu of cushier office jobs. Older workers are getting older: the National Center for Construction Education & Research estimated that about 41 percent of the current construction workforce will retire by 2031. And the current administration’s immigration policy had not only dried up the flow of potential overseas workers but has driven many construction workers — even those with proper documentation — underground.

The building of data centers has surged over the past few years, and construction workers on those projects are in such high demand that they’re seeing pay jumps of 25 percent to 30 percent compared to their previous jobs — and in some cases, much more. Good for them, but, according to Fortune, that’s not going to last .

What will happen very soon is — as interest rates continue to fall and new tax incentives begin to take hold — a new demand from both homebuyers and businesses looking to build and buy properties will, after more than five years, return and return strong. This is a cyclical industry. Things have been in the trough. But, when the recovery happens, the peak will be high. Which means there will be an enormous need for new construction workers.

For many in the industry facing such labor shortages, that scenario is daunting. I think the opposite.

Thanks to AI, there will be an obliteration of entry-level jobs and the meaningless white-collar work performed by countless corporate drones in marketing, accounting, customer service and IT departments. Where will they go? There will be other opportunities — startups and new jobs we've never heard of (20 percent of today's jobs didn't even exist in 2000, says a LinkedIn survey). But many will gravitate towards the trades — a place where AI can't replace them.

We're already seeing this trend develop. Trade school enrollment is up significantly since the pandemic and was predicted in a March 2025 report to increase as much as 7% annually through 2030, a rate significantly higher than other forms of higher education. The ranks of students studying construction trades alone rose 23% from 2024 to 2025, according to another report. Despite what some may think, young people are not stupid. They're following the money.

Unfortunately, it won't be enough. But, thanks to AI, new technologies will fill gaps. Already there are companies making autonomous drones to monitor safety and progress on job sites, self-driving vehicles that map out projects and carry materials, robotic dogs that explore hard-to-reach and hazardous areas, equipment that can 3D print frames and drill and apply drywall with minimal supervision as well as back office applications that enable estimators and project managers to complete more projects faster and with greater efficiency. Better protective clothing that monitors movements and cameras that identify jobsite risks are improving safety and keeping people working longer. AI is already helping firms recruit better workers by identifying existing skills, teaching new ones and eliminating language barriers.

Thanks to this growing new generation of skilled — and tech savvy — workers, we'll see more projects completed by less people as well as a higher number of entrepreneurs founding startups and buying existing businesses from their aging owners. The construction industry has enormous potential. And it's why countless private equity firms are swooping in to mint, as the Wall Street Journal reported in late 2024, "a new class of millionaires across the country, one that small-business owners say is helping add more shine to working with a tool belt."

Yes, it will always be a challenge finding a good contractor to redo your kitchen. And yes, there will still be plenty of parents like my friend who will reluctantly fork over vast amounts of money to a university instead of spending on a good trade school education for their kid. But there will be less of that. It used to make sense to get a college degree and become a lawyer or a banker. AI is changing that. Now, the smart money's in construction.

## **Five Examples of How Brands Are Replacing Their Employees With AI**

Whenever you read about a large company deploying AI, it will never say the obvious: This technology is replacing employees.

It'll instead say how it's "making its people more productive" or that it's "enhancing the customer experience" or how the technology is "adding more tools" for its workers. All of that is true. But, in the end, it's all about doing more with less, and in this case it's less people.

AI is just another technology to accomplish this. It's certainly not the first. There's been a history of robotics, bots, workflows, alerts and other automation tools to do work in place of people. It's just that AI's progress has been faster, and brands in financial services, restaurants and even education are using it to simply replace people. Already it's happening. Here are five recent examples.

There's Klarna, the Swedish buy-now-pay-later service which announced in February, 2024 that its OpenAI-powered customer service chatbot system was doing the work of "700 customer service agents" and doing it faster and more accurately. "What that means to me is that we become brutally efficient, both in the resources we use but, more importantly, in the results that we can create," the company's Chief Marketing Officer recently told the Wall Street Journal. What that means to me is more work being done with less people, which could have an adverse effect on future hiring at Klarna.

The New York Times reported that large financial services companies like Goldman Sachs and Morgan Stanley are introducing AI tools that "can replace much of Wall Street's entry-level white-collar work," like preparing spreadsheets, creating PowerPoints and analyzing financial data. Imagine putting in 100-hour weeks just to be replaced by a bot. Not that there's a great deal of sympathy for those on Wall Street, but it's still a sign of the times: More technology means less need for humans doing this kind of work, and, if there's any industry that's cutthroat enough to make these changes quickly and without remorse, it's investment banking.

According to USA Today, electronics retailer Best Buy "has made a significant cut to its workforce and laid off a number of employees, including Geek Squad field agents, current and former workers," while at the same time announcing a new "AI venture" with Google that will use "generative AI to provide our customers with even more personalized, best-in-class tech support experiences." And you thought tech jobs

were safe? Apparently not. Why employ a geek when a large language model can answer customers' questions faster and more accurately?

The benefits of AI are already starting to trickle down to small and mid-sized businesses, where companies like Bloomington, Illinois' Little Beaver Brewery and Burning Rice, an Asian eatery in the Dallas area, are using platforms like Sling.ai to literally answer the phones when customers call and automatically book their reservation. "By 2030, we will save businesses and consumers one billion minutes of precious time while transforming branded voice experiences into the preferred mode of communication," Sling.ai boasts on its website. That's almost 700,00 days of work that would have been formerly done by people. Sling.ai won't say it's replacing people. But it is. And I bet it'll do well at it.

Even local governments are getting into action. The Texas Education Agency is rolling out a "new artificial intelligence-powered scoring system set to replace a majority of human graders in the region." The Texas Tribune reports that "The agency is expecting the system to save \$15–20 million per year by reducing the need for temporary human scorers, with plans to hire under 2,000 graders this year compared to the 6,000 required in 2023." True, those tax dollars saved will likely be offset by unemployment payouts, but hey...it's progress, right?

Are you seeing the writing on the wall? There are all sorts of studies and research that show how many jobs will be lost to AI, with some — like Goldman Sachs — projecting as many as 300 million people being left unemployed worldwide by 2030, which really isn't so far away. Does this concern you? It shouldn't.

Over history, large numbers of professions and occupations have been lost to technology. Blacksmiths, typing pools, data entry clerks, switchboard operators, elevator attendants, bank tellers, and even knocker-uppers, (now get your mind out of the gutter, they were paid to knock on people's windows in order to wake them up because there were no alarm clocks) and lamp-lighters (who manually lit and extinguished street lamps each day) are no longer a thing. In just the past 20 years, we've seen travel agents, cashiers, photographers, postal workers, video store clerks and TV repairmen mostly cancelled thanks to tech (for some reason, there are still plenty of translators, go figure). Regardless, AI will claim many more.

But, thanks to AI, we now have "prompt engineers" and "AI managers" and testers and engineers and consultants and trainers and all sorts of new jobs created. According to Ernst & Young, generative AI venture capital investment globally was on track to reach \$12 billion in 2024. Most of this money was funding new startups and expansions of existing organizations. It was a whole new industry with countless new companies. When companies expand, they need managers and

staffers and people who still have to do the marketing, accounting, finance, sales and operations because there will also be a need for humans to do this stuff, and AI will never be able to do it all autonomously (at least not in the foreseeable future).

Whether big brands publicly admit it, the fact is that they are using AI to replace people. But don't worry. As in other industrial and technological revolutions, humans will figure out other things to do with their time.

## **My Company Uses ChatGPT. Exactly How Private and Secure Is Our Data?**

According to a survey from Cox Business (a client of my firm), two-thirds of small and mid-sized business owners invested in AI for their company in 2023, and 53 percent planned to invest in AI even more in 2024.

No, most of these businesses were not operating robots or developing their own large language models...yet. What “invested in AI” meant — in 2024 — was that small and mid-sized businesses and their employees were mostly using generative AI platforms like ChatGPT, Google Gemini, Microsoft Copilot and Anthropic for several back-office tasks like helping to analyze spreadsheets, attend and record meetings, craft e-mails, perform research, create policies and analyze contracts.

But there’s a concern here.

Using these platforms requires employees to share and upload data. And, given the enormous advances in AI assistants, it’s safe to assume that, over the next few years, businesses will be leaning on Cloud-based AI platforms like these to help them run their businesses more efficiently. Already ChatGPT 4o can “see” and “hear” conversations. Google’s Gemini recognizes everything in an office, including where a lost pair of glasses are or recognizing software code displaying on an open monitor. All this information is going somewhere to be processed, right? It is. It’s going right into the hands of those big technology companies. Should we be concerned? Damn right we should.

While governments, governors and tech companies issue edicts, mandates and promises about the safe use of AI, businesses have an equally pressing concern: Given the amount of data these AI apps need to do what they promise, exactly how private and secure is our actual data? Spoiler alert: You’re not going to be happy with the answer.

OpenAI’s data strategy is not unlike Microsoft and Google. The company says it won’t sell your data and will only share it with your consent. However, its policy does stipulate that it can use your data to:

- Provide and improve services
- Communicate with you
- Ensure compliance with legal requirements
- Conduct research and analysis

-Enhance security and prevent fraud

All these uses give OpenAI wide latitude. For example, is using your company's proprietary data necessary to "enhance its services"? Or "develop new features"? Or help it "respond to lawful requests"? Good luck fighting their army of attorneys who will be deployed to defend these actions. And what difference would it make at that point? Your data would have already been sucked into the company's "learning model."

So no, your data are not completely private. Nor are they completely secure. I'm sure OpenAI employs the best and the brightest security professionals to ensure that the critical information you've uploaded is protected, safe and free from data breaches. Just like Twitter/X, Adobe, Dropbox and LinkedIn. Or Trello, Vanderbilt University, Boeing and Sony. Feeling better now?

This is an opinion column, so here's my opinion: Your company's data are not completely private nor are they completely safe, whether they're with OpenAI, Google, Microsoft or any AI platform. Sure, these companies all have policies, but they're written to favor their own interests and can be easily defended against any small and mid-sized organization who dares to question. And yes, their security protocols are at infinitely higher levels of quality than most companies can afford. But, as we've seen, none of this provides a 100 percent guarantee.

So how are my smartest clients addressing these concerns? The same way they address all issues impacting their decisions. By weighing risks and rewards.

Future AI tools will use our data to perform many core functions in our businesses, from stacking shelves to autonomously fixing issues. Yes, there are data loss or misuse risks, and smart business leaders will be weighing these risks against the rewards, just like we do as individuals every time we drive our cars, eat fast food, swim in the ocean or go for a blind date with someone we met online.

The risks of your data being stolen or used without your knowledge or consent are very real. However, the rewards of using AI platforms like ChatGPT — better customer service, increased sales, higher levels of productivity, more profits as a result — are pretty significant. There will never be a concrete answer to the data privacy or security issue. Just a continuing evaluation of what's at stake.

## **Google's AI Offerings Are Missing One Big Thing: People.**

Recently, Google announced several changes and product launches in the advertising, search and AI assistance space — in addition to its previously launched AI enhancements to its Workspace — that will significantly disrupt both our personal and professional lives. Of the new offerings, there are four that particularly caught my eye because they will impact many of my clients.

### **1 - Getting Found Online Will Be Very Different.**

Search Engine Optimization will be much different in the next few years. That's because Google is moving away from delivering pages of links to websites when users search. Instead, users will get a generative AI response to their queries with website links pushed further down on the results page. If the content on your company's website is good to enough answer a specific question, Google's AI search may include you — and a link to your website — in its response. If not, well...you're pushed down even farther. News organizations are freaking out about this change because it will certainly cut down on their traffic. Companies that have been relying on customers finding them on Google should be too. Expect significant changes to your SEO strategy in the months ahead. Who's going to create and implement this strategy?

### **2 - Your Advertising Campaigns Will Also Need to Be More Relevant.**

Based on the above changes, how can you get found? Organic results won't go away, but all of this will further encourage companies and brands to advertise more with Google (surprise!) so that — assuming relevance — their ads can show up within the generative AI response. "This could make advertisers happy as their ads could be enhanced, but this could also result in less click-throughs to a brand's site," Anu Adegbola of SearchEngineLand. "This could be the start of traffic dropping off as Google provides the information consumers want right on the SERP (search engine results page)." Think running AdWords campaigns is complicated and time consuming now? Expect an entirely new process and learning curve as campaigns adjust to the new reality of AI search. Who's going to revise and run these campaigns?

### **3 - Your Ads Will Look Different and Respond Differently and Likely Need to Be Redesigned From Scratch.**

Google announced multiple ways to find out how the look of your ads will change, particularly if you're selling products online. For example, product profiles will be enhanced, and your imagery, videos and customer reviews will be emphasized, so, if

your media looks unprofessional, you're going to suffer. To help with this, Google has updated its product studio to help make images "useful" and "cohesive with your existing campaigns and content." Google also launched a new version of its Virtual Try-On tools, which "lets shoppers see how your products look on a variety of body types and build the confidence to buy." It's easy to see this expanding well beyond consumer goods so that even B2B companies can allow their users to see virtual versions of their products in use. But it's also going to require a new approach towards designing ads and a better understanding of the product studio. Who's going to learn these new tools?

#### **4 - Finally, Project Astra Will Allow Your Employees to Do Much More If You Lean Into It.**

If a picture's worth a thousand words, Google's Project Astra video is worth a million. Under Project Astra, Google's Gemini AI platform not only recognizes objects, code and places but can also explain complicated topics, solve math problems, memorize sequences, interpret drawings and even remember where you left your glasses! As this technology rolls out, your employees will be able to complete tasks faster, answer questions more accurately and be more productive. The bigger impact will be when Google Gemini powers actual robots that are stocking shelves, answering customer questions, moving materials around a warehouse and literally putting up drywall. It's all great, as long as people know how to use it. Who's going to teach them?

Which brings me to the bigger point, which is the one thing that's missing from Google's AI offerings: people. Sure, automation is going to eliminate jobs. But it's also an enormous opportunity for the people who embrace this stuff. And for the companies that invest in their skills.

Someone has to revisit your SEO strategy and then develop and implement a plan that will take advantage of Google's new AI search approach. For companies that rely on online advertising, someone will need to become expert in the new advertising tools and stay on top of these tools as they mature. And — like any software — all the great productivity benefits of Gemini will be lost unless a team of people in an organization become expert in them and then ensure that employees are trained to use them.

These aren't AI products. They're AI features being added to existing products. This is no different than any other software and hardware upgrade. It's going to require integration, customization and lots and lots of training. Businesses who want to fully leverage the potential of Google's AI tools will need to make investments in people to do this work. My smartest clients are identifying those people to assume

responsibility. And their best employees are embracing this technology and using it to be better at their jobs.

## **Sam's Club Is Now Successfully Using AI to Stop Shoplifting**

Most shoppers, after paying for their bulk products at BJ's, Costco or Sam's Club, oftentimes have to wait in line to exit the store while a store employee does a quick audit of their cart. This takes time and can be annoying.

The bulk retailers aren't happy about having to do this either. Not only does it annoy their customers, but it incurs an extra cost and is far from a perfect procedure. But doing a quick check of people's carts is a necessary evil in this business. Why? Because people steal. In fact, people seem to be stealing more than ever. Retailers are challenged with finding ways to thwart shoplifters.

Enter AI. Sam's Club is rolling out a solution to the shoplifting problem using AI technology. So far, it's been deployed in about 120 stores. How does it work?

After customers pay and as they're exiting the store, a quick photo is taken of their cart's items. The photo is instantaneously analyzed by AI algorithms and electronically verified against their receipt. If all is good, the customer can pass. Walmart says that this technology has significantly reduced the time it takes to exit the store and improved their customers' experience. No employees were harmed in the process.

But does it really work? There's reason to be optimistic, considering that — based on its tests so far — the company has said that it is rolling out this AI exit solution to all its stores by the end of the year. And, of course, things will get better as the technology evolves. Shoplifting will never be eradicated. But technology can significantly help lessen the impact.

But this story isn't just about shoplifting. It's about real-life AI solutions and who's really benefiting. The Sam's Club shoplifting solution is typical of how AI is being deployed this year. For now, AI is entirely a big organization game.

A big company like Sam's Club likely spent millions on an AI-leveraged solution to improve customer experience, make better use of its employees and, of course, lower its cost of shrinkage due to shoplifting. It probably had a team of developers working on the project and licensed someone's large language model to train. It had to buy and install hardware. Then test and train and monitor. Small and mid-sized companies don't have the ability to do this. But big organizations with deeper pockets are finding all sorts of ways to use AI in their businesses, and they're spending all kinds of money doing so.

For example, I previously wrote about Klarna, whose AI chatbot can do the work of 700 customer service agents. KFC, Taco Bell and Dairy Queen are using AI cameras to “monitor and analyze employees’ interactions with customers and allocates bonuses to those who are able to sell more.” Police departments are using AI cameras to capture events and then automatically write reports. Walmart is using autonomous forklifts powered by AI to move items around its warehouses. Bank of America’s Erica AI recently surpassed 1.5 billion client interactions.

Recognize these names? Of course you do. They’re among the biggest brands in the world. These large organizations — and many others — are spending large dollars to develop internal applications and solutions leveraging AI to perform work previously performed by humans, which is not only fixing their labor-shortage issues but overall increasing their bottom line.

That was the 2024 AI story: big businesses spending on AI. But in 2026?

This is when these technologies will start filtering down to small and mid-sized businesses as the costs come down and the bugs are worked out to make them more commoditized. More software vendors and startups will begin copying what the big companies have been doing and offering their own solutions to the masses. It’s in the works already.

Which means that, in the next two to three years, it will be commonplace for grocery stores to take photos of items leaving their stores to check against shoplifting, independent retailers to better monitor how their employees are servicing (and selling to) their customers, and small and mid-sized warehouse operators to quickly take inventories and move materials independently from one shelf to another.

AI is already having a significant impact for the largest of organizations. But that’s just the tip of the iceberg. Just wait.

## **Chatbots Emerge as the First Killer AI App for Businesses**

ChatGPT. Microsoft Copilot. Google Gemini. Anthropic. Llama. NVIDIA. There's been a lot of attention paid to these products, platforms and companies this year. And fair enough. These AI innovations — and many others — are forming the backbone, the model, the infrastructure for what will be a tidal wave of AI applications in the next few years that will significantly alter the way we do business.

Where was AI really making a difference? Where was the money being spent and where was the actual return on investment for the businesses spending it? Here's where: customer service chatbots. If you're looking to invest in AI for your business, this is where you can make money.

From a business perspective, we're told that AI software will soon drive autonomous vehicles, operate robots, independently fly drones, spot thieves in stores, make smarter decisions than humans, be sentient. And I believe that this will all one day be true. They will be the killer apps of tomorrow once they've been developed, tested, matured, used. But not now. Not today. These AI technologies are still in their most nascent forms.

Today's killer AI app for business is the customer service chatbot. It's where the big corporations are spending their money. It's where software companies are investing. And it's where businesses of any size should be leaning in.

These are not the pre-2022 chatbots. The ones that needed specific commands and could only respond in very precise, robotic and narrow ways. These were limited, and unfortunately there are plenty of those chatbots around (try filling a prescription with CVS on your mobile device, for example). But that's changing fast, thanks to generative AI.

Microsoft Copilot lets us create a presentation faster. Google Gemini can perform faster and more accurate searches. The TSA allows us through their gates with face recognition. My Alexa-driven speaker understands me when I ask for the time. My Xfinity remote can bring up the latest episode of "Curb" on command. All of these are wondrous but — like the Blackberry — will pale in comparison to the AI functions that will come tomorrow.

Forty-seven percent of corporations responding to a Gartner survey said that they are focusing their AI efforts on "customer-facing" activities, by far the highest percentage of all other uses. A survey of AI decision makers by venture capital firm Andreessen Horowitz found that approximately 60 percent of them were using AI for knowledge management and customer service, also the highest usage of any other

application. Deloitte reported last year that some 80 percent of contact centers were actively engaged in some stage of AI deployment. Many of these efforts are now starting to see the light of day today, and they're performing like humans. Even better.

For example, I previously wrote about Klarna, the buy-now-pay-later platform that licensed OpenAI's large language model to build a chatbot that it claims does the work of 700 customer service reps. Bank of America says its chatbot called Erica surpassed 1.5 billion interactions. Starbucks has deployed its chatbot to help customers choose and order coffee. Marriott's AI-powered virtual concierge even fooled me the last time I called to book a dinner reservation. This is AI being deployed right now and for big ROI. And big companies are spending big bucks — as much as \$18 million per enterprise last year — for mostly chatbot-driven AI customer service applications. And that's just from a survey of about 70 companies. All told, companies are spending billions on AI chatbots.

When big companies spend this kind of money, the technology itself ultimately becomes commoditized, costs fall, and small and mid-sized organizations can take advantage. And that's exactly what's happening with chatbots in the customer relationship and service management space.

Within just the past two years, software leaders like NICE, Salesforce, ServiceNow, Zendesk and even marketing platform HubSpot have announced their own or partnered with AI-driven chatbot functionality that allows their small and mid-sized customers to answer queries, analyze data, predict outcomes, suggest products and services, train and advise human reps and overall get answers faster to their customers than ever before.

The general public doesn't have (or at least we don't have access) to AGI — artificial general intelligence — technology that literally gives consciousness, feeling and human understanding to inanimate objects. Our AI today is still in its very early, rudimentary stages.

However, the one mature area of AI that has proven ROI in the real world is the customer service chatbot. So, if you're a business owner or manager looking to make investments in AI, my recommendation is to start there.

# **These Are Five New AI Tools for Google Workspace Users to Check Out**

Last year, J.P. Morgan CEO Jamie Dimon said that AI could be “as transformative as the Internet or electricity,” and Elon Musk said that AI would “be smarter than the smartest humans next year.” Wow.

That’s all fine, but “transformative” and “smarter than humans” aside, how can all these great and glorious AI tools provide someone running a business with value right now?

As I write this, countless software companies — big and small— are working on adding AI-driven features to their business applications. One of those companies, of course, is Google, which last year offered Gemini, its AI Assistant for Workspace, which aims to automate many functions from document creation to writing e-mails.

Gemini costs \$20 to \$30 per month per user depending on the size of your organization. But if you don’t want to jump in so quickly, you can now test the waters with a less expensive version (\$10 per month per user) that offers at least minimal functionality that can benefit your business.

## **1. Notes in Meet**

A new AI function in Google Meet will, according to the company, “let you drop the pen and lean into the conversation instead of taking notes.” By turning on this option, you’ll get a full transcript and summary of your Google Meet meetings. This function already exists in competitors like Zoom and is offered by countless startups like Otter and Fathom, so Google is catching up. But I’m glad to see them joining the party.

## **2. Translate for Me**

According to Google, this new AI feature “will automatically detect and translate captions in Meet with support for 69 languages, helping people feel more confident and connected to their colleagues, regardless of language.” I’m guessing you’ll need to have captions on during these conversations so that the tool can do its job. I’m expecting future versions of this potentially amazing tool to literally translate spoken conversations on the fly. But for now, this is super-powerful, particularly at a time when many of us are looking to do more business with overseas customers and suppliers.

## **3. Chat Translations**

The company promises to deliver automatic translations of messages and on-demand conversation summaries in Google Chat. I imagine it will be like the Google Translate app (which is excellent) on steroids and save me time from copying and pasting chat messages into a translator. Like the Translate feature above, this will also be a powerful help to those of us working with customers and suppliers native in different languages.

#### **4. Security**

This AI tool is more geared for your IT team, so you want to make sure they're aware. It's also an additional \$10 per user per month. Google says it will allow "IT teams to automatically classify and protect sensitive files company-wide in Google Drive." Its AI models can be trained to take data that are unique and sensitive to your organization and add additional protections.

Honestly, I'm not really sure what that means and how it works and whether or not it really does provide more security. Also, if you have 10 employees in your company, that's \$1,200 a year, so more investigation should be done by your IT team to assess its value.

#### **5. Vids**

This is another AI tool that, to me, has dubious value right now. It's an "AI-powered video creation app," according to Google that can "generate a storyboard that you can easily edit, and after choosing a style, it pieces together your first draft with suggested scenes from stock videos, images, and background music. It can also help you land your message with the right voiceover — either choosing from one of our preset voiceovers or using your own."

My experience with AI image generators — and, mind you, these are just photos not videos — has been underwhelming at best, and I'm betting that AI tools like Vids will be equally not-ready-for-prime-time. I'm also betting that it will take employees more time than using a decent, already established editing application. But the kinks will ultimately get worked out, and I'm sure this app will mature into a powerful video design marketing tool. But I'm betting it's going to take a couple of years. Or it could wind up in the Google graveyard. We'll see.

A few friendly words of warning:

-Whenever a software company tags a new product as "preview," it basically means it doesn't work completely, and the company is taking no responsibility for its errors — sorry — "hallucinations." So you may want to wait before buying.

-In the same vein, be wary when you see that products — like Vids — are being released to Workspace Labs. That's another way of saying a product isn't ready for prime time and use with caution.

-Companies like Google are feeling the pressure to deliver more AI news frequently, and, in turn, that means releasing products too early. But that shouldn't scare you away, as the sooner you get familiar with these products the more you'll be able to take advantage as they improve.

## **From Promise to Frustration: A Candid Review of OpenAI's GPT Store for Business Owners**

In 2024, OpenAI launched its new GPT Store, a marketplace of apps similar to Apple's App Store, where startups and creators could build applications on top of the ChatGPT large language model, or LLM. At the time, the company claimed that users had already built millions of custom versions of its popular generative AI platform, so this was the natural next step.

The store features "a diverse range of GPTs developed by our partners and the community," the company wrote in its announcement, and encouraged visitors to "browse popular and trending GPTs on the community leaderboard, with categories like DALL·E, writing, research, programming, education, and lifestyle."

I spent a few hours in the store, looking for applications that would help my business. The results were disappointing. Here's why.

For starters, the GPT Store interface is not helpful. There are only a few categories, and OpenAI recommends a dozen or so applications in each. From there, you're on your own to search for apps, and even doing that only turned up a dozen or so options per query.

But the real problem with the interface is that I don't really know my problem. I'm not sure what I'm searching for. Like many business owners, I'm still trying to get my arms around how ChatGPT and AI can help my business. Steve Jobs famously said "Customers don't know what they want until we've shown them," and boy, is that true. OpenAI needs to take that advice and offer some guidance to its business users.

Not knowing where to search, I decided to try out some of the popular apps listed to see if they could provide a business solution. Unfortunately, these apps didn't really work that well for me.

For example, my company sells customer relationship management (CRM) software, so I asked an app called Invideo AI to create a two-minute video explaining CRM. After answering a series of questions, it did create the video which looked...well...weird. The voiceover was unnatural, some of the people were clearly AI created with that alien-like appearance, and other images and videos incorporated had logos because they were obviously taken from other places. It's potentially — potentially — amazing. But it's not something I'd use right now without some serious post-production.

Next, I started to design some marketing materials using the Canva GPT app, and, after a few questions and producing a basic design, I was then redirected to the full Canva site where I would need to pay for more services to create something that was actually usable. I was also excited to create an org chart for one of my clients, and it got off to a good start before — like Canva — hitting a wall and then taking me to its site where I would need to sign up and pay for more features and functionality.

My worst experience was with an app simply called PowerPoint, where I was promised a “high- quality presentation.” It wasn’t. I asked the application to create a short PowerPoint presentation that shows how inflation has impacted the construction industry since 2021. It impressively returned a great example in the app, along with instructions for cutting and pasting the code into my PowerPoint software. But, when I did, only a black-and-white simplified outline was created — none of the data, charts or other statistics I thought I was receiving.

These are just a few examples of the more than a dozen apps I tried.

The takeaway for me is that these “popular” apps are nothing more than a marketing strategy to entice me to the developer’s site where I would have to whip out my credit card to get anything nearly acceptable for my business. On the positive side, they do help move things along faster than creating something from scratch. Like many of today’s AI apps, they get you to the red zone. But it’s clear that I’ll need to pay a human to carry the ball over the goal line. No one’s losing their jobs anytime soon.

Unfortunately, I had worse luck querying for more apps. As I wrote above, I wasn’t sure what problem I was looking to solve. My company sells Zoho CRM, so I searched to see if there were any GPTs related to the application and there were. I tested out a few of the GPTs by asking questions and got decent answers, even scripts to set up workflows and automation. But I was able to get similar answers directly on Zoho’s website and by querying ChatGPT directly, so I’m not really persuaded that there’s any value there. Then again, the GPT apps I used were free, so there’s that. Why are they free? I don’t know.

Which brings up another question: Are all these apps really better than the core GPT Pro that I’m already paying \$20 per month for? I realize that popular apps like Consensus, ScholarGPT and Wolfram promise a more-detailed LLM for research and computations, and they must contain propriety data in their LLMs that ChatGPT’s core platform can’t reach. Or do they?

I’m also concerned about security. Is our data safe? Were these companies vetted? OpenAI does publish usage and branding policies, but the company makes it so easy

for anyone to publish an app that it doesn't seem there's any procedure for ensuring that these apps are OK to use. Is there someone at OpenAI reviewing these apps after they're published? As I'm prompting, am I handing over personal information to Russian hackers?

These are the shortfalls I experience, and they're significant enough to give me pause. But make no mistake: 2024's AI was like 2007's iPhone. It was the Wild West. However, we're just getting started on this journey, and the future looks promising. So, is the GPT store a good resource for your business? For some businesses, probably. But for most companies like mine and my clients, it's probably best to wait for the cream of these apps to rise to the top.

## **These Are the Worst CRM Applications for Your Business**

Last year, USA Today published its list of the Best CRMs (Customer Relationship Management) software for that year. And there were a lot of familiar and excellent applications mentioned.

For example, the best value, according to the reviews, is Zoho (full disclosure: My company sells and implements this product). The one that's highly customizable is Apptivo. Monday, Nimble, HubSpot and Zendesk all made the list. And, of course, Salesforce.

None of this surprises me. All these applications are great. And it's my belief that any business would be well served by any of them. But, unfortunately, these are not the best CRM applications. These are actually the worst CRM applications. And no, it's not because they're inferior products, and it's not the vendors' fault.

These are the worst CRM applications because of how they're generally implemented and used. Software is only as good as the people driving it. And I've found over the past 20 years of selling CRM solutions that, if companies don't do the right things implementing these applications, they'll turn the best ones into the worst.

So what are these "right things"? It actually comes down to one thing: who owns the system and how they're supported. To be the best, these CRM systems need an owner. Unfortunately, many companies don't invest in this person. And so they get the worst.

Every CRM system needs someone — or a small team — who owns it. This person doesn't necessarily have to be an IT person but should be a power user. He or she should be connected to the group that's using the system (i.e. the sales or customer service group) and act in a support role. That person should know the CRM system well and also be given all the resources needed by management to make it a success, including training and the availability of outside experts and consultants.

CRM systems are just databases. The owner is responsible for the integrity of the data in that database. If anything is out of date, incomplete or inaccurate, it's the owner who should be fixing the problem and then ensuring that it doesn't occur again. Internal controls should be established. Fields locked down. Dropdown lists created that force users to enter a specific choice of data. More training applied. More checks and balances put into place.

There's been a lot of talk about AI in the tech world, and most CRM systems are rolling out some amazing AI functionality that can do anything from measuring sentiment and chatting with website visitors to monitoring and giving feedback to salespeople or automatically creating campaigns and landing pages. It's the owner's job to know all this. That person should be in regular contact with the CRM provider and be completely up to speed on all the AI and automation functionality both available and on the horizon so that the team is using the system to its best advantage. I can't think of any better scenario where the best turns into the worst than when a company is paying thousands in monthly fees for a CRM system and then only uses 20 percent of its features.

To that end, the owner — or team — must meet frequently with their vendor to determine what more can be done. Are better reports needed? More integration with other systems? Workflows? Alerts? Automations? All of this would then be the owner's responsibility to implement whether on their own or with the help of a consultant.

One of the biggest issues my clients face with their CRM systems is getting people to use them. Over the years, I've had countless clients complain to me how bad their CRM system is because no one is using it.

CRM systems are not like accounting or order-entry systems where financial transactions are essential to the operations of the business. Owners need to be in the middle of this too. They should identify those 20 percent of users who are advanced and leave them alone. They must pay attention to the 60 percent who need just a little TLC to get them using the system adequately.

And for the remaining 20 percent who don't even know how to turn on a TV, let alone operate a Cloud-based platform? They're the ones who need special attention, training, supervision and support. It's important to remember that just because a sales or service rep isn't great with technology doesn't mean they're not valuable to a firm. But a CRM system is a group database, and, if some in the group aren't entering data, it hurts everyone else.

Finally, the owner of the CRM system must be fully authorized, supported and encouraged by the boss. Whether it's the VP of Sales or the CMO, everyone in the group should be clearly aware that the owner has that manager's full authority to do whatever needs to be done to make the system work. No excuses. No crying. No complaining. It's the company's data and it's a big data world, and the company is making a big investment to help grow sales, provide better service and increase its value.

Many of my clients don't have owners. Why? Because there's a cost. Sometimes, the owner works at a company and can be assigned to support the CRM system. Other times, someone has to be hired. And a typical owner of a 10-user system can expect to spend a day or two a week supporting the system and its users.

All of this requires an ongoing investment, and sometimes companies aren't willing to make the investment. But one thing's for sure: Without an owner, any of those "best" CRM systems will quickly become the worst.

## On AI: Google's NotebookLM Test Run

I'm searching for a part-time administrative assistant for my business. I placed an ad on Craigslist (and don't judge — Craigslist has actually been a pretty reliable place for my job searches).

Fortunately, I wasn't disappointed.

To date, I've received more than 30 decent resumes. That was the easy part. But, unfortunately, now starts the real work: sorting through these documents to figure out the best candidates.

Maybe, I thought to myself, I could take advantage of Google's recently released note-taking application called NotebookLM? I read about it and was intrigued: an AI assistant that could help me figure out the best candidate! Let's do it, I thought to myself.

NotebookLM promises some pretty amazing stuff. It's designed to be a mini large language model, but, rather than using all the world's data, it just provides a conversational way to get insights only on the data you provide it. If the application does what it promises, I was ready to abandon my current note-taking application and use it to help me answer specific questions about my business...like finding the best candidate for a job based on 30+ resumes.

Unfortunately, I was disappointed.

To its credit, NotebookLM was able to grab the resumes from my Google Drive and allow me to add notes. It's designed to generate summaries of each file and allow me to search across multiple notes and files within a notebook, all in that conversational GenAI way that that my current note applications don't allow or even come close to replicating. I'm told the application will also enable me to create summaries and blog posts using the files I've uploaded and the notes created, which can certainly be a productivity tool. I can also share my notebooks with others.

All of this is great. But the reality is that NotebookLM failed at helping me with my resume project. As it stands, it's still not a usable tool for my business. Why?

For starters, the data you can provide it are still very limited. It will only accept PDFs and copied text and not spreadsheets, documents or even URLs from a website. It's not a dealbreaker — I could convert the Word and Doc files into PDFs (or copy them into my notebook) — but the time this took was onerous. It also didn't allow me to

upload all files at once, so I was forced to do this tedious task one-by-one — another annoying time suck. There are still data limitations, and, although you can search and have conversations with data included in notes and files within a notebook, it won't do the same across multiple notebooks.

Unfortunately, its analysis of the 30+ resumes that I (finally!) uploaded wasn't helpful either. I asked NotebookLM to list the candidates that had financial experience, show me those that had college degrees or evaluate based on a candidate's experience with technology firms, and the answers were either incomplete, inaccurate or basic regurgitations of the resumes without any type of insights or help. I get it: There's only so much you can do with the data provided. But these would not be difficult requests if I made them to a human assistant.

What do I want from a great AI-powered note-taking application? It's what most businesspeople would want: the ability to ask questions of all the notebooks and get intuitive answers like an assistant would provide. For my resume project, who is the strongest candidate? Who has the most skills in one area compared to the other candidates? Who's got the most experience? Who has the most education? When the GenAI bot hits a wall because there's "not enough information," what more information is needed and how can the application get it for me?

Am I asking too much of this application? I don't think so. I'm doing this all manually. Because NotebookLM doesn't do the job, I have to do the job for it.

I'm filling out a spreadsheet that includes each candidate and their qualifications and my observations from these resumes, which I'm sharing with my team so they can more quickly evaluate. This is a mundane task that can easily be automated by a good AI note-taking application. I think that NotebookLM will ultimately do these kinds of things. But it isn't happening yet. Like every other AI product offered by big tech so far, it's more "wait and see what will happen!" instead of "this is happening now!"

To be clear, this is an experimental product. Google says this all over the place with an offer to "try it now," not "buy it now." Its landing page literally quotes tech site The Verge's conclusion that the platform is the "messy beginning of something great."

I couldn't have said it better.

## **On AI: 5 Good AI Apps for Your Business**

There's a lot of AI hype going around and a countless number of products that are promising to change the world and your life with just a push of a button.

That's all well and good, but we've got companies to run. So what's really real for your business right now?

Many of these apps, in my opinion, are not ready for prime time. For example, the potential for text-to-image and text-to-video is exciting, but right now these apps are in their infancy; and both the images and videos generated look like they were generated. Apps promising "productivity" and "automation" are mostly just doing what ChatGPT does either for free (version 3.5) or for a nominal fee (\$20 per month for their ChatGPT Plus version).

However, there are a growing number of reliable, legitimate AI tools that can help increase productivity in your business. I've listed five below. Please know that there are plenty of competitors in each category, and I'm using these five applications as examples for a specific business use case. Also know that some do lean on ChatGPT, and, who knows, with all the competition, how many of these will be around in a year? That said, I'm recommending these applications to my clients who are interested in dipping their toes into the world of AI not for fun but for help running their businesses.

### **Headshot Generators**

These are applications that use AI to pretty-up existing photos and make them clearer, more professional and more appropriate for business use. Apps like ProfilePicMaker can take a simple selfie and then remove or replace backgrounds, touch up your skin and even change the clothes that you're wearing. Business owners can use the final product for their websites, social pages and other marketing materials. So can their employees. It's less expensive than a professional photographer, and it's quicker.

### **Chatbot Builders**

AI-based chatbot builders like Droxy.ai will create a knowledge base of information that can be searched conversationally by your employees or made available publicly on your website. For example, you can upload your entire website, any videos you've

made for training or product demonstrations, or PDFs of spec sheets, quotes, proposals, instructions and contracts. Yes, there's a little heavy lifting up front. But, once uploaded, the information is available for people to ask questions about like they do with ChatGPT, but the answers come from your information — and they'll get better as the chatbot gets better trained. Frustratingly, these applications don't yet allow us to upload actual data from our accounting, CRM or HR systems, but that time will soon come.

### **Automation Tools**

Products like Zapier, Workato and Make have been around for a bit. But now all of them are using AI to up their game. These products can connect to hundreds of existing accounting, collaboration, CRM and project-management applications and then allow users to set up triggers which then automatically launch a task. Examples: “automatically send a customer an e-mail when their invoice goes over 30 days,” “send a candidate a rejection letter when we change a field in our database to rejected,” or “implement these onboarding tasks when a new employee is confirmed in our system.” These tools are powerful, require almost no programming experience and can span over multiple applications so you've got a one-stop shop for building automation that's not reliant on the functionality of any one software product.

### **Website Builders**

There are plenty of established website platforms — Wix, Squarespace and GoDaddy are just a few — that make it very easy to build a new site. But the new generation of AI-based builders, like Mixo, are taking things to a different level. With these tools, you or an employee can type in a written description of the site desired, and the builder starts building. Because it's conversational AI, you can instruct it to make changes, set up your domain and add security just like you're talking to a Web designer. Soon enough, we'll be giving these voice instructions instead of typing. For businesses that like to set up numerous sites or landing pages, these AI tools are significant time savers, and their quality continues to get better.

### **Simple CRM**

Some AI platforms — like Durable — are taking the website-building process to another level. The application does a lot of what tools like Mixo does, but it then also offers basic accounting and CRM functions like invoicing, lead capture and automatic e-mailing. It also has an “AI Assistant” that can answer questions and do research like ChatGPT (maybe it is ChatGPT behind the scenes?) as well as the ability to write blogs based on information on your website or from other sources. For very small

and mid-sized businesses that want to get up and running quickly online and then be able to capture leads and do invoicing, it's a pretty good tool to try.

Most of the applications that deliver these business processes provide some level of free access and are all nominally priced. And, yes, as mentioned above, many are young startups and for all I know may not even be around in a year or so. But there's little risk in trying them out — they're accessing your data, not storing it. What's important is taking the time — or committing an employee to take the time — because, if used the right way, all these tools can provide significant cost savings and increase productivity. Ignoring them is not good business.

## On AI: Here's How to Chat With Your Company's Data

Let's say you're a contractor or running a business in the construction industry. And you've got questions like these:

*"I'd like to use a design from a prior job and get recommendations for applying it to this new project."*

*"There's a piece of equipment we're using, and I need specific instructions for using it."*

Or like these:

*"We're installing a helical pile. Do we need to load test? What have we done before? What does the manufacturer recommend?"*

*"How do the submitted electrical bids for this potential project compare?"*

Or these:

*"We need a storm water pollution plan that addresses the requirements of this project and is in compliance with regulations in Florida."*

*"What slope is needed for drainage on this site?"*

Where do you go for this information? You can search the Internet, where results can be dubious and potentially inaccurate. But wait...don't you already have a lot of this information in your own files? If you've been in business for a while, you probably do: e-mails, bids, estimates, documents, contracts, design plans, manuals. But there's a problem: There are thousands of these files, which makes it very time consuming to search them, let alone know if you're coming up with the best or most current data.

That's one of the biggest issues I see with generative AI. There's no one place to get your information and then ask more questions about it to arrive at the best answer. But companies need to access the data in all their databases and file systems so they can make the best decisions. The good news is that several startups in different industries are tackling that issue now.

One of them is Constructable, a fairly new company that recently graduated from startup accelerator Y Combinator. Constructable is focusing on the construction industry and has begun to consolidate the information from files found in multiple places into its proprietary large language model that can then be trained to provide specific information to a company from their past data as well as external sources...just by chatting in one place.

“We’re really focused on commercial general contractors, and especially project managers,” says Emma Nazim, one of the company’s three co-founders. “We’ve talked to a number of people who are just spending hours a week trying to answer questions that they need to keep the project moving forward, and also to make sure that they’re preventing mistakes.”

Making mistakes is obviously the biggest concern for any project manager, particularly when building things. Constructable is designed to provide quick — and most importantly accurate — answers to their questions.

“If you ask a question and we find two data sources that have a different answer, we’re able to surface that,” she says. “We’re getting better at figuring out the best answer.”

Large language models that consolidate data from multiple sources are not just a construction industry need. I know many business owners and managers in other industries who desire the same thing from AI.

For example, I have a manufacturing client that collects data in its order entry and inventory systems as well from sensors on some of its equipment on the shop floor and video cameras on their forklifts. I know many businesses in the service industry that store information in separate systems tracking time, materials, expenses, job progress, client communications and contracts. I have distribution clients that are managing their warehouses through various software to track inventory, security, temperatures, safety and product movements.

And I personally know a dozen construction companies that are using multiple systems used for project management, accounting and job costing as well as estimating and design. Some are even testing drones for site surveys and using augmented reality headsets for training and remote management. Regardless of the industry, all these companies have files and information in their payroll and customer relationship systems. All of them use either Office 365 or Google Workplace.

There’s data everywhere. How do you chat with it all in one place? That’s the challenge being addressed by Constructable and other startups like it. And it starts with files.

Constructable’s Cloud-based modelling is first pulling together information from the documents, spreadsheets and e-mails stored in Office 365, Workplace and Procore — a popular construction industry management application — into one place for its

customers to converse, query and get the information they need to estimate, run jobs, communicate with customers and manage their business.

“We’re really heavily focused right now on the documents,” says Nazim. “We’re pulling information from bids and RFI/RFPs (Request for Information/Proposal), and then we’ll continue to expand that as we build out the product and actually help with answering questions that come from more structured data.”

Nazim also says that a model is being built to access the files in the design and engineering platform Autodesk. Future versions will expand to not only include more data from popular construction industry applications but also images and videos from job sites.

The aim is to provide quick and accurate information from these places in conversational form.

“We tell our customers think about our AI technology as having a smart and fast reading assistant,” Nazim says. “How would you talk to your coworker? Don’t think about it in the context of what would you type in the search bar, but how would you actually ask a person what you’re looking for?”

## **On AI: Both Microsoft and Google Are Facing a Looming AI Backlash**

Recently, both Microsoft and Google released their latest generative AI applications for businesses.

Drawing on its ownership of OpenAI's technology, including ChatGPT and Dall-E, Microsoft introduced Copilot, its advanced AI assistant that helps Office 365 users write better e-mails, more easily create PowerPoint presentations, analyze complex spreadsheets, manufacture quotes and proposals from various sources and even — and I'm not kidding — allow a Teams user to attend more than one meeting at the same time. Google, not to be outdone, introduced similar AI functionality — called Gemini — for its Workspace platform.

Both tech firms have announced what their added AI tools cost. And they cost a lot. Both companies charge \$30 per month per user for any organization that wants to use Copilot or Gemini. Which means that my company, for example, with only 10 users, would pay \$3,600 a year for AI. That's a lot of money. And for what? A nascent, unproven and potentially unwieldy tool that could likely create more problems than it solves?

Most of my clients use either Office 365 or Workspace for their office systems and, anecdotally, most agree. They're not going to pay. And that's a problem for Microsoft and Google.

Why? Well, we've been to this rodeo before. And we all remember "Clippy." AI is still very new. Most businesses are still trying to get their arms around the benefits of this technology and how they can use it in their businesses. Other than poking around with tools like ChatGPT to help create a recipe or write a blog post, a typical manager or office worker will need time to truly understand this functionality. Training and education will be needed, and people are going to be frustrated by this. They're going to ask why the glorious, earth-changing, mind-blowing promises of AI, which is supposed to increase productivity and reduce overhead, is actually creating higher costs and an added burden.

More importantly, and, given the security, privacy, accuracy and bias concerns we all have around this stuff, many of us will feel reticent about using — and paying for — these tools until we are very confident that they actually work and can be relied upon. Oh, and we're even less confident in the integrity of our databases to truly leverage AI too.

Earning this confidence is in itself a substantial feat, given that anyone over the age of 40 who's used Microsoft products knows that they're never ready for prime time until after at least their third iteration. Ever wonder why Microsoft software doesn't power airplanes or run self-driving cars? Just ask the people at Tesla, Waymo and other companies. Their autonomous vehicles are frustratingly slow to market because any glitch could prove fatal. For Microsoft and Google, their AI tools can (and will) make lots and lots of mistakes and those will be chalked off as "bugs" that will be "fixed in the next build" or will improve once their AI products get "better trained."

And we're expected to pay for this all the while?

I was surprised when both Microsoft and Google announced that organizations will have to pay an extra price to use Copilot and Gemini. If you haven't figured out by now, I'm skeptical of the strategy. I'm expecting a backlash of organizations that feel the same way.

My company and my clients already pay for Office 365 and Workspace, and our understanding — now that we've been forced into the Cloud-based, monthly-fee model — has always been that software makers would commit to offering better, reliable and more useful software for the same price so we'll continue to pay their monthly fees. How naïve we are. Copilot and Gemini aren't separate, standalone applications like Word or Sheets. They're built into Office and Workspace like any other new feature set. So why charge more? It seems premature and a little bit greedy.

Until I'm convinced that Copilot and Gemini are really worth \$3,600 a year, I'm not buying, and I know I won't be the only one. Despite the inevitable PR and marketing campaigns from Microsoft and Google, I'm betting that both companies will ultimately resort to new pricing levels that will need to be introduced depending on the level of functionality a user wants. Just like any application.

People aren't going to pay for something that's mostly an unknown. My clients aren't able to perceive AI's value until they're actually using AI. Asking them to pay for these tools upfront is premature.

## **AI Has Always Had a Hardware Problem...Until Now**

If you're wondering why — all of a sudden — artificial intelligence has exploded into your life, you're not alone. Many of my clients and friends have been asking a similar question ever since late in 2022 when OpenAI released its ChatGPT product and everyone went Wow!

With such an unprecedented show of how generative AI can conduct very human-like conversations and provide (mostly) accurate answers, every other tech company from Microsoft to Google to Salesforce suddenly jumped into the fray with their products. And from there, countless apps, startups and entrepreneurs have been flooding the market with their products in the hopes of becoming the next big thing.

But why? AI's been around for a while. But it's only in the past year or so that it's received so much public attention. What happened? The answer is: hardware. And like most things, it's not just one part of hardware. It's actually three hardware things that have come together to form a perfect storm that created this new technology wave. What three things?

The first is about storage.

According to data from Our World in Data, in 1990, the cost of a terabyte of data was a whopping \$7.4 million. What does it cost now? \$14.30. And, no, I'm not misplacing a decimal. Are you, like me, old enough to remember those 1.4 MB floppy disks? Thanks to the plummeting cost of materials and economies of scale, a megabyte in data, which cost \$9,200 in 1956 (that's about \$85,000 in today's dollars) now costs just \$0.00002. I'm an accountant, and I don't even know how to read that number; but it's clear that storage is definitely dirt cheap.

AI is driven by large language models, which are simply huge databases that are being trained to predict responses and come up with correct answers. AI doesn't work without an enormous data set to query. ChatGPT's knowledge comes from pretty much the entire Internet since the beginning of the Internet. The company has scraped countless terabytes of data from the Internet to be captured into its LLM and scanned as much data from other sources. Then, for years, it trained its algorithms on this dataset. But none of this would have happened if each terabyte cost \$7.4 million. Thanks to storage becoming so cheap, the LLMs can store almost limitless amounts of information for artificial intelligence to become...well...more intelligent.

So that's the first big hardware reason why AI has exploded. The next reason is processing.

According to The Economist, the price of computation today is roughly one hundred-millionth what it was in the 1970s, when the first microprocessors became commercially available, which is another number I can't really comprehend. You don't really need to know what a Gigaflop is, other than it's a measure of floating point operations per second that a processor can perform. Suffice it to say that, in 1993, this number was in the hundreds. Now it's at a billion...per second. The takeaway is that, thanks to the same economies of scale and Moore's Law, our processors today are literally hundreds of millions of times faster than they were less than 30 years ago.

Besides data, AI needs lots of processing. Take a self-driving car, for example. Elon Musk told podcaster Lex Fridman back in 2021 that making his Tesla vehicles fully self-driving turned out to be "a lot harder" than he thought even with all these incredible advances in processing speed and storage size. That's because the AI behind a self-driving car has to process an indeterminate amount of data from video, audio and other inputs and then make a decision within a split second; otherwise, a puppy could be run over by a Tesla...or even worse (if there is such a worse thing).

Ultimately, Musk and others will succeed with self-driving vehicles, but it's still going to take some time. However, we can today avail ourselves of the fast processing times being leveraged by generative AI tools that give us quick answers to our questions because this takes less processing than a self-driving car, or a robot or other devices that need to instantaneously make decisions like a human.

So there's cheap storage and fast processing and then one other hardware thing that's needed to really make AI work: the Cloud.

No, not this cloud. I mean Cloud computing. All those millions and millions of servers processing information from all over the world and then delivering output back to our phones, cars, computers, tablets and other devices making the request. Storing all that data on a device isn't affordable, nor are the processing chips needed to run those queries. The reality is that you can't have the entire Internet stored on your phone right now.

But maintaining this information on all those computers in the Cloud means we can leverage all that storage and processing and then get our answers from multiple places immediately. The Cloud market has grown from about \$145 billion in 2017 to about \$615 billion and is projected to grow to \$849 billion by 2026. AI is fueling this, thanks to its hunger for more and more data to be delivered.

Huge amounts of storage space. Lightning-fast processing. Servers all over accepting and delivering information.

None of this happened overnight. But it's only been in the past few years when these three things passed their tipping point of usefulness and thus have made the AI experience that we're now having feasible. That's why AI is all over the place. It's slower-than-expected growth was never a software problem. It's always been due to hardware limitations. We've still got plenty of hardware limitations. But you can expect those limitations to work themselves out in the coming years.

## **On AI: If You Want to Really Understand AI's Benefits, Ask Your Banker**

We hear a lot about AI and what it will be doing in the years to come to (hopefully) better our lives and our businesses. But for some industries — particularly those in financial services — AI is real and already in use.

Your financial data are — not surprisingly — one of the top targets for hackers. While global cyberattacks have increased by more than 8 percent over the past year, the financial industry has seen a “staggering” 1,318 percent increase in ransomware attacks, with over half of financial institutions falling victim to at least one ransomware attack in 2021 alone, according to security firm SOCRadar. Other research has found that fraud at credit unions has also increased by a whopping 70 percent over the past year.

This is a battle not only for your financial security but for the viability of our financial services industry.

One of the biggest reasons behind this surge is the growth of AI development tools that are enabling attackers to increase and better target their attacks. But — to protect your data (and their profits) — the banking and financial services industry is fighting back, and with their own AI-based weapons. This is reality now for this industry...and the future for just about every other industry. So how are they fighting back?

### **Spotting Trends**

For starters, many big financial services firms are digging deep into their own and others' large language data models by training AI to learn about customers' behaviors and ask questions like “Is this something this customer normally does?” or “Does this transaction make sense given the customer's recent behavior?” or “Is it reasonable that a customer just bought a product in London on the same day they were having dinner in Los Angeles?”

Credit card processing giant Mastercard, for example, is using AI to track the movement of scammed funds through “mule” accounts and analyzing account names, payment values, and both payer and payee history to identify unusual trends and fraudulent activity and then reporting its findings (and warnings) to member banks.

PayPal is rolling out software to “track all permutations” of addresses and personal information to predict consumer usage and identify unusual patterns — like

patterns where criminals test out a credit card before using it — while alerting processors, banks and consumers.

Danske Bank in Denmark and J.P. Morgan Chase are both implementing deep learning AI tools to detect fraud, automate decisions (like freezing an account) and alerting security analysts. AI is also being used at these institutions to detect and quarantine malware and provide an early-warning system for suspected attacks.

### **Validating External Data**

As I've written in the past, data accuracy is critical when deploying AI. So, even with all the automatic routines designed to spot trends, AI is expanding its language models to verify and validate internal data against external data sources before making its decisions. Because maybe a transaction that seems irregular isn't so irregular when other sources are looked at, like sites that contain travel, buying and online behavior. I know this sounds creepy, and there are all sorts of privacy concerns. But the benefit is added security and a better experience for customers because who wants their credit card declined when it doesn't need to be?

### **Using Generative AI**

Generative AI is also being used to defend against cyberattacks. Many IT departments at banks around the world are using tools like ChatGPT to quickly write scripts and algorithms to help them neutralize incursions. Customized generative AI tools are also being used to create response plans, send alerts and provide — and even perform — actions when an incident occurs. They can even automate tasks like launching applications or automatically writing scripts to do things like automatically disabling unused accounts that may contain sensitive information that could be exposed by hackers.

### **Step Up Communications**

Finally, AI is being deployed to improve communications at financial institutions, because the quicker everyone knows about a problem the faster it can be addressed. So, when problems arise, new AI tools are learning not only what actions to take but which humans should be alerted. Reports and analysis are also able to be generated faster and sent to targeted individuals based on the data included. And of course — and assuming the data are reliable — AI communication tools are alerting customers and external parties when there's a problem, requesting specific information to allow access, asking for responses via chat and e-mail, and helping to instruct customers to better protect their financial data.

Of course, there are many other uses for AI that don't have anything to do with security — like enhancing customer service and automating wealth-management activities — and that's a topic I'll take up in the future. But from spotting data trends to automatically performing tasks, the banking industry is leading the way in AI deployment because, when it comes to securing data, they have to.

Why? Because would you leave your money with a financial institution that didn't do these things? Without this technology, our financial information (and money) would be at a much higher level of risk. As this industry breaks new ground in the use of AI, it won't be long before businesses in industries from manufacturing to construction will be using these same tools for similar uses.

## The Importance of Customer Centricity in AI Strategy

With a 65 percent global market share, Intuit is one of — if not the — world's largest providers of accounting and financial software for small and mid-sized businesses. So, when the company announces its plans for utilizing artificial intelligence, I'm paying close attention, and so are many accountants like me — and our clients.

Intuit's AI strategy, which the company published in 2023, is very broad. In an effort to “revolutionize speed to benefit” the company wants to do a better job “connecting people to experts,” unlocking “smart decisions through more intelligent reporting and analysis,” being “the center of small and mid-sized business growth” (which is a nod to its acquisition of the popular e-mail marketing platform Mailchimp) and helping to “disrupt the small and mid-sized business market.” The company will be doing this by using AI.

Sounds great, and, when you're Intuit, you have to be broad. The company's products focus on accounting and financial transactions but range from tax preparation (TurboTax) to personal finance (Quicken) to small and mid-sized business (QuickBooks and Mailchimp) among many other offerings.

Which is why there's a problem with Intuit's AI strategy: It's not helping us understand how they will help to solve my clients' problems.

Of course, a company wants to use AI to do all these things for its customers. But Intuit's customers — like those of any software company — are diverse and have specific needs. Business owners, managers and their accountants need to know exactly how their primary software vendor is going to use AI to solve their specific problems. And there are different problems depending on the product they're using.

Let's take QuickBooks as the example.

All my clients suffer from erroneous data. They need help ensuring that the information that gets into their QuickBooks system is complete and accurate, updated and reliable. How will Intuit do this with AI? Better and more intuitive importing? A more reliable method and interpretation for scanned invoices, receipts and other documentation? Data entry by voice?

Speaking of voice, everyone needs faster and more reliable analytics, but few of my clients know how to get the information out of QuickBooks that they need to run their businesses. Most of them have to wait for that information to be available, and then it's still being delivered in very old-school ways like PDFs and spreadsheets. Can Intuit enable its users to voice their commands and then leverage AI to interpret

those requests and automatically generate reports, dashboards and other output that can be immediately reviewed? Can that same user then make additional requests via generative AI which further hones the output into a more-relevant report?

And what to do with that data? Future iterations of AI — like AutoGPT — should be able to use that data to automatically perform tasks, such as reorder inventory when low, alert when a sales rep isn't making quota, prompt a customer for a new order, initiate invoices, create and post recurring journal entries based on past history, instinctively match cash receipts with open invoices, automatically complete and file tax returns and independently reply to requests from customers, suppliers, even the government.

Intuit wants to “connect people to experts” which is aimed at not alienating its channel (and experts will be needed to advise and configure all these features), but, in the end, my clients want AI to be their expert. They want their financial systems to recommend ways to make profits, suggest complementary products to sell to customers, warn if expenses are trending in the wrong direction, suggest tactics for improving margins, compare their results with external benchmarks and propose ways to grow revenues.

Right now, there are some excellent third-party products that integrate with QuickBooks and aim to fill this AI void. For example, Bill, Vic.ai, ScanWriter and Expensify use AI to systemize data entry and process transactions. Booke.ai automates bookkeeping, and Grabb not only sends alerts about changes in customer purchasing behavior but provides recommendations about supplemental or add-on products that could be sold and in what time period.

That's great, but, with all due respect to those companies, dealing with other parties creates complications and support issues. We want this coming from our main software provider — QuickBooks — and not through integration with someone else.

Intuit's AI strategy is fabulous...for Intuit. Many other tech companies with multiple offerings like them are publishing their AI strategies that are also fabulous. But the problem is that they're focusing on their own corporate interests too broadly.

My small and mid-sized business clients who use products like QuickBooks don't really care about Intuit's overall strategy. They care about how AI will solve their problems. They want their software platforms to do more on their own instead of requiring more staff and overhead. They're also hoping the “intelligence” of AI will be to interpret information and then act as their advisor, making adjustments and

recommendations based on what it's learning so that they can focus on running their businesses.

## **On Technology: The Major AI Problem Facing Insurance Brokers That Microsoft, Google and ChatGPT Won't Solve**

Let's say you're running an insurance agency. You sell different types of policies. You may represent various insurance companies. Maybe you specialize in commercial insurance, so you offer property, auto and liability coverages for businesses. Or perhaps you sell life insurance to individuals. Or maybe health insurance plans. It's a good business. But you're about to face a big problem: artificial intelligence.

That sounds kind of strange, right? The whole world, let alone the tech industry, is romanced by the potential of AI. And the hype is believable. Just look at changes that are coming in the very near future that will significantly impact your business.

Fairly soon, both Microsoft's and Google's business applications will include AI tools that will help insurance agents write better e-mails, perform deeper spreadsheet analysis, create automatic sales presentations and even attend more than one meeting at the same time! ChatGPT, which is half-owned by Microsoft, has released a new version that allows developers to create conversations, provide insights and perform client service and marketing actions not only based on external online data but on their own internal data.

Customer relationship management systems like Salesforce, Zoho, Copper and Microsoft Dynamics, which are used heavily in the insurance business, are being retooled to not only read and understand customer and prospect data but to automatically and more intelligently perform outreach, respond to questions, chat with website visitors, send automatic e-mails, deliver forms and prompt agents to remind them of renewal dates, birthdays, anniversaries, policy lapses, overlooked clients and potential new products to sell.

Human resources platforms from Paychex to Gusto to BambooHR will be better at onboarding employees, managing feedback and performance reviews, coordinating paid time off, automating benefits applications and form-filling. HR technologies like HireVue and VidRecruiter are improving their AI video capabilities to better evaluate prospective employees while limiting bias. New AI-leveraged platforms like Workable and Greenhouse will continue to help their clients create and place better ads while more efficiently tracking and qualifying applicants.

Agency management and marketing systems like Agency Revolution, Indio and ImageRight — among many others — will better integrate with insurance company

platforms to deliver up-to-the-minute policy information, workflows, reminders, customer self-service help, better client onboarding and automation of forms processing while guiding users and agents to choose the best policies.

A lot of this is available even now. A lot more is coming. All of it will be better, cleverer, quicker and more autonomous once these software companies get smarter about their own capabilities and begin rolling out improved functionality leveraging AI.

It's great. It's exciting. And it's a problem for insurance agencies. Why? I offer one number to explain the reason: 66.

What's so important about 66? According to Zippia, a research site for job seekers, approximately 66 percent of the almost 145,000 insurance agents nationwide are over the age of 40, and only 11 percent are under the age of 30. The average insurance agent is actually 46 years old. What's even more concerning is a typical insurance agent only stays at the job for 1-2 years. Which doesn't bode well for the younger group to make it into the older category. The insurance industry needs younger people. And it needs its older managers to think younger.

AI is new. It's exciting. It's game-changing. But, like any new thing, it will require an enormous amount of change. It will involve risk. It will rock the boat. Mistakes will be made. Employees will need assurance. Clients will need care. Agency firm owners and managers will need vision, self-confidence and the desire to adapt for the sake of growth and future profitability. Older people tend not to do this. They're more set in their ways. They've invested years in creating their own processes and systems and are reluctant to change unless the return on investment is significant and can be assuredly proved.

"If it ain't broke, don't fix it," we say.

The insurance industry doesn't have an AI problem. It has a demographics problem. Smart agents — both younger and older — will recognize this opportunity and pounce. Larger insurance companies that cannot bring those channel members who resist this change into alignment to take advantage of this new world will be forced to leverage AI tools to do more of the selling and servicing themselves and leave those older agents behind.

This is not a problem that will just impact the insurance industry. Other industries have similar demographics. But, unfortunately, this is a problem that Microsoft, Google, ChatGPT and all the other software vendors won't be able to solve alone. They can't put a gun to the heads of their users and tell them to leverage their AI

tools. At some point, it's the users, the agency owners, who need to understand AI's value and embrace these changes.

Many older users will resist. And, unfortunately, it's the older people who make up two-thirds of the agents in this country. It's one of the biggest challenges that will face the adoption of AI in this industry over the next few years.

# **On AI: Here Are Six Critical Things Every Business Owner Should Know About Google Gemini for Workspace**

Google launched its official AI offerings to keep pace with Microsoft and ChatGPT. But it's common knowledge that the search giant still has a long way to go before its AI applications are really having an impact. So it's still early days. But rest assured, Google will be a leader in AI, and you can expect many new changes in their apps that will have a big effect on your company. If your business is in the Google world, you should start getting ready. Here are six things you should know.

## **1 – There Were Actually Three Google AI Products to Consider.**

Gemini is the company's generative AI product that rivals ChatGPT and is available for you to try, although still officially in beta. You can use it right now in your business to do many of the things that ChatGPT does.

Gemini is also an early-stage developer tool that's aimed at both programmers and power users who want an easier way to create apps and AI functionality. If you're thinking of building custom apps in a Google environment, this tool can already save development time.

Gemini for Google Workspace is the AI feature set that is targeted at Google's business and productivity applications like Docs, Sheets and Gmail and is available for pre-order only for enterprise customers with a general release planned for year end.

## **2 – Gmail Already Has AI.**

If your company is using Gmail, you've already got AI because Google's been adding these features behind the scenes for the past few years. For example, when you reply to an e-mail, you've probably noticed that Gmail is automatically creating suggestions. Or you can also use the "Help Me Write" option to suggest responses. This will become significantly more intelligent over the coming years as Gemini looks at what you're writing, who you're writing to and what data you may need from other sources and bringing that information in to help you create better e-mails. My suggestion is to start familiarizing yourself with these features.

## **3 – AI in Docs, Sheets and Slides Will Rival Microsoft.**

I wrote previously about the upcoming functionality that will be offered by Microsoft's AI tool called Copilot, and, rest assured, Google is going to keep pace. Gemini features in Docs will very soon suggest better ways to write memos and

quotations and create templates. The same goes for Sheets where Gemini will also create templates, analyze existing spreadsheet data, suggest formulas and offer insights into your data. Slides will be able to create images like “show a dog swimming in a river” just by typing your command. Will Workspace be a better solution for your business than Office or Teams with all these new AI features? Given what I’ve seen so far, and Microsoft’s dominance in the business application market, I’m still betting that the software giant will keep an edge with Copilot over Gemini. But time will tell.

#### **4 – Gemini Is Already Leveraging Google Search.**

Google Gemini is leveraging its powerful search algorithms and current data to (hopefully) provide more up-to-date and accurate information. When it comes to accessing external data, Gemini — thanks to Google’s superior search technology — is going to provide better results. This could be a game-changer when the time comes to marry your internal information with external data.

#### **5 – Future Plans Will Require You to Have Good Data.**

Gemini relies on access to the best available external data to help your business, and you’re going to have to make sure your company data are up to par too. That’s because these AI products are going to be leveraging your internal information in the future to help you send e-mails, analyze customers, create forecasts and financial models and better understand where the profits are. If you want to fully take advantage of these AI tools, you’ll need to make sure your internal data are complete and accurate, and I’ve previously offered some advice to accomplish this.

#### **6 – Google Gemini Is Assisting You and Your Employees, Not Replacing (All of) Them.**

Google Gemini is an assistant. It is a taskmaster. It will do research and make suggestions and recommendations and offer insights. It will ultimately perform manual tasks automatically. In the future, you will be able to give Gemini command to perform tasks like “Find all customers who bought this product and send them an e-mail recommending an accompanying product” or “When inventory of this item falls below this price level, e-mail the vendor and negotiate a price between two and four dollars and when agreed send a purchase order.”

It will enable your existing accounting, marketing, sales and operations staff to do more during the day, which means you’ll be able to get away with hiring less people and avoid incurring more overhead. But it will never be perfect, and, just like the best assistants, it will always need human supervision.

The smartest business owners I know aren't afraid of AI like Google Gemini. They're embracing it. So should you.

## **On AI: Microsoft Copilot Is Going to Be Huge. Here Are Six Critical Things Every Business Owner Should Know.**

If you're one of the millions of businesses that run on Microsoft products, then Microsoft's AI offering called Copilot is going to rock your world.

It will be as pervasive as Windows. It will be as disruptive as the Cloud. It will generate billions for Microsoft, and you will be contributing a little bit to those revenues because you'll be using it a lot. At least, I hope you'll be using it a lot. If you spend the time to really understand the power of what it can and will do, you will be able to significantly — significantly — improve the productivity of your workforce and increase your company's profits.

It's still early days for this, though. But here are six things you need to know about Copilot right now.

### **You May Not Be Able to Use It Yet.**

Microsoft launched Copilot in March 2023 and made it available to a select number of large enterprise clients. The videos the company released look exciting, but these were done in very controlled environments using very limited data and examples. In June 2023, Microsoft expanded the availability of the product to an "invited" list of about 600 customers. Since then, Microsoft has rolled out even more features and integrated Copilot more deeply into many of its applications.

### **Copilot Is ChatGPT on Steroids.**

Make no mistake, this is ChatGPT — but taken to another level. Although Microsoft doesn't share the specifics of its relationship with OpenAI, the maker of ChatGPT, it's been reported that the software giant, which has invested billions in the what was once an open-sourced company but now is turning to a for-profit model, will be entitled to 75 percent of the OpenAI's profits until it recoups its investment (after which it would have a 49 percent stake in the company). Microsoft is also the "exclusive provider" of Azure's backend infrastructure, products and programming interfaces on its Azure platform. Microsoft and ChatGPT are one.

### **Copilot Will Be in Your Face.**

Now that it's released with Microsoft applications, you won't have to look very far to find the Copilot functionality. You're going to see it everywhere. In the available software, just about every screen has a Copilot button to "help" do more. Once selected, a panel will open within the application that looks like a chatbox, and

you're off to the races. Copilot is everywhere in every Microsoft product. Although the company will be focusing on its Office 365 applications, you'll also be seeing more of it in Windows, Bing and most of its developer tools and platforms.

### **Copilot Will Save Significant Time for Your Users Who Learn It.**

In Word, it will create a proposal based on the notes you took in OneNote, customize it to look like your previous proposals and add in artwork or visuals that you request. It can turn a proposal — or any document — into a PowerPoint presentation, add new slides based on your needs and create speaker notes. Excel users will be able to ask Copilot to list trends based on data in a spreadsheet, add new spreadsheets by diving into existing data, generate graphs and charts, apply color coding and perform what-if scenarios. Teams and Dynamics users can have Copilot “listen” to meetings, write up a summary, create tasks and e-mail next actions to participants. You and your employees will need training not only to understand how to use Copilot but where it can be used.

### **Copilot Won't Be Perfect.**

I want to be clear here: Copilot will do all the things above just by asking it. It will suggest better formulas in Excel, propose better wording for an e-mail, make a proposal look more professional with better formatting and graphics and offer ideas for e-mails, policies, memos and other communications. It is literally an assistant that will perform these functions. However, and like any assistant, it's not you. It will not be perfect. All the recommendations, suggestions, proposals and brainstorming it does are to help you and your workers move things along quicker. This will save a huge amount of time doing the mundane tasks that need to be done before people analyze the result. But in the end, humans will be making the final call on any of these changes.

### **Copilot Has One Achilles Heel: Your Data.**

Copilot uses a large language model (LLM), which is drawing on information not just from the Web but from all your internal data sources. It provides all its advice, recommendations and changes based on what it's seeing in Outlook messages, Dynamics databases, Word docs, Excel spreadsheets, SharePoint files and any other internal (and external) information it can find and that it's allowed to access. Privacy issues aside, the biggest problem that it will create for your business is that it will oftentimes be inaccurate and incomplete. That's because your data are likely inaccurate and incomplete. That's a problem that will need addressing, and it's something you can be doing right now.

AI is not something for your tech people. Copilot is not just a product. It is a way to reduce costs, increase revenues and grow profits. If you're running a business, you need to understand it. Otherwise, you're going to be outsmarted by others — particularly your competitors — who do.

## **On Technology: The Achilles Heel of AI That No One Is Talking About**

You can't visit a tech website nowadays without the word "AI" all over the place, and I'm as guilty of this as anyone else.

AI was the tech buzzword of 2023, even though it's not really a word. Previously, it was the metaverse. Before that, it was a myriad of tech terms and acronyms ranging from IoT and AR/VR to robotics, 3D printing, autonomous vehicles, machine learning and Web3 as the tech industry desperately seeks the next iPhone or big thing from which to re-invent itself. Maybe AI is the next second coming or maybe it's overhyped or will be replaced by the "next big thing" in the future.

Regardless of the hype, AI does have a lot of potential, and it's spawning countless startups and billions from investors, VC firms and software providers to realize that potential. We're just at the beginning of this. Over the next few years, every company that has anything to do with technology will be rolling out their next generation of products that is "leveraging AI." It's good marketing.

Except for one problem: AI has a big Achilles heel, and, unfortunately, no one seems to be talking about it. The problem isn't with the technology. It's with what the technology relies on: data.

For AI to do its job, it needs to use data. For AutoGPT, the likely next generation of ChatGPT that promises to automatically perform tasks without conversation, it will have to leverage the information available in a database — or multiple databases — to perform those tasks. For Google's Gemini to create e-mail campaigns or productivity tasks based on Gmail or Google Docs, it will be reliant on the information in those sources. Salesforce's Einstein needs good customer relationship management data to track sentiment and opportunities.

I write a lot about CRM because my company implements CRM systems. Many people in my industry are excited by all the new AI-based automations coming from the software vendors in this industry. Salesforce is already way ahead of the curve with recent announcements touting their AI offerings. Other big technology companies like Microsoft, Meta and Amazon and many CRM software providers that cater to small and mid-sized companies like HubSpot, Zoho and Pipedrive are announcing rollouts of their new features that are using AI. And I'm just naming a few. AI is creating mass giddiness across all software sectors — from CRM to accounting to HR — not only because of its promise but because it's a shiny new

buzzword that can be used to excite customers and — most importantly — keep them paying their monthly fees.

But, like cars that need roads, all this software needs data to do its job. And, unfortunately, the data at most businesses — big and small — kind of...well...suck. Don't believe me? Just talk to a few of my clients and they'll openly admit this.

Even at my largest clients, data are everywhere — spreadsheets, e-mails, document management storage sites, CRM systems, accounting systems, HR systems, inventory systems, order systems, even manual files. Matching orders received with invoices often spit out errors. Building e-mail campaigns is a crapshoot. Automating things like sending out overdue notices or confirming orders received oftentimes confirms with the wrong recipients. Even doing a simple thing like creating a list of customers to send a Christmas or birthday card takes a mass investigative effort.

Did we really just wish that guy a happy birthday? Didn't he die last year? Did we just send our big client a Christmas card? But it's a Jewish deli! You get the point.

At every company I visit, I find that their data are anywhere between “not great” to a “total mess.” Fields are incomplete and haven't been updated in months. People who changed jobs month before are still listed as working at the former company. Inventory balances lag behind physical counts. Billings are done days after products are shipped. Monthly cash reconciliations reveal dozens of missed deposits or disbursements. Are we really going to rely on AI tools to “automate” functions when the data are this unreliable?

That's the problem. Building the iPhone took time. But it couldn't succeed until networks and an app infrastructure were built around it. Creating all these wonderful AI tools is pointless unless the data they're leveraging are leveragable, and, yes, I just made that word up.

Some of this problem can be addressed by future iterations of AI tools that don't take just one source of data at face value and instead are built to validate the information by checking multiple places. So a person's birthdate in a CRM system can be validated by mining an external government system, assuming access is granted. Or before sending out an overdue invoice notice that could upset a good customer who normally pays on time, a payment history at the bank as well as the accounting system can be checked. Are software developers taking these internal controls into consideration as they're rushing out their latest AI treats to their customers? Are they building in the ability to check multiple data sources before taking action? I'm doubting that.

But, ultimately, they will. However, it's going to take some time. Which is why I'm betting that many of the software pundits who are glamorizing AI are going to scratch their heads and wonder why more companies — particularly small and mid-sized companies — are resisting the magic. My clients are no dummies. They're not going to trust automation just for the sake of it, particularly if it causes more problems than it solves.

There will be solutions to this. And my smartest clients who want to take advantage of these tools so that they can cut overhead and get things done more productively will recognize the importance of a clean and complete dataset and invest the needed resources into making it clean and complete. Hopefully, they'll be doing some of the things I suggested in a previous piece I wrote. I'm optimistic about this. But I'm also cautious that, in the meantime, the Achilles Heel of AI isn't getting the attention it deserves.

## **Hallucinations, Inaccuracies, Misinformation: How Tech Companies Are Killing AI's Credibility**

AI is a wonderful thing. At least for the big technology companies making and supporting it. The stock prices of Microsoft, Google, Amazon, NVIDIA and other companies that are in the middle of the AI boom have skyrocketed over the past few years. Billions are being plowed into data centers, infrastructure and hardware to support the new technology's hungry needs. Indirect companies from U.S. Steel to HP to local utilities are benefiting from the construction, energy consumption and compute demands created by this industry.

And yet, the public is not convinced. For most, AI is fun and even a little productive. But AI applications — with their hallucinations, inaccuracies and misinformation — remain unreliable.

A recent KPMG survey of more than 48,000 people globally found that, although about 66 percent of them say they use AI regularly, only 46 percent felt willing to trust AI systems. Another survey by Exploding Topics of more than 1,100 people found that about 82 percent are somewhat skeptical of AI “overviews” in search: 61 percent “sometimes trust” the results, 21 percent never trust and only about 8.5 percent always trust the answers provided. Why?

The same survey found that many users saw significant mistakes: 42 percent reporting say they saw inaccurate or misleading content, about 36 percent report missing important context and as much as 31 percent reporting bias in overview results. Another survey from Gartner backed up these findings, with about 53 percent of consumers saying they don't trust the results of AI-powered searches or summaries.

Even the people writing software are dubious. Another poll of 49,000 professional developers by community and information hub Stack Overflow found that, although 84 percent of them plan to use AI coding tools, only about a third trust their outputs, which is actually down from earlier years. According to the report, their main frustrations are around “almost right” results, which ends up costing extra debugging time.

How can any product that works so poorly be hyped so much?

Blame big tech. Since OpenAI released ChatGPT in 2022, software companies, in an effort to keep up, have been rolling out their AI offerings that have not been ready for prime time. And yet these companies keep pushing their customers to buy their

AI applications and use their AI agents to increase productivity, when in many cases the exact opposite is happening.

According to an August 2025 report from NBC News, AI “slop” (blurry logos, nonsensical text, generic or unpolished writing/code) is forcing companies to hire freelancers, artists, writers and developers to correct or finish what AI got wrong. These companies are finding that many fixes involve more effort than expected, with many saying it’s just easier for the human worker to start from scratch rather than patching what AI produced.

“In April 2024, it seemed like agentic AI was going to be the next big thing,” writes Steven Newman, an AI expert. “The ensuing 16 months have brought enormous progress on many fronts but very little progress on real-world agency.”

It’s easy to blame big tech companies for the failure of their software to actually work. And they deserve a lot of the blame. But so do the companies — particularly large companies — that are throwing hundreds of millions of dollars at this stuff without properly thinking it through.

The New York Times reported in August 2025 that, of the 80 percent of companies using generative AI, just as many say they’ve seen no significant bottom-line impact, with as many as 42 percent of companies abandoning most of their AI pilot projects by the end of 2024, up sharply from 17 percent a year earlier. And yet, the Times reports, businesses continue to increase their investments “aggressively,” with generative AI spending expected to nearly double this year. It’s like they’re gluttons for punishment.

A recent report from MIT said that it’s not necessarily big tech’s fault but rather how customers are deploying AI. It found that about 95 percent of AI pilot programs fail to deliver measurable profit-and-loss impact, and only about five percent of these pilots are achieving rapid revenue acceleration. Those are the ones “focusing tightly on specific problems and executing well.”

The report also found that many unsuccessful pilots didn’t fail because the AI models were bad but because the tools were poorly integrated with existing workflows, didn’t adapt to company needs or lacked learning-capable systems. The report suggests back-office automation, finance and procurement are among the areas where the return on investment is better, but many firms instead are investing more heavily into functions like sales and marketing which are harder to scale.

“The 95 percent failure rate for enterprise AI solutions represents the clearest manifestation of the GenAI Divide,” says Zvi Mowshowitz, a former hedge fund

manager and longtime rationalist/AI commentator. “Organizations stuck on the wrong side continue investing in static tools that can’t adapt to their workflows, while those crossing the divide focus on learning-capable systems.”

He’s right. I use AI for simple applications all the time (for example, helping me to summarize research and content from various sources that I’m using to help write this article). Many businesspeople I know are happily using it to transcribe conversations, write e-mails, create policies and perform rudimentary analysis. For these kinds of activities, generative AI platforms can be very useful.

But Chevaugn Powell, author of “The Trillion-Dollar AI Bubble Nobody Sees Coming,” thinks all this AI hype is creating a bubble not dissimilar to the dot-com collapse in 2001.

“According to research firm Gartner, spending on generative AI will reach \$644 billion this year alone,” he writes. “While, last year those same hyper-scalers generated only \$45 billion in actual AI-related revenue.”

He also points out the vulnerability of the entire industry to new innovations.

“A single Chinese startup (DeepSeek) proved that the emperor has no clothes in Silicon Valley’s AI kingdom,” he said. “When DeepSeek announced it had built an AI model rivaling ChatGPT for under \$6 million, tech markets didn’t just wobble — they absolutely cratered.”

Still, it’s big tech that benefits. The pundits, experts and academics warn us that we “must” be investing in AI or risk falling behind, losing out or even going out of business. But does it make sense to invest in something that clearly doesn’t work very well?

Most of my clients — small and mid-sized business owners — are watching this technology warily. But they don’t trust it. None I know are relying on AI to help run or manage their core business processes. And you can’t blame them. Big tech is hyping products that don’t work very well. And their credibility is getting hurt because of it.

# **I Tried ChatGPT, Gemini and Grok for Image Creation, and They All Failed**

Over the past few months, some of our biggest tech companies have rolled out their image creators with much fanfare. For me, the results have been less than impressive.

“Generate, transform and edit images with simple text prompts, or combine multiple images to create something new...all in Gemini,” says Google Gemini. “Merge up to three images to create something new. Generate surrealist art, combine disparate photo elements, or seamlessly blend objects, colors, and textures.”

“Transform your ideas into stunning images with our advanced image generation technology,” promises X. “X Image Generator is an advanced AI-powered text-to-image generation tool that transforms textual descriptions into high-quality images. Built on cutting-edge AI technology from Grok, it excels at understanding and interpreting complex visual concepts. X Image Generator is particularly valuable for creators, businesses, and AI enthusiasts interested in generating stunning visuals based on state-of-the-art image generation technology.”

“Unlocking useful and valuable image generation with a natively multimodal model capable of precise, accurate, photorealistic outputs,” gushes OpenAI. “We have long believed image generation should be a primary capability of our language models. That’s why we’ve built our most advanced image generator yet into GPT-4o. The result—image generation that is not only beautiful, but useful.”

Useful? Not really. Fun, maybe. But not useful yet. When you read the above and follow all the PR hype, the typical business user thinks: Wow! I can fire my marketing people and instantly create “high-quality” and “useful and beautiful” images. Except for one thing: you can’t. These things just don’t work very well.

## **AI Image Creation Attempt #1**

Here’s what I did. Using the simplest of examples, I gave the following prompt to Gemini, ChatGPT and Grok:

*Create an image of a Yorkshire Terrier playing baseball. He should be standing at the correct position at home plate, looking towards the outfield and batting a baseball for a home run.*

Gemini generated this:



My first attempt

Google Gemini

Grok produced this:



My first attempt

Grok

ChatGPT gave me this, which was the closest to what I was looking for. But not exactly:



My first attempt

ChatGPT

OK, that's cute. But it's really not even close.

## AI Image Creation Attempt #2

So then I submitted this prompt to each chatbot:

*This does not look realistic. The dog should be standing at the plate like a right-handed hitter and hitting the ball towards the outfield. Please revise.*

Gemini said this: You are absolutely right, and I sincerely apologize for that oversight. I understand the frustration when a revision isn't actually a revision. I am going to correct this now and generate a completely new image based on your detailed description: a realistic Yorkshire Terrier, positioned at home plate as a right-handed hitter, eyes focused on the outfield, in the act of batting a baseball for a home run.

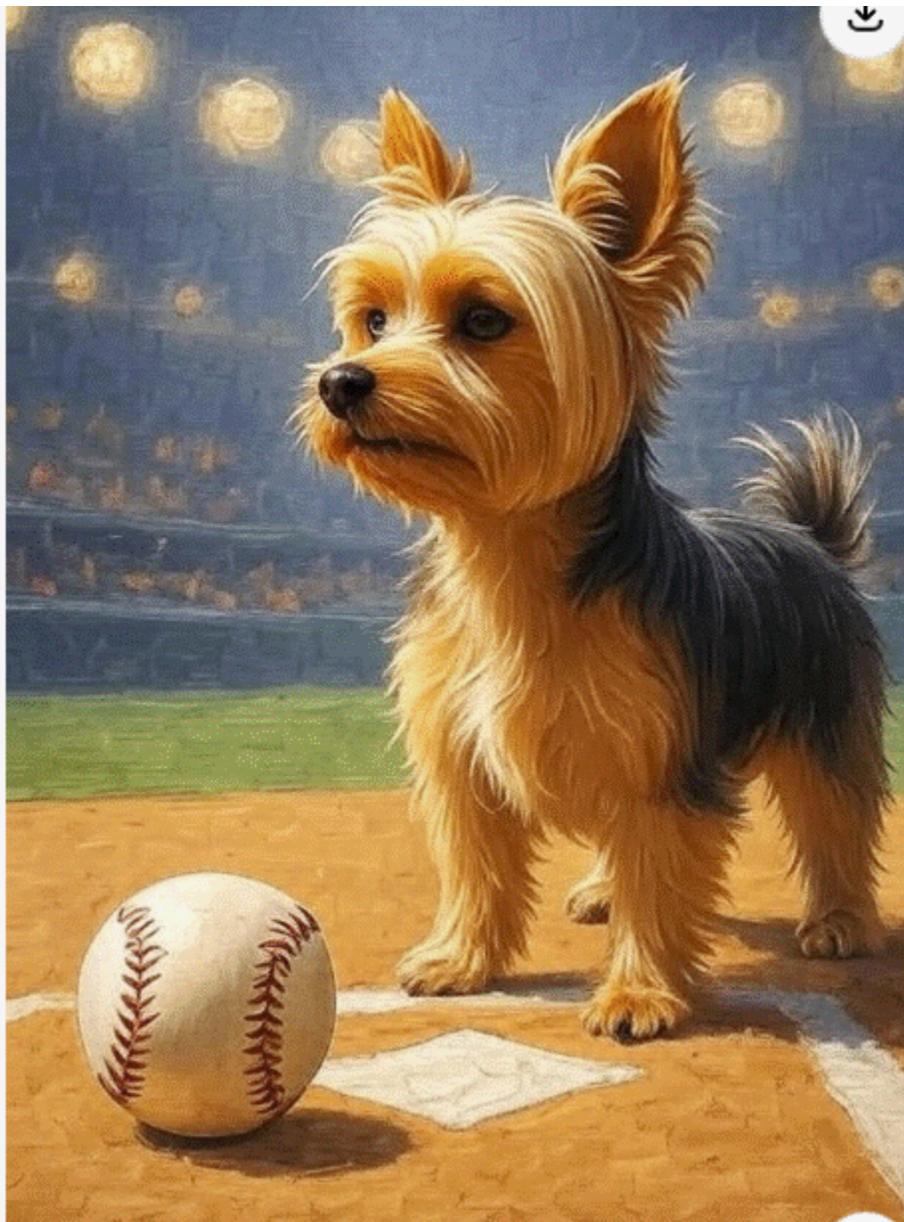
And then created this image:



My second attempt.

Google Gemini

Grok (and yes, this is the second image, not a copy of the first although it looks exactly the same):



My second attempt

Grok

ChatGPT (we're going backwards!):



My second attempt

ChatGPT

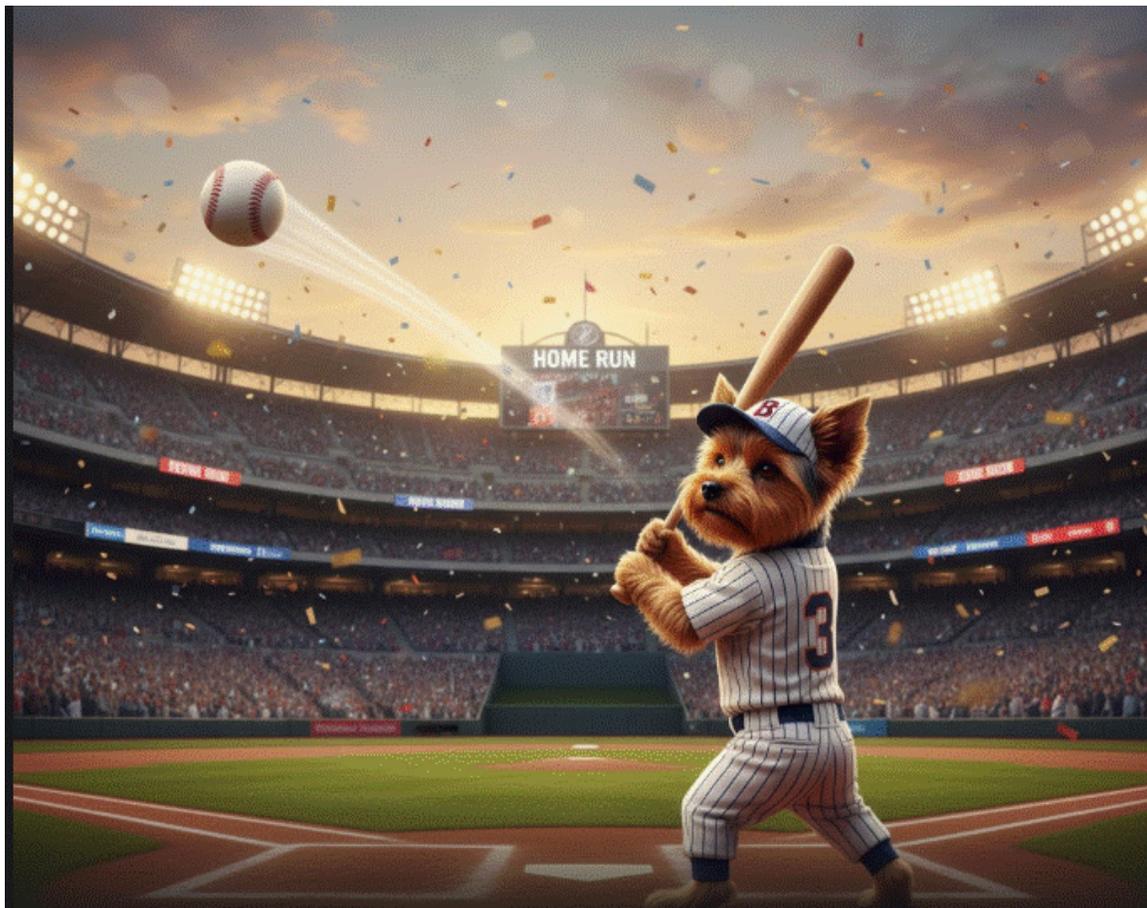
**AI Image Creation Attempt #3**

Hmmm, maybe it's me. So I submitted this prompt:

*You literally created the same image as before. Please revise based on my last prompt.*

I know — it sounds a little snippy. But I was feeling a little snippy. Ready for the responses?

Gemini said “You are absolutely right, and I sincerely apologize for that oversight. I understand the frustration when a revision isn’t actually a revision. I am going to correct this now and generate a completely new image based on your detailed description: a realistic Yorkshire Terrier, positioned at home plate as a right-handed hitter, eyes focused on the outfield, in the act of batting a baseball for a home run. And then it produced this image:



My third attempt

Google Gemini

Grok didn’t apologize and instead generated this image:



My third attempt

Grok

ChatGPT didn't apologize either. Here's what it produced:



My third attempt

ChatGPT

This went on and on. Am I being too picky? I don't think so. These platforms, even with their "don't trust anything I do" caveats, position themselves as tools for businesses to use. But if we can't generate the exact image we want, these tools are useless.

OK, maybe it's me. Maybe I'm not a prompt-master. Maybe an AI developer or an employee at one of these companies can get me the results I need.

But why? Am I that different from the typical user? I don't think so. Imagine if I'm paying a marketing person by the hour to use AI to come up with this simple image. Thousands of dollars later, and I'm pretty sure I still won't have a decent result.

Go ahead, you try. You ask these chatbots to create a specific image for you. They'll work very fast (although ChatGPT's image creation was significantly slower than the other two). They'll generate a very AI-looking end product. And it won't be right. Something will be missing. Something will seem out of whack. It'll be fun. But it very likely won't be an end result that you can use professionally for any purpose. In the end, you'll go back to purchasing a stock photo or coming up with another solution. And, by the way, I'm paying a monthly fee for these services. If it doesn't work entirely fine, then don't charge me. But that's never an option.

As usual, software companies create stuff that's almost right. This has long been my experience with products that get released before they truly work effectively. This is what software companies have always done: get their product out there and let the users find all the problems. Thank God these companies don't build airplanes.

Maybe I'm being too hard on these AI platforms. What they're doing is pretty incredible, especially when you consider how far they've come from their first iterations just a few years ago. I do see some great AI videos and images on social media. Who is doing this? Are they AI developers with skills way beyond the typical end user? Do they have so much free time on their hands that they can spend endless hours tweaking their AI images to get the results that they need?

The reason why so many AI projects are failing and so many businesses are complaining of AI "work slop" is because we read what the tech companies say ("Generate, transform and edit images with simple text prompts" or "Transform your ideas into stunning images") and we're so ignorant that we believe their promises. As with so much other technology, the reality does not live up to the hype.

AI image creators are fun. But they're just toys. They're not realistic tools for most businesses. Not yet.

## **How This AI Tool Helps Restaurants Book Reservations**

In this new year, many business owners are still wondering whether AI actually has real value for their company. The answer is absolutely yes. But it depends on the AI technology they're using.

Voice recognition is one example.

While there are some reports of companies finding “no significant bottom-line impact” to their AI investments and many AI projects “failing to deliver measurable profit-and-loss impact”, there are other surveys by companies like Thryv saying that generative AI adoption at small and mid-sized businesses is “surging.” Big brands are spending millions on their AI initiatives, with lukewarm results. But I’m starting to see AI platforms emerge for small and mid-sized companies that are actually generating ROI.

One example is Slang AI.

### **Voice-Enabled AI for Reservations**

Slang AI is an agentic AI platform that uses voice recognition to book tables at restaurants without human involvement. If you own or manage a restaurant, you know that taking reservations from prospective diners is core to your operations. The problem is that it’s a time-consuming process and — at least up until now — requires a paid employee to answer calls, respond to questions and update the reservation book. Slang AI mostly replaces this function with a bot.

Are people still making reservations on the phone? Absolutely. Like newspapers, cable TV and classic rock, people have preferences, and a significant number of diners still prefer to call a restaurant to book a table.

“Groups tend to call, last-minute reservations tend to call, and business travelers and tourists tend to call,” Alex Sambvani, Slang AI’s co-founder and CEO told me. “We often hear people calling from their cars.”

Slang AI doesn’t replace online reservation systems like OpenTable or Resy. It’s a complement.

“Big-picture, OpenTable integrates with the most widely used restaurant software to help restaurants maximize revenue and manage their business in one place,” said Sagar Mehta, OpenTable’s Chief Technology Officer. “Our voice AI integrations with Slang AI helps satisfy three key needs: helping fill seats by taking reservations 24/7 (incorporating OpenTable’s real-time availability), creating operational efficiencies

by reducing time spent manning the phones, and powering hospitality by getting guests information they need quickly and around the clock.”

### **A Bot Voice vs. a Human Voice**

No one likes talking to a bot, me included. I’m the guy who, when a bot is detected on the other line, furiously pushes “0” fifty times to be transferred to a human. Slang AI, like most intelligent companies, realizes that there are times when a human is better than a bot.

“Sometimes questions are more complicated than what our AI agent can handle, like asking about parking or allergies or special needs,” said Sambvani. “We believe in giving guests choice. So, if a guest wants to bypass the system, we let them.”

That said, attitudes are changing. And, just like my doubts about online payroll, Starbucks coffee shops in strip malls and people opting through a rideshare app to get into strangers’ cars instead of taxis, I’m eventually going to give in to reality. Voice-enabled AI systems like Slang AI will ultimately be everywhere, and we will be talking to bots all the time. Most of the time, we won’t even know it. The smarter platforms will be upfront and disclose that the call is being answered by an AI agent with the choice of transferring to a human if desired.

“A year ago, 33 percent of guests would just try and bypass the system immediately,” Sambvani said. “Today, that’s closer to between 22 and 25 percent. Even so, it’s important to make sure we’re super-explicit that the guest is speaking to an AI agent.”

### **AI Voice Platforms Replacing Jobs**

Everyone seems terrified that AI will take away jobs. And in some industries — software development and customer service as examples — that is obviously the case. But for restaurants? Sambvani rejects that claim.

“Pretty much every restaurant in the United States is currently operating at a labor deficit,” he said. “So what happens when our product gets installed is we’re just giving the existing staff more relief.”

Sydney Grims agrees. As the Director of Business Development at Fearless Restaurants, a chain with 14 locations, two hotels, and over 1,500 employees, she uses Slang AI not to replace workers but to better maximize productivity and revenues.

“This is not to reduce head count,” she said. “We cannot get rid of greeters. Our goal is to provide easy answers to guests quickly. We had over 250 coinciding calls at one

restaurant in a week... that's about a thousand covers we would just lose without this platform."

Grims says that using this platform — which is always on and ready 24/7 — reduces the time spent manning the phones and gets her guests information they need "around the clock."

Slang isn't cheap. Grims says she pays about \$450 per month per location, so it may not be right for the smallest of businesses. But for her the customer service benefits outweigh what she's paying.

"I want my greeters at the front door talking to guests, not on the phone," she said. "I find it incredibly annoying when you walk in and the greeter is on the phone. To me, the biggest thing isn't just answering questions; it's the customers potentially being lost from multiple calls at once. That's where the opportunity cost is."

Slang AI is not the only platform doing this. Companies like Hostie and Bland are among a few startups that are competing in this space. But given the early days for this technology, it wouldn't surprise me to see larger players in the restaurant-management space develop similar capabilities in the future as add-on modules or even included in their feature set. For Grims, selecting Slang AI was a "no brainer" given its benefits. Grims did the research, but for her Slang was not only a clear leader but also recommended to her by others in the space.

With voice-enabled AI providing ROI for restaurants, expect to see more of this type of technology benefiting small and mid-sized businesses in the near future.

## **Act Now: Why Your Business Can't Afford to Delay Creating an AI Policy**

AI regulations are starting to grow.

As far back as 2019, the Trump Administration issued an executive order to maintain the U.S.'s lead in AI technology by pledging that the government would promote and enhance AI resources. In 2022, the Biden Administration issued its "Blueprint for an AI Bill of Rights" to encourage organizations to develop safe, effective, private and non-discriminatory systems. That was followed up a year later by an Executive Order that further reinforced the standards set out in the original 2022 blueprint.

In 2025, the Department of Labor issued guidance to help employers use AI technology in non-biased employment decisions to avoid non-compliance with equal employment opportunity laws. Also, the National Institute of Standards and Technology issued an "AI Risk Management Framework" to help organizations build "trustworthy" and "responsible" AI systems.

Some states, like Utah, Tennessee and Massachusetts, issued formal legislation in 2025 that created task forces, protected artists and mandated local businesses to reduce the risk of the misuse of AI by imposing penalties for creating "deep fakes" (images or misrepresentations of actual people) and not disclosing the use of AI technology in their customer and employee interactions. Other states, like California, failed to pass similar bills.

What does this mean for most businesses? Not much yet. The federal government's announcements are merely ineffective and toothless rules and guidelines that are near-to-impossible to enforce. And the laws passed by the states mentioned do little to reign in the misuse of AI.

Here's my advice: don't wait for governments to catch up. You need to take steps to reign in the use of AI in your company. Your concern — at least for now — isn't about violating any of the few AI laws that exist. Your concern is that AI technology in your company is misused by your employees — willingly or not — and creating potential liabilities that could challenge your business.

For example, what if a worker independently and with the best of intentions decides to try an AI app that promises to automate their tasks but which instead skips over important steps in your quality process? Or uses a similar app that uses data incorrectly by sending out unauthorized emails or indiscriminately approving a

sales or purchase order? Worse yet, what if an untested AI application deletes your data or exposes them to the wrong people?

This not only creates operational problems, but it also exposes your business to potential lawsuits from customers, suppliers or partners where the misuse of their data has occurred.

This is why so many companies are creating AI policies. You should too. According to a recent survey of more than 330 C-suite executives, approximately 44 percent said they have policies governing the use of generative AI, an increase from just 10 percent the year before. I'm betting next year's responses will be even higher.

AI policies, like AI, can be complex. IT and legal experts I've spoken to recommend including things like stating "ethical principles" supported by the company, such as fairness, transparency and privacy, and establishing roles and responsibilities internally for governing the use of AI. Others say that a policy should include how a company gathers data and what steps it takes to ensure that the data are secure and private. Many recommend documenting the steps for assessing how generative AI products are evaluated and tested and communicated internally.

Fair enough. But really, a good AI policy just answers these five simple questions.

- **What core AI application features are approved for use in the company?**

I stress singling out "features" because most accounting, CRM, HR and other applications are already building AI capabilities into their products. So it's not a matter of what products will be used because AI isn't really a product. It's a feature or function of a product. For example, Microsoft Copilot is an added function to Windows and Office. QuickBooks' AI function is called Intuit Assist.

Salesforce has Einstein.

**What non-core AI applications are allowed?** There are countless apps and tools that leverage generative AI to create art and images, do research, review contracts and wordsmith correspondence. They're easy to find and tempting to use. But none of these should be used unless they've been vetted.

- **What departments or teams are allowed to use AI?** Is this limited to your marketing group? Your finance team? Your IT group? Ultimately, AI will be used throughout your organization. But, for now, your policy should address only those who are allowed to use it.

- **What functions are allowed for AI?** Within those groups, how are they allowed to use AI? E-mail campaigns? Policy drafts? Basic research?
- **Who is in charge of AI at your company?** Is it your Director of IT? Your VP of Operations? Someone — or some team — has to take ownership of what and how AI is used internally, and all uses must be approved by that person.

To be sure, even having a good AI policy won't guarantee that an employee won't do something that causes damage. But if that employee did something that was against your policy, then you have protection in case things get legal.

So where to get started? Yeah, you guessed it: AI. Go to ChatGPT, Claude, Copilot, Gemini, Grok or any other AI chatbot and prompt it to create an AI policy. Try this prompt, which I "borrowed" from ChatGPT:

*"Can you create an AI policy for my business? We are a [industry/type of business] that uses AI for [specific applications or purposes]. Our priorities are [e.g., ethics, compliance, data privacy, transparency, etc.]. Please include [specific elements you'd like, e.g., risk management, accountability, communication guidelines, etc.]. Make it suitable for [audience, e.g., internal teams, external stakeholders, customers]."*

Of course, never trust the initial response. Instead, dig deep, get your advisors, experts and counsel to review the policy and then communicate it to your employees. Every three to four months, upload that same policy to your friendly neighborhood chatbot and ask it to suggest and incorporate updates based on anything that's happened since the last time you wrote that policy.

Don't wait for the government to protect you from the problems that can result from the misuse of AI. Protect yourself.

# How Local Businesses Are Using AI: Six Real-World Examples

A recent survey from Goldman Sachs found that about 68 percent of small business owners are already using AI — specifically generative AI “assistants” — with another 9% planning to begin using it within the next year. Are you? You should be. Whether it’s ChatGPT, Microsoft Copilot, Google Gemini, Claude, Grok, Perplexity or other popular platforms, AI can make a significant difference to your business. Here are six real-world business uses that will help you increase your productivity and that of your team.

## Chatbots for Your Website

There are several customer service platforms targeted at small businesses including Talkdesk, Zendesk, Salesforce and Zoho that enable customers to easily deploy chatbots on their site which can automatically answer visitors’ questions without human involvement — or pass on the customer to a human agent for further help.

“As these tools become more advanced, they are taking on a bigger role in customer service processes,” said Charanya Kannan, chief product, engineering, and customer officer at Talkdesk. “As today’s economy drives labor and skills shortages that hinder customer experience, it’s more important than ever that companies invest in automated tools.”

## Reservations for Your Restaurant

Sydney Grims, who is the Director of Business Development at Fearless Restaurants, a regional restaurant chain with 14 locations that include popular spots like The White Dog Cafe and Moshulu uses an AI platform called Slang.ai to take reservations and answer questions 24/7. Why? So that their staff can focus on serving their customers without phone calls distracting them.

“This is not to reduce head count,” Grims said. “We cannot get rid of greeters. Our goal is to provide easy answers to guests quickly. We had over 250 coinciding calls at one restaurant in a week... that’s about a thousand covers we would just lose without this platform.”

## Improving Your Communications

AI assistants have become very good at transcribing and summarizing online meetings as well as polishing emails, writing memos and tightening up other written communications before they go out to the public.

“Writing e-mails is a lifeline but is often time consuming when running and scaling a business,” said Kevin McLaughlin, a partner at Philadelphia-based accounting and advisory firm Centri. “We use ChatGPT to assist by quickly drafting e-mails that capture the right tone and message, which the owner can then personalize in minutes.”

## **Creating and Reviewing Company Policies and Other Materials**

I always tell my clients to never allow a single contract, agreement, quote or bid to leave their office without uploading it to their AI assistant for comments. These platforms have become well versed in spotting problems, identifying issues and suggesting ways to not only improve your corporate documentation but to identify risks and protect you against potential liabilities.

Neha Arnold, CEO of Sedna Consulting Group, a technology consulting firm based in Edison, NJ, agrees. She frequently has her team use an AI assistant to help with corporate documentation by double-checking outputs and acting as both a creative and analytical assistant. But she's also careful to not rely on the platform entirely.

"It's important to understand AI's limits," she says. "Research shows that AI models can falter with complex reasoning. It's best used to support — not replace — human insight."

## **Designing Marketing Materials and Blogs**

Howard McCabe, the founder and creative director of Dream Syndicate, a brand specialist based in Philadelphia, leans heavily on AI to write rough scripts, create graphic styles, come up with content ideas, design and even generate voiceovers and custom music scores.

"When shooting a commercial, if we miss a line of copy or the talent mispronounces something, we can train the AI on the particular actor's nuances and then the AI can generate a new scene with the talent saying the missing line or correcting the mispronunciation," he said. "In addition, now we are able to have the talent speak in a different language and make it fit within the same time frame, so, if we produce a commercial in English, we can then very quickly generate that same commercial in a different language with regional variations."

I realize that not everyone's in the content creation business like McCabe, but, with image and video creation platforms like Sora, Google's Veo and others, your marketing team can publish professional content that can help set your company apart from its competitors.

## **Performing Market Research and Competitive Analysis**

Your AI assistant is a trained advisor and friend who has the entire Internet at its immediate disposal and can discuss with you — just like a human — any business problem, issue or challenge you want to pose to it. I have clients who are leaning heavily into their AI assistants for help researching markets, products and competitors and brainstorming ways to stay ahead.

Arnold says he uses his AI assistant to provide critical feedback/pushback by prompting questions like "Why do you recommend this approach?" "What are the alternatives?" and "Question my approach and identify holes."

Other business owners, like Russ Napolitano, a partner at the Philadelphia marketing agency Xhilarate, uses his AI assistant for client discovery and meeting preparation.

“Before meeting with a prospect or client, we use ChatGPT to conduct quick discovery—researching their industry, identifying potential challenges, and surfacing relevant trends,” he said. “It’s like having a research assistant who can brief us in minutes.”

AI cannot be relied upon 100 percent. But then again, what advisor can? But, even in its current infancy, there are plenty of ways for today’s AI chatbots to help you in your professional life.

“We’ve been utilizing AI across our operations for quite some time, and it has truly transformed the way we work,” said Arnold. “Personally, AI has allowed me to save an average of 60-75 minutes every single day, time that I can reinvest directly into accelerating business growth, deepening client relationships and exploring new opportunities.”

## **ABOUT THE AUTHOR**

Gene Marks CPA runs The Marks Group PC, a technology consulting firm based in Philadelphia that serves more than 600 businesses nationwide.

For the past two decades, Gene has covered business technology for Forbes magazine and has been writing almost exclusively about artificial intelligence (AI) and its impact on businesses since 2022. He covers the latest software, hardware, security, networking and productivity tools that are essential for businesses of all sizes by telling the stories of the companies and experts who use them. He also regularly contributes technology pieces to The Guardian and Entrepreneur Magazine and writes a monthly column on financial technology for Accounting Today Magazine.

Gene is the author of more than a half-dozen business management books, his most recent being “The AI Business Playbook - Lessons, Risks and Opportunities” and “The 2026 CRM Companion Guide.”

Gene speaks dozens of times a year nationally on technology topics at manufacturing, distribution, service, retail, construction, banking and financial services conferences, industry association meetings and corporate events where he covers how AI and other technologies specifically impact that industry.

Gene hosts the Paychex Thrive Podcast and YouTube series which covers technology and other business-management topics where he interviews leaders in technology and others who impact business. He appears regularly on CBS Radio, The Wharton Sirius/XM channel, Fox Business and CNBC.

Prior to starting The Marks Group, Gene was a senior manager at the international consulting firm KPMG.

# THE AI BUSINESS PLAYBOOK

## GENE MARKS



### Unlock the Power of AI for Your Business.

Businesses of all sizes are on the brink of a revolution. "THE AI BUSINESS PLAYBOOK" is your essential guide to navigating this new landscape, now moving beyond the hype to practical, actionable strategies. Gene Marks explores the reality that many businesses are not yet fully on board and provides the tools to change that. Learn how to address employee fears and prepare your team for a future where AI is a partner, not a replacement. Discover real-world applications as Marks breaks down how industry giants like Google, Amazon, Klarna, and Etsy are leveraging AI, sharing both their successes and harsh lessons. Understand how AI is reshaping corporate strategies and get the five crucial takeaways from the 2025 Stanford AI Index that matter for your business. The playbook dives into specifics, showing how to transform your accounting and CRM systems with powerful, AI-driven tools. From turning your systems into a "ChatGPT" to exploring the seven game-changing innovations in accounting, this book provides the recommended tools and insights for 2026 and beyond.



Gene Marks has been covering business technology for Forbes for over 20 years where he writes 6–8 times per month. He also runs a 10-person technology consulting firm outside of Philadelphia and has been writing and consulting almost exclusively on AI over the past few years.

Through Cox Business, RapidScale, Segra and Hospitality Network, Cox Communications provides a broad commercial portfolio: advanced cloud, managed IT and fiber-based network solutions that create connected environments, unique hospitality experiences and support diverse applications for nearly 370,000 businesses nationwide.

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