EXCLUSIVE Q&A

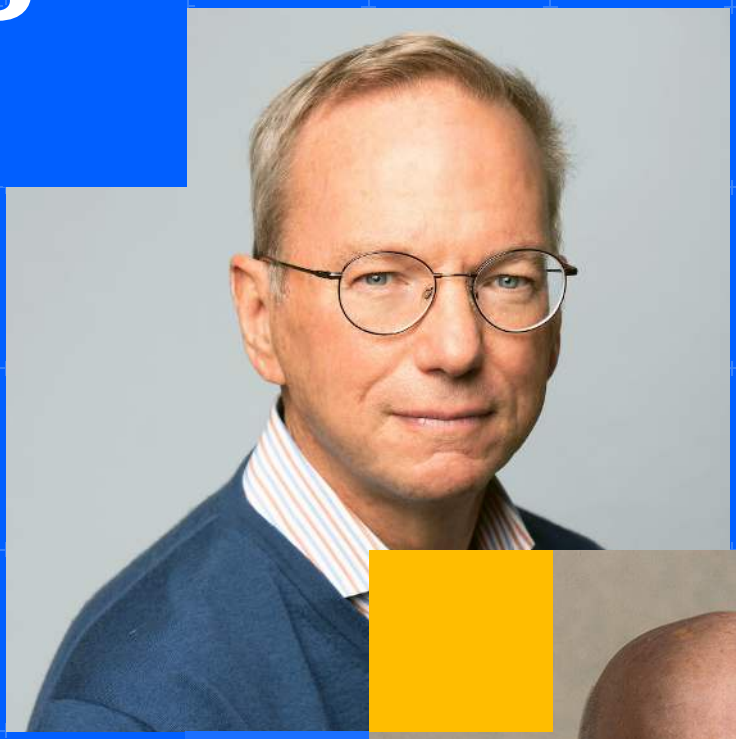
The Future of Generative AI in Business

Eric Schmidt
Co-Founder
SCHMIDT **FUTURES**

Former Chairman & CEO
Google

and

David Solomon
Chairman & CEO
Goldman Sachs



STREAM
by AlphaSense

Introduction

AlphaSense has remained steadfast in its mission to radically improve how professionals make business decisions through the power of AI. As we look towards the future of an AI-enabled world, we spoke with two titans of the tech and financial worlds, Eric Schmidt, Co-Founder of Schmidt Futures and Former CEO & Chairman of Google and David Solomon, Chairman and CEO of Goldman Sachs, on what we can expect to see unfold with the rapid growth and business implications of generative AI (genAI).

In the below interview, Solomon and Schmidt discuss the wider world of generative AI and the impact on our business and society as a whole. They answer some of the most pressing questions in the genAI space like, which industries are ripe for disruption? What are the risks and unknowns with leaning on genAI for information? What societal behavior changes does he foresee?

The below Q&A is lightly edited for clarity, however, you can watch the video of the entire conversation at alpha-sense.com/genai.

David Solomon

Many AI experts believe building bigger large language models (LLMs) won't improve performance gains that significantly. Do you agree?

Eric Schmidt

Well, the [broader AI] industry doesn't. What the industry's doing today is spending about $100 million on training frontier models, of which there are currently four: OpenAI, Google, Anthropic, and Inflection. And there are more coming.

The leaders of those initiatives have told me their next scale goal is $1 billion in training runs, most of which goes to electricity. This has never happened in my experience and has never happened in my industry. The scale of money, capital, and hardware—something that you understand extremely well—is new to us.

DS

Does it scale linearly? If you invested $10 billion more into GPT4, for example, would you guess it gets 10% better or 100 times better? How does it scale on a linear basis with capital dollars spent?

ES

People believe that we'll go from 100 million to a billion to 10 billion. Much more subtlety, better reasoning, and better intelligence. So if you believe there's a return for a difference in intelligence, insights, and so forth, you can see it.

You can see it in the difference between ChatGPT, which is essentially GPT3.5, and GPT4. Ask it a question, and look at the different answers. You can see the progression. OpenAI has said that GPT5 and GPT6 will be on the order of 18 months, two years between each other. That's the nature of the cost of the training.

DS

If you looked out five years from now, what sort of LLMs do you think most businesses will be using?

ES

Let's distinguish between humanity and businesses. Some AI companies are valued at many, many billions of dollars with no revenue plan whatsoever.

With respect to these frontier models, they're so interesting because it's a new form of intelligence and we don't know how they'll be used. Will they be used by consumers or governments and businesses?

I recently published an article that said the majority of the business uses will not be in these LLMs for a reason. The uses may not be obvious. In your business here in the bank, do you really want your system learning something every day? Can you imagine the regulators calling up and saying, "Oh, it learned something! Oh, my god! It just learned a new negative interest rate and that's not legal."

> "Ultimately, businesses are not going to be tolerant of emergent knowledge and unpredictability."
>
> **Eric Schmidt, Former Chairman & CEO of Google**

Ultimately, businesses are not going to be tolerant of emergent knowledge and unpredictability. You're going to want open-source models. The most well-known one right now is called Llama. There is Bloom from a group called Hugging Face. And there are a number of others coming.

You'll tailor AI use cases to your business problem. Let's think about a bank. How many different uses do you have for AI? Customer service, writing letters back and forth to regulators, marketing, and writing press releases. All those make sense for generative AI, but you don't want it randomly inventing new languages and new math in the middle of your business operations.

You'll use them, but you'll probably use smaller, free ones.

DS **How do you think about the economic flow to all these different scenarios?**

ES How do you think about the breadth of business applications and how do you prioritize?

Well, you're a CEO, so what do you care about? Revenue over expenses. Most people, when they look at these tactically, say, "Let's improve our customer service. That's great. Let's lower our operating cost and our inefficiency. Let's get our G&A smaller." All of those are true. Those are normal automation.

You want more revenue. Doesn't everyone? Everyone listening to this wants more revenue. How do you do it?

DS **More productivity.**

ES More productivity, but fundamentally revenue. So how do we get more revenue? We have more products. We have more customers. We have more messaging. We have more demand. We create that. My favorite example is at Google. I helped build an industry where everyone has to generate their own ads. Why in the world do I have to generate the ad? Why can't I have the computer generate an ad, and the computer knows how to score my ad?

It currently says this idea from Eric sucks and this idea is brilliant. Instead, I want it to build a great ad.

I'll give you another example. I want to create a viral tweet. However, I don't really know how to do that, so I write my tweet in my own language and it's a dud. Why can't I tell the system, "This is what I want to express," and have it design the most viral tweet to get my point across? You get the idea. So the ability for the computer and a human to work together to have an impact and spread that impact drives revenue. That's the best way to think about generative AI.

DS

AI's been around for a long time but can you discuss the trajectory and evolution of AI compared to other software platforms?

ES

We've never seen anything this fast. Let's look historically at milestones. In 2011, an AI group at Google figured it out. The program was watching YouTube and discovered the concept of a cat. It didn't know it was looking for a cat. It discovered it. The first discovery of a concept by computers.

In 2015, we won the Go Game, which was thought to be unwinnable by computers. In 2017, a different group at Google built a thing called transformers, which is the T in GTP. Then a completely different company, OpenAI, figured out a way to build GPT1, 2, and 3.

They weren't trying to do what they did. They were actually trying to solve problems in science, but they had all of this language. They turned it on language, and all of a sudden it did this incredible job at writing even if it was wrong. It was a brilliant writer with wrong facts.

It was through using a technique called RLHF where they ultimately built the thing called ChatGPT in November of last year. Remember, this is all less than a year old, and, boom.

When OpenAI released ChatGPT, they didn't think anyone would notice because they were working on a much more powerful model, GPT4. They had forgotten that everyone could be surprised.

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DS

With the rise of AI, do you think that the balance of power among these large tech companies is shifting?

ES

There's a limit to how quickly folks can change. At one point last year, 25% of the market value of the S&P was from six tech companies.

In the case of Apple, they have yet to exploit the power of generative AI. The obvious case is to replace Siri with something much more capable.

We don't know how they're going to do it yet. Remember, they're not trying to solve the general intelligence problem, they're trying to solve the problem of getting you to love their products more, which means they're going to have different solutions in different parts of their businesses.

In Microsoft's case, they've made a huge investment in OpenAI. They started by saying, "Let's make programmers more productive." There's evidence, if you use Microsoft tools, the computer writes roughly half the code.

If you think of it as me plus the computer is equal to two me's that's a big deal. Doubling the productivity of programmers, which I think is the first thing that Microsoft has done, is a real win.

I'll give you a simple recent example. I had to write a memo about AI to the President. I don't write very well, so I wrote the memo with lots of details and sent it to GPT4, and I said, "Rewrite this. Don't change the math."

GPT4 wrote it, much better than I could, and I sent it to the President. What's the value of that to me? A lot. To you, to any of us.

DS

Absolutely.

ES

These are, and will be, embedded in our workflows. They'll be in Word and Excel. They'll be in Gmail. They're already in GDrive and so forth. The next step is where they go from simply helping me with a task to generating what I should be doing.

For you as CEO, you have these incredibly highly paid, highly talented, highly educated people. You want to increase their productivity. You don't want them typing, you want them thinking. The ideal scenario is the computer is working with them, understands them well, and is highly targeted to what they do. It says, "Consider this."

Imagine a situation where, when you're doing search or doing research, not only does it suggest what you asked but it asks the question—offers the questions you should have asked and the answer.

What I want is to say to the computer, "Here's my idea," and the computer says, "Here are the facts that support your position, Here are some alternative theses that you should consider, and here's why they might be relevant." That would make me so much smarter.

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>
> **Eric Schmidt, Former Chairman & CEO of Google**

DS

So you're talking about this being completely integrated into everybody's operating systems.

ES

Exactly.

DS

Let's step away from businesses right now and talk about everyday people and the way they live their lives. Does AI become an everyday part of how we operate on platforms as individuals?

ES

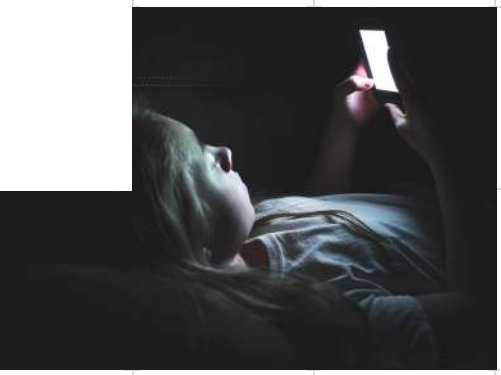
I think it depends on who you are. For kids, it's both incredibly important and incredibly frightening because kids are learning how to form relationships. Imagine if your best friend as a kid is non-human.

There's a lot we just don't know. We don't know what that does to them cognitively. We ended up running this massive experiment over 20 years—without any testing or restraints—using social media to see what happened, and it wasn't such a good outcome. We want to avoid having a negative impact on young people.

We don't know if people will get attached. We don't know if people anthropomorphize these sorts of things. The problem you stated in business is much easier—I just want to generate more revenue. But the impact on society, where the definition of who we are as humans is changing, is a very big deal.

The industry believes, in five years or so, you'll have solved all of these problems of recency bias, hallucinations, and so forth, and it'll also be able to do step-wise planning. At some point, these systems will have some kind of agency on their own. They'll be able to initiate things. Today, they can't.

When they can initiate things and it's doing its thing and you're doing your thing, how do you trust it? How do you constrain it? How do you know what it's doing? You say, "What are you working on?" and it says, "I'm working on physics." But in fact, it's working on biology because it's learned how to lie. We don't even have a language to discuss these things.



DS

What can we learn from our 20-year experiment in social media? What should we be doing with social media that can help us as we go prepare for what is an exponential change in the way these things affect society?

ES

A critical view of social media, which is easy, is the incentives are not in alignment with humanity. Social media is organized around revenue. The way you get more revenue is you get more usage. The way you get more usage is more outrage. That rule, I suspect, applies to LLMs and AI in general.

We have to address the question of whether the goal of these companies is to maximize revenue or to maximize communications. They appear to be maximizing conflict. I have every reason to believe the union of large language models and social media makes them much, much worse because they can do more targeted misinformation. Also, you have the ability to generate fake images and drive people crazy.

It makes perfect sense that, if you're an evil social media CEO, you want to produce misinformation that will cause people to start rioting because you make more revenue out of it. I'm not suggesting people are doing it, but it's the alignment problem with their interests.

We have to acknowledge that we as human beings collectively have these defects. The answer among the allegedly smart people is we'll just better educate people. We know that doesn't work. We know about recency bias. We know about first principles. We know that if falsehoods are repeated over and over again, they become true.

Collectively, we need a better discussion about this. In the American political system—not to be a downer here—I think 2024 is likely to be a complete disaster because of misinformation. Both parties are aware of it, but neither party is willing to take the steps to regulate it because they're afraid of being disadvantaged against the other side.

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We have to get to a point where leadership in our country fundamentally believes we're better off regulating the worst aspects of these things, and we're not there yet.

DS

When you think about the impact on society and business broadly, are there industries that won't be disrupted by this?

ES

In general, the disruption occurs first in the industries that have the most amount of money and the least amount of regulation. So the tech industry and programmers is an obvious one. Places like Hollywood are another example. They move quickly. They have a lot of money. Things change quickly.

Here at Goldman Sachs, and your peer competitors, you move quickly even though you have regulators. The industries that are both heavily regulated and slow-moving include education, healthcare, national security, and the military. Somebody has to fix that.

In the military, many of our valued enlisted people are sitting, watching all day. That makes no sense. Have the computer do the watching. They can be sitting in the breakroom and the computer says, "Oh, something bad happened." It makes no sense to have humans watching something and getting bored.

The principle you're going to see, which has always been true of automation, is that the most dangerous and most boring jobs will get replaced first. And then eventually, we move up the ladder.

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Eric Schmidt, Former Chairman & CEO of Google

DS **You know, there are a lot of problems in the world today that seem unsolvable. Are there some really, really big problems you think AI can accelerate our curve to solve?**

ES Climate change.

If you assume nuclear and climate are the two existential threats to the world, the nuclear problem is not solvable by AI but the climate one is. There are so many people working on scientific solutions, new materials, new energy sources, new energy distributions, new energy algorithms, that AI will be central to solving climate change. Without AI, we won't get there. With AI, we have a chance.

DS **Advances in technology that are even hard to imagine now have to be the solution to that problem.**

ES If I told you we shouldn't invent the telephone because the telephone will be used by criminals, you'd say, "What an idiot." And yet let's say the telephone was just about to be invented and you said, "This is brilliant," and I said, "Well, it's going to get misused. Stop."

We have a long history of the development of dual-use technologies. Nuclear being a very dangerous example, which ultimately was beneficial and harmful at the same time. The truth is that AI will be enormously beneficial. Healthcare, education, the discovery of drugs to solve problems that have bedeviled humans for thousands of years, eliminating diseases, inequality, all of these things are possible.

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It's also possible it will give asymmetric power to evil people. If you think about the Japanese assault with sarin 20 years ago on the subway, how much knowledge do you actually have to have to recreate that? And how much of that knowledge is now available?

When I was in college a long time ago, an undergraduate managed to design a plutonium bomb from open-source material. This was before the internet.

DS

Wow.

ES

He submitted his thesis and they said, "We have to classify it." Then they had this basic problem of nobody being able to read it because it was classified. They ultimately decided that, if you have a classified undergraduate thesis, we'll just give you your degree.

So the fact that open-source information can be combined by clever people is not a new fact. This was 50 years ago, however, what is new now is the ease of which the access can be presented right in front of you.

DS

You touched a little bit on regulation. Do you have some ideas as to what that regulatory construct should look like? Or how that regulatory construct should evolve?

ES

I do. So the first thing I'd like to say is everyone has a complaint about the internet. I have mine. You have yours. Everyone has them.

There are many people who proposed a division of internet regulation. I cannot imagine how you'd build it, fund it, write

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> **Eric Schmidt, Former Chairman & CEO of Google**

it, tell it what to do, tell it what its powers are. I think it's highly unlikely that there'll be an internet regulatory body in any country that's a democracy because democracies are just too complicated, which is the core of democracy.

We should focus on extreme and existential risks. The new problem is that frontier and that the open-source models can be misused at scale. The frontier models, the big ones, they're all going to get regulated. They're highly visible and they're accountable. The government is going to pay attention. The people who are running them essentially are asking for regulation because of the potential downside dangers.

The hardest problem is how do you regulate open source? Open source here means you release the code and all the numbers. These are the numbers that cost $100 million to calculate.

So if you were to just release those numbers, then an evil person/company/country could easily replicate all of that information and misuse it in a really bad way.

DS

I want to shift gears, and I want to talk about AI and geopolitics. The US government is obviously changing the landscape around semiconductors and semiconductor exports around the world. How is that going to reshape global competition around these technologies?

ES

If you do a world survey, Europe is now in the process of writing regulations that will make it almost impossible to do the things that I'm talking about. This is a mistake.

Britain has an Online Safety Bill, which is not as bad but is also highly regulatory. That may or may not hurt them. China has AI ethics and AI rules, which effectively make it impossible to use LLMs without a lot of censorship. You can't answer a question about Tiananmen Square.

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America, for all of our faults, looks like we have a chance to move quickest. My scoring is that the US and the UK are basically ahead. Europe is going to be behind and will remain behind unless something changes. China is at least three years behind, partly because they didn't get into the space due to fear of regulation and another because of the lack of Chinese language information.

Finally, the impact of these chip curves. On October 7th of last year, the Biden administration announced restrictions on exports of high-speed chips. There's a lot of evidence that those have hurt China, at least for a while. China is working hard to catch up. They're trying to do their training outside the country. They're trying to evade the rules in ways that all make perfect sense, but it's going to be very hard for them to catch up.

DS

How about some of the geopolitical swing states? I mean, Abu Dhabi has released a 40 billion parameter Falcon model. What kind of a role does that part of the world play in all this?

ES

I recently spent some time talking with the people who did this, and they said, "We want to be an open-source player. We want to solve a lot of the Arab, Arabic content issues." Makes perfect sense. "And we want to use this to build businesses in our country and neighboring countries that make sense." Very reasonable.

The product is called Falcon. It's a good example of this technology not being unique to the US. The obvious question is: How did they do such a good job? And the answer is that they had plenty of money, they had plenty of good hardware, and they must have brought in some talent from outside their country.

DS

Super interesting. This has been a boon for manipulated media with deep fakes. How are we going to deal with this? How is society going to adapt to this?

ES

I proposed that laws be changed to require social media companies to know where the content came from by watermarking who submitted it or recording them using digital technology, publishing their rules, and holding them to their rules.

In other words, if a company says, "We allow anything," then that's okay. If we don't allow X, then they have to actually implement, "Don't allow X." All very sensible, in my view. I am pretty skeptical that anything will change in the next few years until there's a terrible crisis because there are too many power centers to make it happen.

I hope that the well-run companies will be under enormous pressure to not have bad speech or misinformation, and they actually police that. The trends are against my point of view. If you look at Twitter, the Trust and Safety Group has been eliminated on Twitter.

At Meta, they cut their Trust and Safety Group down by a factor of two for reasons I don't fully understand. The Google people I've talked with have a pretty significant AI Trust and Safety Program, which I reviewed.

Hopefully, a few of the good companies—I assume Microsoft is doing the same thing—will then put at least reputational pressure on the others to catch up.

There are plenty of people who either hate elites, hate the government, hate democracy, or are funded by the Russians. There are plenty of people who have nothing to do but spread misinformation.

They wake up in the morning. They write computer code, and they say, "Out you go. Out you go. Out you go." And they manipulate it. So it is a contest between the people who want to manipulate an outcome and the proper host. And remember, it's not just evil national security people.

There are also businesses that will fund counterintelligence campaigns. There's evidence on both sides in America that politicians are going to start using these things in various forms of misinformation.

DS

Let's look on the glass-half-full side. What's one thing you're excited about that you want to leave us with?

ES

Let's talk about AlphaSense. What AlphaSense did is take very special data out of Goldman and made it available to all of their customers in a very powerful way. It made them smarter. It's also something that Google couldn't have done because the information wasn't generally available. I like these systems where the computer is working with the person to make them smarter.

I defy you to argue against making all the humans in the world smarter. We're just going to be better with a more liberal and tolerant society where people have ideas and people can frame things.

These tools in aggregate, accelerate the rise of prosperity, not just in America, but worldwide.

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>
> **Eric Schmidt, Former Chairman & CEO of Google**

DS

That's been the story of technology.

ES

The quicker we can get everybody up to our level of sophistication and approach, the safer the world will be.

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About AlphaSense

AlphaSense is a market intelligence and search platform used by the world's leading companies and financial institutions. Since 2011, our AI-based technology has helped professionals make smarter business decisions by delivering insights from an extensive universe of public and private content—including company filings, event transcripts, expert calls, news, trade journals, and equity research. Our platform is trusted by over 3,500 enterprise customers, including a majority of the S&P 500.

Headquartered in New York City, AlphaSense employs over 1,000 people across offices in the U.S., U.K., Germany, Finland, and India.

About Stream

Stream is AlphaSense's searchable database of investor-led expert interviews based on one-on-one calls with former executives, customers, competitors, and channel participants across a breadth of industries.

Learn more at Alpha-Sense.com