The So What from BCG

What We Do and Don’t Know about Generative AI

Sylvain Duranton

Georgie Frost: Machines have never been able to exhibit behavior indistinguishable from humans, until now. New generative AI models such as ChatGPT are changing that. The systems have the potential to transform entire industries beyond recognition. It carries great risk, but can also create competitive advantage for companies, as long as you have the right strategy. So where do you begin?

I’m Georgie Frost and this is The So What from BCG.

Sylvain Duranton: Very often we see a bit of a trap because companies basically, you ask them, "What’s your AI strategy?" And they will say, "Oh, we want to become a data centric company. We want to become a bit like the iconic digital company. We want to be the Facebook or the Uber or the Amazon or the Alibaba of our sectors." In the end, they’re all sort of saying the same thing, which is a super far fetched vision in ten years when everything has changed.

Sylvain Duranton: So ChatGP 3 is now already a bit old because ChatGPT 4 is now ready. All those models are getting more and more trained and more and more accurate. Still, the technology is not perfect, as you say. You can say certain answers and you can trick those models. Models will be tricked at some point, even the most advanced one. I think today what the technology needs to be deployed is not so much better models, models are pretty powerful, but probably more understanding in companies of what you can do with them, how you can deploy them, and all the infrastructure questions—which are also related to data piracy, GDPR data leakage, and all these things.

There the company, depending on which infrastructure you run with, you might be running with AWS, you might be running with Microsoft, you might be running with GCP. All providers cannot cope with all technologies. If you want to have your model running on a private cloud, all the providers don’t provide private cloud options. Some do, fortunately. So in terms of tech deployment, we lack maturity and I guess this will be solved in the coming months, but the gap is not so much the models themselves, but more how to deploy them concretely in the tech infrastructure of large corporations.

Georgie: We’ll get into that in more detail, but I mean, you said that the technology can be tricked. How is it that we can make sure that we keep it safe and we limit the risks, the clear risks that could come of this, you say being tricked, bias, fraud, all sorts of things from generative AI?

Sylvain: There are many risks, as you said, Georgie, and different mitigation for the different types of risk. There will be hallucinations, some sort of weird answers at some point which will be coming and that’s OK. And that’s by design. And here the mitigation is putting some safeguard guard rails to test the answers to keep humans in the loop with different flavors on how critical what you’re doing is.

If you are sending promotion offers to many consumers for large retailers, if you get it to be wrong once in a while, and this is not the best offer that you’re sending to someone, it’s not a big deal. On other topics, you have much higher stakes. And here you need absolute perfection. So you need to build guard rails to make sure that in case of hallucination from the model and there will be hallucinations, you are protected against that.
And that’s where keeping humans in the loop is super important.

You have other risks. For instance, could some malevolent teams or people use those technologies to do harm? For instance, I could ask ChatGPT, "OK, can you help me and tell me the trick to build a dirty bomb or to attack this or that institution?" Here there are two things which are very important. First, the tech owners themselves, they anticipate those questions and they prevent the model from answering this type of question and they have teams of people making sure that this does not happen and there’s always some risk, but that risk is managed.

The other risk is about who owns those technologies, in which hands do they fall, and do they fall in trusted hands or do they fall in untrusted hands? And on this one it’s obviously much more difficult to control because there is a risk that this falls in some bad hands. And one example is everything related to deep fake videos, for instance, which can be used to harm some public figures or to manipulate public opinions.

**Georgie:** We are a society that’s built on trust.

**Sylvain:** Yes. But you know...

**Georgie:** Does this not go to the core of that?

**Sylvain:** Yeah. And you know had this half joke, half serious deep fake on the Pope wearing a very expensive fashionable white coat on top of his regular outfit. And that’s typically a thing that might happen. And here it’s back, I think, to regulation, to prevention. And in the same way you cannot lie to the general public and there are things you can’t say or can’t do. This needs to be done also for these type of technologies, and legislatures needs to follow technology and that’s hard.

But also the means to intervene and to detect or needs to be muscled up. So all state agencies, they have to master those technologies and in the same way that internet can do very bad things and we know stuff about child pornography or other things on the internet and you have teams who are chasing that in the government agencies. Government agencies need to do the same for gen AI type of content, I think. So that’s another part.

And then you have that risk of data leakage, loss of IP, loss of intellectual property on creation, which is big. And we see some legal actions which are taking place already right now against different of those large models. And here I think it’s partly regulation, partly finding the right business model and content-sharing model. We had a lot of that in the beginning of the internet. If you remember what happened with the music industries on some of the streaming sites. Now things have stabilized and there’s an ecosystem which is working. I think the discussion between IP owners, content owners, and the owners of the large models, they need to find some business model that will be fair for everyone.

**Georgie:** Let’s talk about the industries that you think will be most affected and how.

**Sylvain:** So some industries will be massively affected and I think especially the service industries. If you look at functions like dealing with customer requests like you have in banks or large call centers, you have in for telecom operators or for retailers, here things will change because handling customers requests will be completely different because you have fully functional language interface and you’ll be able to deal with a chatbot basically, but under [inaudible 00:06:56] and which will be close to as effective as a human. So all those functions will change a lot.

All companies who have big IT development teams will also be massively changed and disrupted by GenAI, given what those techniques can bring to software development. Everything related to marketing will be very different. You can generate super powerful marketing content, infinity of visuals, text, punchlines, videos that you can send to clients. And here there’s a wealth of creativity that will be unlocked to go to even further, personalization of marketing content and marketing messages.
Because this was done using AI but at smaller scale in the past. Now this will be massive and you have companies who now send very personalized letters to their own B2B client or B2C client and with specific offers. So that's another part which will be big. Compliance is big. Compliance in some industries like banking or insurance is massive. And making sure that your processes for instance, comply or the text you publish and you send to your customers comply with compliance regulation is a real challenge because those compliance rules are becoming more and more complex and difficult.

And here a generative AI can help test, give a first pass at least on whether something is compliant or not. So all the compliance and audit legal part will be massively affected. Everything related to creation, so design functions, consulting functions, architecture, whenever you create stuff, GenAI can be a formidable help, an enhancer of what you do because you can go much faster, it can help you get new ideas. So this will be big.

All in all, I think today there's lots of buzz around. Yes, it will do everything and it's a bit naive sometimes, and some people see like the whole company being run by GPT 4 and that's a bit, I think, pushing it. Few people deeply understand how much this will be of a change for companies, how disruptive it will be.

And we were talking, Georgie, about the competitive advantage when you introduce a topic. It's massive because for long it's been said that data will make the difference and companies who have more data, who have stronger data will really be able to make a difference and beat their competitors. With GenAI, where data don't even need to be labeled to be used by model and ingested into models makes it a reality. And one thing which will be very interesting to see from a competitive standpoint is how many players will really come up with very successful large models and generative AI solutions.

Here, the jury is still out. Some people would say it's going to end up in an oligopoly and if that's the case, probably regulation will be needed. Others still think that there will be many options out there depending on industry topics and all that. Let's see how it turns out, but there will be some fascinating moves in terms of a competitive advantage and value chains too because one of the big questions is you become dependent or a heavy user of some of those solution, how much will this cost you?

Everyone has in mind how strong Google has been on digital advertising and Google has powered a lot of offers and enabled and enhanced lots of business but also made a lot of money from this service. And one question is that all companies I meet have is, "How much will this cost me in the end if I use those tools at scale massively on many functions? And how much of my value add is basically transferred to the owners of those large models?"

Georgie: Are we expecting a huge load of job losses? We've spoken about just transition for the green revolution, as it were. Are we expecting we'll need a just transition for the next stage of tech? Do we need to keep them in the loop as you said earlier?

Sylvain: There's a report which was outputting that 300 million jobs would be impacted on the planet with GenAI. So these numbers can be super scary. My sense, yes, most jobs will be impacted because the use of GenAI will be for everyone. Microsoft has already announced that the whole open AI solutions would be embedded into their suite of products that many and many and many people are using around the planet. So now the question is will this just bust jobs or not? It's hard to say.

If you look at when ML was launched, some of the similar reports would have similar numbers and everyone was expecting many jobs would disappear and all that. It has not happened in the last decade, partially because deploying those technologies takes time, partially because yes, there is some automation, but that's also an opportunity for people to do other things. What's true with GenAI is that the shock is bigger because the disruption is bigger.
So hard to say exactly how it will play out. I don’t think this will be massive across the board everywhere, massive job reduction. There will be some impact though. But if you think for instance about software developers, you can expect something like 50% at least productivity gains for software developers by automating, using GenAI, some of the repetitive tasks, mostly documentation, unit testing, and all that. Now the question is, assume it’s even 80% productivity gain. It means the cost of coding drops by 80%. What’s the impact? Is it massively less and 80% less developers, or is it 80% more lines of code which are being written?

The world is dying for code. We need codes everywhere and code are the cost. By hashing the cost down, by enhancing productivity, we will see more codes and more lines of codes being written. And that’s good because there’s lots of things that we could get done using more code.

So in the end, how will this play out? I think it’s hard to say. I would not be, personally, in the most alarmistic camp. I think yes, there will be job losses. Yes, there will be job hashing. Yes, some of the losses will be absorbed by additional demand because cost is falling, but also it will take time to deploy those technologies. And if I look back a bit as what has happened with [inaudible 00:13:12] and machine learning, time to really scale those solutions in companies has been long and there’s an adjustment period and it’s not like a tsunami, which is crashing teams all over the planet.

Georgie: Forgive me for asking this, Sylvain, but you’ve outlined a lot of risks. It makes me wonder why we’re moving so fast to create this technology that could be incredibly, incredibly disruptive. I mean, I can see the productivity, the competitive gains for business, but I don’t see many gains for society.

Sylvain: I think that question is a bit the same as for AI as a whole. You might say is it worth it or not. And you have voices and recent voices who have expressed a need to take a pause maybe in the development to make sure that regulation and the context is improving so that we can deploy all those technologies in a safe way. And of course we need to be cautious and we need the regulators to be at play.

But if you look at what those technologies bring, yes, there are some risks, but there are some massive gains. Using GenAI you can build some tools to teach children how to count, how to write, how to speak English. You have many parts in the world where education systems are not well funded enough to provide to every kid access to effective primary education, that you can solve using those tools. And because they’re so personalized and so powerful, you can have some incredible digital assistant to teach kids how to write, count, speak, learn foreign language, do math. I mean, it’s huge.

If you look at ag, ag and natural resource management is a massive challenge for the planet. On average, our climate challenge, probably 25% of it can be solved through using existing technologies. To solve the next 75% you need super disruptive technologies and AI and GenAI play a massive role into that. If you think of health, health is a mega challenge for all of us. And if we start getting to super predictive medicine to personalize drugs, to finding more drugs faster, AI is a massive unlock for that. You have teams today who are codifying massive medical knowledge using large models like ChatGPTs for knowledge graph, and they massively accelerate the number of molecule proteins candidates to cure some disease.

And that can be tested in lab versus the regular way where you have research team talking to others in Congress, reading articles, and all that, and then deciding to test something. So yes, there’s a risk in those technologies and sometime also those technologies are choose of increasing global warming because of the emission that they generate.

But those technologies, they have a massive positive impact on society and all the productivity gains, the resource allocation gains which companies make when they use those technologies are also a way to
reduce their footprint to better use every kind of resource from natural resource to human resource to every kind of resource to better serve clients and to improve productivity and wealth in the end.

So I’m really in the camp of believing that it’s super important that we continue to push on those technologies, but that’s a very strong call to make sure it’s done in a very responsible way, hence the call from Elon Musk and others to make a pause and to really think it through, the call to regulators to make sure that things are done well.

And the big call for companies to build responsible AI functions because being responsible in deploying AI is not just hiring one dude and telling the dude “You’re head of responsible AI. So now we are done. We have someone taking care of that.” They need real functions built-in, but companies who can deploy those technologies in a responsible way will win in the end and society needs those technologies to be deployed responsibly.

Georgie: Well, let’s talk about the business aspect of it. Is it enough just to, I guess, be aware of AI in your business, your business model, your business strategy, or do you actually need to develop a specific GenAI/AI strategy?

Sylvain: Oh, being aware is not enough. I think there’s a level of education that is required for company leaders to really understand what’s possible, what’s not possible, to go beyond the buzz. That’s very important. And there needs to be education on those techniques and technologies, which are a bit... sometime they look magical. So it’s an important thing to do. And then of course, companies need to start thinking about what their strategy should be.

And very often we see a bit of a trap because companies basically, you ask them, “What’s your AI strategy?” And they will say, “Oh, we want to become a data centric company. We want to become a bit like the iconic digital company. We want to be the Facebook or the Uber or the Amazon or the Alibaba of our sectors.” In the end, they’re all saying the same thing, which is a super far fetched vision in ten years when everything has changed.

What is very important for companies to decide where they decide to start, which function, which topic, which use case, and then invest significant resources to make sure that they fully transform. GenAI is super disruptive as a technology. It will be even more disruptive on the way people work, on the working processes in companies. And there is massive work to rethink those processes, upscale people who will be using those tools, rebuild those processes, and that’s a huge endeavor for companies. They cannot do that 360 everywhere at the same time.

So my advice to company leaders today regarding GenAI is of course you’re curious and you should be. So try and meet with the providers, meet with everyone, train your teams, train your leadership on those topic. And pretty quickly beyond curiosity, start being very clear on where you want to start, where this will make the most difference for you, what are the most strategic function where you want to see this coming, and then invest to get this working.

Like some banks are starting to say, or investors, “I want to use GenAI to be better at investing to find new investment opportunities faster than my competitors so that I can be first in market or first onto something.” It’s massive. It’s super strategic for banks. Of course, they have to push on GenAI for that and see very quickly how their current team’s GenAI can be much more effective at uncovering investment opportunities. So that’s massive, and that’s where banks and hedge funds could be focusing upon. If you have big consumer goods companies, this will be about marketing and the whole marketing function will be completely different. That’s where they need to start. So companies need to start where they will make a difference in the short term on their most strategic processes.

Georgie: What is it that clients are asking you most?
Sylvain: Clients, two months ago, every client would ask, "Is this hype or is this real?" Now we don’t get the question anymore.

Georgie: What was the answer to that? Is it hype? Is it real?

Sylvain: It’s very real.

Georgie: It’s real.

Sylvain: I think now most of the questions we get are around, "How safe is it to use? If I use that, are my data safe? Can I deploy that on a private cloud so that I’m sure that there’s no leakage and all my knowledge stays in my company and is not shared with others?" So that’s the number one concern, cyber...I mean, all those certification for now, and I think for the next six months will be one of the biggest competitive advantage that will differentiate the different models more than their theoretical accuracy or whatever. Companies need to be reassured that this is safe, managed, and that they will not lose their IP, their trade secrets, and all that.

Georgie: Is there finally, is there a blueprint that you can follow when building an AI strategy over let’s say five years? I mean, it’s such a fast... I say this with everything, but this is really fast-changing.

Sylvain: It is changing extremely fast. You could ask Chat GPT.

Georgie: Yeah, right. What would ChatGPT say?

Sylvain: For a blueprint for your AI strategy. My sense is what you do in the next 12 to 18 months matters more than what you think you will be doing in the next five to ten years. Short-term, deploying GenAI and other tools, because GenAI is not the universal solution to every problem for every company regarding AI and technology.

But focus on, in the short term, focus on the one, two, three areas where you really want to make a difference. If you think long term, it’s truly about the data advantage. What data do you have at hand? What data could you acquire faster, better, cheaper than your competitors? And either an area where your data have a real strategic value or will tech providers or your competitors have better data? And then you need to get into partnership strategies with them. But what will happen with your data? Which ones are valuable? Where do you have an advantage or not should be the focus of the strategic thinking for companies who look three, five years ahead in addition to thinking to the short term and where they deploy what in the next 12 months.

Georgie: Sylvain, thank you so much, and to you for listening. We’d love to know your thoughts to get in contact. Leave us message at The So What@bcg.com. And if you like this podcast, why not hit subscribe and leave a rating wherever you found us? It helps other people find us too.