

Harvard Business Review

How Generative AI Changes Productivity

May 2023

Karim Lakhani, Professor at Harvard Business School

How Generative AI Changes Everything is a special series from **HBR IdeaCast**. Each week, HBR editor in chief Adi Ignatius and **HBR editor Amy Bernstein** host conversations with experts and business leaders about the impact of generative AI on productivity, creativity and innovation, organizational culture, and strategy. The episodes publish in the *IdeaCast* feed each Thursday in May, after the regular Tuesday episode.

Generative artificial intelligence is grabbing headlines with the widespread public excitement over tools like ChatGPT. And early academic research shows significant productivity gains in written communications, customer service, market research, computer coding, and professional analysis such as legal work. Meanwhile, the technology is rapidly evolving and getting better the more people use it. As a leader, it's hard to stay ahead of the developments.

In this episode, *How Generative AI Changes Productivity*, Amy Bernstein speaks with **Karim Lakhani**, a professor at Harvard Business School and a coauthor of the book *Competing in the Age of AI: Strategy and Leadership When Algorithms and Networks Run the World*. They discuss initial productivity gains for individuals from the technology, how that will scale across a workforce, and the pressing challenges facing organizational leaders.

AMY BERNSTEIN: Karim, you've been experiencing some déjà vu lately, huh?

KARIM LAKHANI: Oh, yeah, 30 years of déjà vu.

AMY BERNSTEIN: Yeah. Tell us about it.

KARIM LAKHANI: Yeah, so I still remember the first time I saw the web browser. This is almost 30 years now. And I was working at General Electric at that time, and I was at a radiology conference, and this doctor pulls me goes, "Hey, Karim, look at this." And I'm like, what am I looking at? "Oh, it's a coffee

pot. This is a coffee pot at Oxford University.” I’m like, okay. He goes, “Yeah, this is the web browser. Now you can browse anywhere and get any information you want.” And it didn’t dawn on me till later that what he had showed me was that the cost of information dissemination was going to go to zero.

AMY BERNSTEIN: Huh.

KARIM LAKHANI: That coffee pot put aside by lazy researchers who didn’t want to cross a lab to look at if the coffee was full or not now had a global distribution of its image, of his video, live feed. And there’s a straight line between the browser being invented, Google being invented, and the rest is history. And I get the same feels today. We’ve been talking a lot about AI for 20 years, Amy, but until ChatGPT came out, nobody knew what it was. And then it’s like, oh my God. And it’s no surprise that a hundred million users started using ChatGPT in three months, which is a ridiculous number. And they all had the same deja vu moment that I had. Like, oh, now I understand what this AI thing is. And it’s cute right now. I can get a recipe, I can get a trip planned, I can get a Kendrick Lamar version of all my papers. I’ve done that. I’ve taken our pieces and put them into ChatGPT and have a Kendrick Lamar rap about our article and competing in the age of AI. It’s great. It’s cute, but I think we are just getting our heads around what this means for us.

AMY BERNSTEIN: So, for you, Karim, it was about the dissemination of information.

KARIM LAKHANI: With the browser and then what that enabled. Yeah, exactly.

AMY BERNSTEIN: Yeah. And spoken a true economist. For me it’s when I saw my first hyperlink and I had this mind blown moment where I suddenly realized we can make connections across ideas, arenas, et cetera, with no friction whatsoever.

KARIM LAKHANI: Yes.

AMY BERNSTEIN: I felt my head expanding with that.

KARIM LAKHANI: Yeah.

AMY BERNSTEIN: But I kind of wonder what is the analog? What is it that you saw with generative AI?

KARIM LAKHANI: Yeah, I would say the cost of cognition, the cost of creativity is going to massively decline with generative AI.

AMY BERNSTEIN: Wow. Okay. That's a lot to wrap your head around.

KARIM LAKHANI: That's a lot. And I'm still, whenever I say that, I'm like, I don't know if I'm right or not. And this is where I'm like, stop being my rigorous academic. Today, lots of people are getting the same feels about this and trying to make sense of it. And so I think my aha is cost of cognition. Cost of creativity is dropping. And this has profound implications for us.

AMY BERNSTEIN: Right. Some of them kind of frightening if you carry it through.

KARIM LAKHANI: Yeah.

AMY BERNSTEIN: Welcome to *How Generative AI Changes Everything*, a special series of the *HBR IdeaCast*. Through conversations with experts, we're exploring how this new technology will change workforce productivity, creativity, and innovation. And we're asking how leaders should adopt generative AI in their organizations and what it means for their strategy. This week's episode: *How Generative AI Changes Productivity*.

AMY BERNSTEIN: I'm Amy Bernstein, editor of Harvard Business Review and your host for this episode. And I'm talking to Karim Lakhani. He's a professor at Harvard Business School and has been researching generative AI. He also cowrote the book, *Competing in the Age of AI*. Karim, welcome. I'm so excited to be having this conversation with you.

KARIM LAKHANI: So glad to be here, Amy. Looking forward to it.

AMY BERNSTEIN: Let's talk about what this-

KARIM LAKHANI: Yes.

AMY BERNSTEIN: -is because something big happened last November.

KARIM LAKHANI: Yes.

AMY BERNSTEIN: Something happened with AI, it became generative.

KARIM LAKHANI: Yes.

AMY BERNSTEIN: What happened?

KARIM LAKHANI: Yes. So, I just want to put it in historical context. So, I think there have been waves of AI. All the AI plumbing that has existed prior to this moment and remember have been fast learners. AI algorithms, machine learning algorithms that can make predictions really well. Pattern recognition really well. Automate processes really well. Netflix, Google, Amazon, Baidu, you name it, all were based on these technologies. Generative AI took all these things. And what did we have? We had massive data infrastructure in place. We had massive compute becoming available in place. And they said, instead of just doing a prediction about the next sales thing or the next HR person, if you want to hire, let's make predictions based on all of human text, all of human graphics that are out there, and get these systems to train themselves such that they can predict the next word. That's basically what's going on. The generative AI systems are basically ticking a corpus of text. Jack and Jill went up the blank, and now it's read everything on the internet. It has availability of all the texts in the world, and it makes a prediction of what the next word is going to be: hill. That's all it's doing. And in its most basic sense, that's all it's doing. And the same thing happens with all these image generation systems. It's basic predicting what the next pixel should be. That's it. But now take this and do it at scale. You fed it the whole world's information off the internet, good and bad. The whole world's images, good and bad, and then it's just predicting the next pixel, the next word. So, then what is it do? Jack and Jill went up the hill, and then you say, what's the next word? To. So, inside it goes back and says, what should the next word be? Fetch a pail of water. And behind it are systems that are voting and auto-tuning themselves to sort of say, what is the probability of the next word that needs to be? By the way, I'm abstracting out a ton of complexity, ton of math, ton of compute, and so forth, but that's essentially what's going on. But what happened was that these systems, these large language models started, these generative AI systems started to get developed basically five, seven years ago. And then people said, well, how do we make them better? How do we make them better? And then the big aha that OpenAI did is let's actually bring in some human feedback. Let's say when it generates a sentence, is this any good or not? Which is basically what they called reinforcement learning with human feedback. You create a reward

system that says the human gives you feedback and you be more like the human. And that was the training. And that combination of all this data, all this compute, this next word prediction, this next image prediction basically has given us these systems coming through. So, in one sense, it's like dead simple if you understand the history of AI, you understand what's been going on, but there's been this magical moment, and literally it feels like magic. I was working with somebody who's from Europe, and we're working on a case that we're doing, and I said, oh, let's go do this case together. And we put the text in, and all of a sudden it was generating all this text for us. He's like, stunned. I'm like, stunned. Oh, this is kind of cool. And the more I probe it, the more it responds to my prodding. It has no sentience. It's literally statistics at scale, giving us the next word, and build with human feedback, it just keeps getting better and better.

AMY BERNSTEIN: And so, now what we have, even in what feels like its infancy.

KARIM LAKHANI: Yes, it still is.

AMY BERNSTEIN: We have a tool that can pass the medical boards.

KARIM LAKHANI: Yes.

AMY BERNSTEIN: It can pass the bar exam.

KARIM LAKHANI: Yes.

AMY BERNSTEIN: It can apply for a job and get shortlisted.

KARIM LAKHANI: Yes.

AMY BERNSTEIN: And I'll just keep saying, this is in its infancy.

KARIM LAKHANI: Yes.

AMY BERNSTEIN: Right?

KARIM LAKHANI: Yes.

AMY BERNSTEIN: So, it's amazing slash terrifying.

KARIM LAKHANI: Yes. I'm not terrified. I'm optimistic.

AMY BERNSTEIN: Okay.

KARIM LAKHANI: You know me.

AMY BERNSTEIN: Yeah. You are an optimist. And I'm not going to ask the obvious question about is it going to be able to edit Harvard Business Review in six months? But...

KARIM LAKHANI: Well, look, Amy, if many people say, are machines going to replace humans?

AMY BERNSTEIN: Right.

KARIM LAKHANI: And many computer scientists have said, machines aren't going to replace humans. Humans with machines will replace humans without machines. I think now it's true. And I love sort of this copilot metaphor that Microsoft is using. So, now you have this copilot that knows everything, but remember when you are the captain and you have the copilot, it's your responsibility to keep the copilot in check and know that it's superpowers and that it has extraordinary superpowers, but also know its limitations. And that's where humans will matter. And my asterisk to this, machines won't replace humans, humans with machines will replace humans without machines is now, and maybe we'll need fewer of them. So, I think this is where it's going to get interesting for many of us. And it has huge implications for everything we do. Huge implications.

AMY BERNSTEIN: Well, and you know what you've described in your book, in your articles, and what I think you're getting at now is that it can make our jobs easier.

KARIM LAKHANI: Yes.

AMY BERNSTEIN: Right?

KARIM LAKHANI: Yes. It can help us do what we do better.

AMY BERNSTEIN: Yes.

KARIM LAKHANI: As well.

AMY BERNSTEIN: Yes.

KARIM LAKHANI: So, talk a little bit about how you see that happening in the near future. Yeah. My sense is that this transformation moment has arrived way sooner than any of us anticipated. And even my colleagues in computer science at Harvard, they're also stunned at the rate. So, there's like this inflection point we have reached with these technologies. So, fundamentally for me, this provides you with the Ironman suit, right? Those that Marvel Comics. It provides you with these superpowers. And the question becomes, how do you use it? Where to you use it? And how does your work change? How does your organization change when this becomes available? And already anecdotally, you're seeing some very interesting things where lots of the folks that were looking at AI thought people with low skills are going to get hurt the most. It looks the opposite may be true, at least on the left tail. So, if you imagine a normal distribution, a Gaussian distribution of skills, there's a people on the right tail, which are really high skilled, and people on the left tail, which are really low skill. Well, what the technology does is that all of a sudden now you become as good as the AI, which is remarkable. And already a bunch of studies have come out, which have shown for writing skills and for customer service skills and so on and so forth, the introduction of these technologies, everybody gets as good as the AI, which in itself is like mind-blowing.

AMY BERNSTEIN: So, it just brings up the quality level.

KARIM LAKHANI: It brings up the quality level. And then the question that we are all racing to understand is what's going to happen to the right tail? How will they use it? There are some early hints that we don't know. There's a postdoctoral fellow working with me, Dr. Fabrizio Delaqua, where he's actually done a full-on experiment that people fall asleep at the wheel with really good AI. Experts.

AMY BERNSTEIN: What does that mean?

KARIM LAKHANI: What that means is that if you have really good AI, it's really good at solving all of your problems. So, then you don't pay attention. And when the edge case comes, you don't notice it. So overall, your performance drops when edge cases come. And hence this thing about you are the captain, you have a copilot. The copilot is really good, but it's not flawless. And you got to be paying attention to what's going on. And so, if the right tail gets these technologies and they aren't paying attention, it could lead to worse performance, for example. But again, we don't know yet because we're just at

the beginning stages. Our training systems haven't changed. How we teach hasn't changed. Already today, Amy, I'm putting my cases into OpenAI and getting perfect, perfect student comments back. I put in there saying, imagine you were an investment making student at the Harvard Business School. Read this case and give me five comments that will make me look very smart. Boom. Then I can probe each of those comments, go deeper, go broader. So, now, if every single student of mine has these superpowers where they might not even read the case, if I put myself back 25, 30 years, I was pretty lazy as a student. And not to denigrate them, this is like when you have this tool available, you might just rely on it. If that happens, how do we teach? What should the curriculum look like? So, for us, it's a crisis moment. For me personally, it's a crisis moment as to what I'm going to teach, how I'm going to teach in the fall.

AMY BERNSTEIN: So, I'm going to say I'm scared-

KARIM LAKHANI: Yes.

AMY BERNSTEIN: -when you say that.

KARIM LAKHANI: Yes.

AMY BERNSTEIN: But I-

KARIM LAKHANI: I think it's amazing.

AMY BERNSTEIN: It's amazing. I think it's another conversation. What is education? What is learning? What is thinking?

KARIM LAKHANI: Huge.

AMY BERNSTEIN: How are you using?

KARIM LAKHANI: As much as I can?

AMY BERNSTEIN: Yeah. You use ChatGPT-

KARIM LAKHANI: Yes.

AMY BERNSTEIN: -every single day.

KARIM LAKHANI: Yeah.

AMY BERNSTEIN: How'd you use it today?

KARIM LAKHANI: By the way, it's not just ChatGPT now. It's such a big explosion, right? So, you can go back and forth between different systems and try that. And then I also use Bing's. And I'm using Bing.

AMY BERNSTEIN: I know

KARIM LAKHANI: I'm using Bing.

AMY BERNSTEIN: I have it on my phone.

KARIM LAKHANI: I know. I'm using Bing. Oh my god. But Bing Chat is great. And so, today, what did I do? So I've been super crazy busy, and I've been struggling with this piece of writing for an academic journal. My co-author and me going back and forth. So, I put three pages of text in. I said, can you please clean this up for me? All I said. And it clarified, it cleaned up, and I went back and forth, oh, do this, do that. And what would take me, if I had hired a copy editor, what would take me weeks of iteration of the copy editor, I was getting it done instantaneously. Okay. It definitely hallucinates, right?

AMY BERNSTEIN: Oh, yeah. So, say what you mean.

KARIM LAKHANI: Yeah, yeah. Hallucination. So, basically, look, it's a generative model, right? So, again, the Jack and Jill went up the hill to fetch a pail of water. It could also say Jack and Jill went up the hill to fetch your pail of oil.

AMY BERNSTEIN: And then credit Shakespeare.

KARIM LAKHANI: And credit Shakespeare, right? Because it's a statistical model that's generating things. Now, I think over time, the hallucinations will go down. You'll connect it better to more trustworthy sources and so on and so forth along the way. But hallucination. So, again-

AMY BERNSTEIN: You cannot let it autopilot.

KARIM LAKHANI: You can't do autopilot. You can't do autopilot.

AMY BERNSTEIN: That's the copilot.

KARIM LAKHANI: That's the copilot.

AMY BERNSTEIN: So, you talked about the edge examples.

KARIM LAKHANI: Yes.

AMY BERNSTEIN: Let's talk about a professional.

KARIM LAKHANI: Yes.

AMY BERNSTEIN: How is an accountant using this? How is a lawyer?

KARIM LAKHANI: Or should use it?

AMY BERNSTEIN: Or should use it?

KARIM LAKHANI: Yeah.

AMY BERNSTEIN: A consultant, someone doing what we used to think of as office work.

KARIM LAKHANI: Yes, yes. Lots of us do office work. That's knowledge work.

AMY BERNSTEIN: Yeah.

KARIM LAKHANI: Okay. The accountant, you have a massive spreadsheet. Put it in. Ask it to explain what the data mean. Ask it to do analysis for you, conversationally. We'll do it for you. You have a spreadsheet in which the columns, the data are missing, the columns are mislabeled. Ask it to go figure it out what might be. It'll do it for you. You are a legal assistant. You want to think about case law. I'm sure right now there are companies that are going to introduce. You have access to all the legal documents in the world. What should the case law be on this? Before it would take you hours, if not days, of searching. Now available to you instantly. Customize it to your particular circumstance. All the paralegals can be better than lawyers today.

AMY BERNSTEIN: Wow.

KARIM LAKHANI: And so that's the thing. Colleague of mine, lots of stuff are busy, but lots of demand on our time. So, he has to send out declines a lot. Now he's automated the process where the decline comes in. He presses a button. It drives an automation on the back end of Zapier, which then goes into OpenAI,

generates a very nice decline, brings it back into Gmail, and then it sends it out. And the responses he's gotten from the... This is so funny. From the people that he's declined, are the best responses ever because it's a sweet response. And typically I'm, like, very curt. I'm sorry. Too busy. Go away.

AMY BERNSTEIN: Yeah.

KARIM LAKHANI: Right. This is like, you're asking me about these things. Here's some references and so forth. I'm sorry, I can't help you. So, they come back and say, oh, thank you so much. You've really helped me, even though I know you're so busy.

AMY BERNSTEIN: Wow. So, it helps us even be nicer.

KARIM LAKHANI: Yes. Yes. And so, these are all these examples. And what's interesting, Amy, is that right now, again, we're still experimenting, we're still learning. But the speed by which this stuff is being integrated together is incredible. And that's why individuals will be the first ones to go adapt this.

AMY BERNSTEIN: So, how will organizational leaders even know?

KARIM LAKHANI: They won't. I think format individual worker productivity story, this is phenomenal.

AMY BERNSTEIN: Coming up after the break, we're going to lay out how generative AI is going to change productivity at scale, across a workforce, and across industries. Stay with us.

AMY BERNSTEIN: Welcome back to *How Generative AI Changes Productivity*. I'm Amy Bernstein. So, right now, generative AI is sort of experimental in the enterprise.

KARIM LAKHANI: Yes.

AMY BERNSTEIN: People play with it. You play with it.

KARIM LAKHANI: Yes.

AMY BERNSTEIN: I play with it. But productivity is obviously a huge opportunity here. So, how is this going to change the way we use AI in the workplace?

KARIM LAKHANI: Well, I think it's already changed it, right? Because people are now using AI for mundane tasks, like responding to emails, doing spreadsheet analysis, doing textual analysis, doing summaries. This is a new feature. I do a lot of Zoom calls. You record the Zoom call. You put the transcript in the Zoom call. It'll create a beautiful summary for you.

AMY BERNSTEIN: Wow.

KARIM LAKHANI: The entire conversation. You can ask it, can you generate for me the to-do list? Can you then also create the OKRs from this meeting?

AMY BERNSTEIN: Oh my gosh.

KARIM LAKHANI: Okay. So, that's now. This is not science fiction. This is not six months from now. Today, you can do that.

AMY BERNSTEIN: Wow. So, let's go through a lightning round of enterprise functions.

KARIM LAKHANI: Yes. Yes.

AMY BERNSTEIN: Can generative AI help with taking customer service calls?

KARIM LAKHANI: Yes. Already. So, there's a study that just came out that showed, you can imagine the augmentation scenario and the automation scenario. The augmentation scenario shows that in fact, the low end of the customer services get way better. So, now you would not have the variance that you often see in customer service. Massive. Okay. Now, you can also imagine an automation scenario where the first level triage is happening through generative AI. You have literally a chatbot that is trying to answer as many... Now, you can actually give it your entire manual and then just do that for you. Just on this example, I was talking to some folks who run submarines, and they're like, I love a generator device system that has all the submarine manuals ingested. So, now I have the full knowledge base about this, the submarine manuals, and live data. Then I can just be sitting there saying, hey, what's going on with you sub, today? That's the same as the customer service. Imagine customer service for the submarine where you're actually talking to live submarine with all this stuff coming in. Statistics at scale, doing this for us.

AMY BERNSTEIN: A synthesis.

KARIM LAKHANI: Yes. Yeah. Yes.

AMY BERNSTEIN: All right. Streamlining administrative tasks. Yes. We talked about.

KARIM LAKHANI: Yes, of course. Yeah.

AMY BERNSTEIN: Scheduling and task management.

KARIM LAKHANI: Yes.

AMY BERNSTEIN: Where do you see that?

KARIM LAKHANI: Well, again, the calendar synchronization. We sent a Doodle poll.

AMY BERNSTEIN: Oh gosh. To everybody.

KARIM LAKHANI: And then what, what what? Now it'll just literally look at your data and look at everybody's calendars and says, here's the three dates that make sense. Go.

AMY BERNSTEIN: Wow. Okay. How about identify talent gaps and train employees?

KARIM LAKHANI: Well, what you have to do is now break it up into components, right? That's like a NHR person would think about or manager would think about. Look, one thing is I'm hearing already is that this race is a very interesting horror story, ethical dilemma, and so forth. Do you work with ChatGPT to create your employee reviews?

Should you?

AMY BERNSTEIN: It's out there.

KARIM LAKHANI: It's out there, and people are doing it.

AMY BERNSTEIN: Yeah. Feeding ChatGPT any piece of information you don't want out in the wild is kind of crazy.

KARIM LAKHANI: Well, no, but now look at the announced private mode. So, now you can, and this is the rate of change is so fast, private mode is available,

and you can now do that. So, you just use the large language model, but it doesn't go back into the training data set. And OpenAI just announced a OpenAI for business is coming soon. So, that again...

AMY BERNSTEIN: And they'll be gated model. There are gated models.

KARIM LAKHANI: Lots of those kinds.

AMY BERNSTEIN: Of things. But here's the question. Just if I have a team and I'm their mentor and the supervisor, what is my role? And then you could almost imagine a thought partnership experiment to say, I'm trying to build this type of a team. What kind of talent do I need?

Right.

KARIM LAKHANI: Look at the world. Tell me what talent I need. Does this talent exist in my company if you have your HR data locked into it, right? Then you go, okay, what skills do they need? Do these skills exist?

AMY BERNSTEIN: Really strategic HR leaders already have strategic talent plans, right?

KARIM LAKHANI: Yes.

AMY BERNSTEIN: What skills they need on board. They have audits of the skills they have on board. They know what the gaps are, right?

KARIM LAKHANI: Yeah. But those are all handcrafted – take thousands of hours of work and feedback. Now, some of these systems are sophisticated, so they have all this data around and is labeled. Now imagine if you've done that heavy lifting and that data in your HR system exists. Now all of a sudden you can be, actually, you could be one of the best employers because you could be thinking about where the trajectory is. You might identify gaps, you might get suggestions from new training.

AMY BERNSTEIN: So, we know it can help with communications of all sorts.

KARIM LAKHANI: Yeah, marketing. Marketing is completely changed now.

AMY BERNSTEIN: How so?

KARIM LAKHANI: I was talking to CEO of a large real estate development company, and they're like, "I'm having second thoughts about how big my marketing organization is, because all of our press releases are now being done through this thing. And they're really good."

AMY BERNSTEIN: And they're really good, and they're seeing results.

KARIM LAKHANI: But again, imagine...

AMY BERNSTEIN: I can just imagine a clothing retailer.

KARIM LAKHANI: Yes.

AMY BERNSTEIN: Sending me pitches with people who look like me.

KARIM LAKHANI: Yes.

AMY BERNSTEIN: Who are shaped like me.

KARIM LAKHANI: Yes.

AMY BERNSTEIN: In clothes that look good.

KARIM LAKHANI: Yes. Yeah, exactly.

AMY BERNSTEIN: That would work.

KARIM LAKHANI: That would work, right? Yeah, that would work. Another mind-blowing company these days is Shein, right out of China. Shein is blowing my mind. They have 6,000 SKUs per day that they launch.

AMY BERNSTEIN: Wow.

KARIM LAKHANI: They can scale production from 100 items in a factory to 100,000 in a week. All AI driven, all digital, all based on consumer marketing, consumer trend spotting, and being able to do that at scale.

AMY BERNSTEIN: So, you just mentioned factory. How can generative AI increase efficiency productivity in a factory?

KARIM LAKHANI: So, just imagine, again, for quality control, for detecting errors, it can do that on the fly with you. It can help you. But then also I would

say that the whole process automation side of things can be greatly enhanced. And I think the main thing to think about is people often say like, oh, there's digital transformation and then there's AI. I go, no, it's the same spectrum. The scenario we talked about the submarine, right? Automated customer service for the submarine about how it's feeling today. That can also be in the factory if you have the data streams from your devices available on the fly to then interact with these models. So, the digitization imperative increases even more so. If your factories aren't connected, if your devices aren't connected, you won't be able to benefit from it. So, you got to build the AI factory, you got to build the data pipelines to then add this layer on top of yourself.

AMY BERNSTEIN: So, it's imperative.

KARIM LAKHANI: Yeah.

AMY BERNSTEIN: What did I leave off? How else can generator AI improve firm productivity?

KARIM LAKHANI: Look, the way I would sort of think about is that we can find many use cases across the board, but I think the question I ask myself, which is how does the nature of the firm change given these capabilities? What does the firm look like? Which is we can add pockets of generative AI across the enterprise and do this and do that and do that. I think my worry is then we're going to be back to the Barnes and Noble and the internet. So, if you think about it, Barnes and Noble, also at barnesandnoble.com, b&n.com was set up, and they tried to patch the internet on top of their existing business. And ultimately it was not successful.

AMY BERNSTEIN: All right. We are already seeing companies struggling with integrating AI into their businesses. We know it's hard. How does generative AI?

KARIM LAKHANI: It makes it even harder to change. Because again, what's going to happen is that there'll be lots of use cases and we'll get the bumps in marketing. We'll get the bumps in manufacturing. We'll get the bumps in legal services and so forth. But that will be the incomplete story. Because what's going to happen is this has Amazon emerged as a new model to how you organize your firm. That the opportunity is for executives to not just be satisfied with the bump or put it aside on this one part and not bring it in, but

to rethink processes, rethink their business model and their operating model. I think that's the big, big imperative that lies in front of us.

AMY BERNSTEIN: And the promise there is efficiency.

KARIM LAKHANI: Efficiency, productivity, better customer service, better profitabilities, you name it. Right? And again, what have we seen in pockets of in group out of China and financial services. Shein now and Temu for fast fashion, fast retail, Moderna as an example for pharmaceuticals. And lots of pharma companies are trying to catch up and build their models.

AMY BERNSTEIN: These are all companies that were born digital.

KARIM LAKHANI: Yes.

AMY BERNSTEIN: What if I'm GM?

KARIM LAKHANI: GM is on a road to be digital, and they have to do more. Ford has to do more. Disney's a great example of people that are trying to do rethink and really push, and they'll have to do more as well.

AMY BERNSTEIN: But the generative AI is not just a wrinkle.

KARIM LAKHANI: No.

AMY BERNSTEIN: They have to rethink how they're rethinking.

KARIM LAKHANI: All the creative aspects of it, all their marketing aspects of it, all the experiences that they do, all of them.

AMY BERNSTEIN: And you've, in your book, made a very compelling case that companies must embrace AI, and they have to do it at the IT architecture level and at the organizational architecture level. But given how easy it is for the individual to use generative AI, is the argument still the same?

KARIM LAKHANI: I think so. Even more so, I think. There's a rough rule of 30/70, 30% is tech, 70% is organizational. And so, again, maybe we'll get a bigger bump. We don't know yet in the productivity statistics of people using this in the firms with their existing jobs. But I'm just worried that we're going to have lots of Barnes and Nobles around which have a website, right? They'll do e-commerce. But the guts of it are still the physical stores. And so,

ultimately, we'll suffer, and then we'll have the K-marts and the Sears disappear along the way. They all had websites. They all had e-commerce. They spend hundreds of millions of dollars on it, but they didn't rethink. And so, I think the question becomes, can you rethink? Can you rethink processes?

AMY BERNSTEIN: It cannot be a Bolton.

KARIM LAKHANI: No.

AMY BERNSTEIN: No.

KARIM LAKHANI: And it requires this top-down understanding. Leaders have to learn and embrace, and not just for themselves, but for their whole organizations. There's a big learning mandate here for boards, for the C-suite, and for the rest of the organization.

AMY BERNSTEIN: Karim, I just learned that Microsoft is going to integrate.

KARIM LAKHANI: Copilot everywhere.

AMY BERNSTEIN: Everywhere. So-

KARIM LAKHANI: Office, PowerPoint, Excel, Word, you name it. BI, their business intelligence suite, all that kind of stuff.

AMY BERNSTEIN: So, we're all going to be able to experience the productivity boost of generative AI.

KARIM LAKHANI: Yes.

AMY BERNSTEIN: On an individual, by individual level. But the promise is really scale.

KARIM LAKHANI: Yes.

AMY BERNSTEIN: How do we move from, oh my goodness. It is so much easier to make a deck now, to organizations achieving unimagined scale thanks to generative AI.

KARIM LAKHANI: Look, I think the question now becomes, if it's so easy to do knowledge work with this copilot, what more can you do? If something took you two weeks and now it takes you two hours? Are we in the beach for the rest

of the time? Or are we going to just be able to do a whole lot more? And so, I think that's going to be the really interesting question. I'm excited to see where I am still scared, but also optimistic about what this means for us. Because when photography got invented, there's a direct line between photography getting invented, and the modern art moment arriving, because still life was no longer the thing that people cared about. And the European art scene changed, and we're now in this world of modernism. So, I don't know yet, Amy, how to think about when accountants get all of this productivity boost, what will they do? Again, the answer could be twofold. One answer is, well, we don't need as many accountants, so let's fire them all? But I think that would be the wrong answer. Some companies will do that, and I think that'll be the wrong answer. Now you say, if my accountants have the superpower, what more could they be doing? What additional higher level stuff could be doing? And we see parallels of this. Remember when the ATMs got introduced, we thought all the bank tellers would be fired. And what happened instead is they became financial advisors. So, I don't know what the accounting financial advisor equivalent is going to be, but it's going to emerge. And that's the exploration that I think we should all be open to. And leaders need to be thinking that way. You can do the cut, cut, cut model, but that won't make it an attractive place for you to work. If you now say, enablement model, reinvention model, that's the exciting story.

AMY BERNSTEIN: Because you've removed the boundaries on human capability in a big way. And in terms of leadership and management...

KARIM LAKHANI: Yes.

AMY BERNSTEIN: To me, this is also mind-blowing.

KARIM LAKHANI: Yes.

AMY BERNSTEIN: Because on the one hand, it suggests that the humanity of leadership becomes all the more important, right?

KARIM LAKHANI: Yes.

AMY BERNSTEIN: But what can you enable?

KARIM LAKHANI: Yes.

AMY BERNSTEIN: What can you make happen as a leader with this tool that you weren't able to do a year ago in terms of inspiring and motivating?

KARIM LAKHANI: Yes.

AMY BERNSTEIN: Your team, but also in terms of accomplishment.

KARIM LAKHANI: Yes. Accomplishment. And look, I think it goes back to, one of your cover stories was the purpose driven firm. I think we're going to be back to purpose. What is your mission? Because now you can accomplish your mission. What is your worthy mission that's going to attract people to work with you?

AMY BERNSTEIN: And then once you've integrated these capabilities, how do you accomplish it in a way that is doing well and doing good.

KARIM LAKHANI: Exactly. Exactly.

AMY BERNSTEIN: So, we've talked sort of vaguely about the opportunities. How do I, as an organizational leader, start thinking constructively about those opportunities tomorrow? What do I do? How do I identify them?

KARIM LAKHANI: Yeah. I would say it's learning and doing. Learning is immersion for yourself in the tools, and the learning is through doing as well. So, practice, read, take courses.

AMY BERNSTEIN: But not just you individually. You have to organize your team to do it.

KARIM LAKHANI: Exactly. Exactly. Start to do stuff, and start to reimagine what work looks like in your functions, in your organizations. I think that's the biggest imperative.

AMY BERNSTEIN: And we've hinted at it, and a lot of folks have remarked on this, that it's part of the hype cycle, which is the horror piece, which is this going to eliminate a lot of jobs? How do we think about workforce now?

KARIM LAKHANI: Yeah. Thank God I'm not a macroeconomist.

AMY BERNSTEIN: Yeah.

KARIM LAKHANI: What I would sort of say is there going to be transition? Is there going to be upheaval? A hundred percent. A hundred percent. Will there be misguided regulations? Will government intervene, clumsily? A hundred percent. It's going to happen.

AMY BERNSTEIN: Right.

KARIM LAKHANI: This will go in fits and starts. And I can imagine that a set of leaders will do the efficiency story and it'll get super lean. And a set of leaders will say, I've got all these people, what can I do with them? And what more can I do? So, either we'll be in a world of efficiency and scarcity, or one of abundance. I've got all this stuff, all these great ideas, all these amazing options. What more could I do?

AMY BERNSTEIN: So, maybe it's a growth story versus an efficiency story.

KARIM LAKHANI: Yeah. But I think we'll see both. I think both will show up and it'll depend on the leadership moves. But I still think my big worry is, are the Barnes and Nobles going to survive? Will this just be Bolton? Or will we do radical transformation as we need to?

I just heard this thing. It's crazy. Somebody was in a board meeting and there was some discussion about pricing, and another board member was on ChatGPT asking it, feeding it some questions, and then using that in the board meeting back.

AMY BERNSTEIN: Wow.

KARIM LAKHANI: So, if board members are doing this, and this is a legit big firm. Wow. All right. And so, the CEOs have to take on the learning, take on the doing, embracing it, not fighting it. Also don't be stuck in the cross section of capabilities today. Even the 3.5 to 4.0 on the OpenAI models, massive improvement in performance. And what's happening, Amy, which is so interesting, is that it's not just one company. There are hundreds of companies trying to do this. So, we will just see commentary explosion of new ideas and new ways to build these things happen. And so, you don't want to be in the receiving end of it. You want to be in the leading part of it, from my perspective, to make that happen. And then put on your designer hat and think about what does the design of your organization look like? I would encourage abundance thinking instead of efficiency thinking.

AMY BERNSTEIN: Karim, thank you so much for taking the time to have this conversation.

KARIM LAKHANI: You're welcome. Always, always, always a pleasure to chat with Amy.

AMY BERNSTEIN: That's Karim Lakhani, a professor at Harvard Business School who specializes in artificial intelligence. He cowrote the book *Competing in the Age of AI: Strategy and Leadership When Algorithms and Networks Run the World*.

AMY BERNSTEIN: Next time: *How Generative AI Changes Creativity*. HBR editor in chief Adi Ignatius talks to an artist as well as innovation researchers about the impact of this tech on creative work. That's next Thursday, right here in the HBR IdeaCast feed, after the regular Tuesday episode.

AMY BERNSTEIN: This episode was produced by Curt Nickisch. We get technical help from Rob Eckhardt. Our audio product manager is Ian Fox, and Hannah Bates is our audio production assistant. Special thanks to Maureen Hoch. Thanks for listening to *How Generative AI Changes Everything*, a special series of the *HBR IdeaCast*. I'm Amy Bernstein.

Latest in this series

Episode 910

A Marketing Professor and a Matchmaker Talk Personal Branding

09 May 2023

Episode 909

How Generative AI Changes Productivity

04 May 2023

Episode 908

Disruption Isn't the Only Path to Innovation

02 May 2023

All episodes

This article is about [AI AND MACHINE LEARNING](#)

