AI, quantum and beyond: implications for business

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AI and quantum readiness and oversight require cultural agility

Tapestry Networks recently convened a group of board directors, executives, and other senior leaders from global companies for a series of discussions entitled *AI, Quantum and Beyond* to explore how disruptive technologies are reshaping business strategy, risk, and governance. The discussions featured perspectives from leading technologists, corporate practitioners, and board members. These discussions demonstrated that senior business leaders are still wrestling with how to scale, govern, and extract real value from AI. Directors are in what one participant called the "*show me the money*" phase, in search of real, measurable outcomes from AI investments. The discussions revealed a shared sense of "*excitement tinged with fear*" as leaders push for ambitious use cases while confronting data problems, cultural inertia, and probabilistic systems that regulators and auditors do not yet fully trust. Quantum sits just over the horizon—less immediate than AI, but already informing board conversations about cyber risk, discovery, and future talent.

Making effective progress on AI is a balancing act

"Everybody is trying to figure out AI," according to a director, *"and I think everybody is in their own stage of that journey."* Most participants agreed that their organizations remain focused on use cases designed to drive efficiency and productivity gains. *"There's already a huge impact that you should be driving with AI in core aspects like productivity, which is basically for existing jobs, for existing tasks, for existing processes. Without changing anything, you can use AI to improve the productivity on those,"* said an executive. However, participants cautioned that an exclusive focus on efficiency is increasingly insufficient. Other applications for the technology are emerging, which can have broader competitive implications: *"Efficiency should be a focus. But if you only focus there, then you are missing other waves that are happening at the same time. When you are thinking about your strategy, think about balance. Don't just focus on one aspect. You need to be thinking at the same time about efficiency, agentic AI, and more transformational use cases, and then thinking on how to scale it,"* advised the executive.

Data strategy remains the key to success

Successfully leveraging AI requires getting the basics in order. Across all three sessions, participants emphasized that the true differentiator in AI is data, and that for many organizations, AI is exacerbating long-standing issues*: "What we found is you hit your bad data incredibly quickly, and the next thing you hit is your bad and broken business processes,"* one participant admitted. Another participant agreed saying, *"Availability of useful data is a big problem. If it's hard for a human to find data, how do we expect an AI agent to fare any better?"* A director observed that while some companies *"got real about their data strategy years ago,"* for those who didn't, *"it's been a whoops moment."* The struggle is how to *"go backward while still continuing to move forward, how to cure the issue yet not lose velocity on the things you want to make progress on."* Participants identified several strategies for improving data management:

- **Create an inventory of data assets.** *"If I asked for a list of your organization's financial assets, you could give me a list. If I asked you for a list of your physical assets, you could give me a list. But you can't give me a list of your data assets because you don't actually know what you have, where it is, or what it's useful for. You've got to catalogue your data properly, and build an inventory,"* said a participant.
- **Use AI to identify related data and flag sensitive data.** AI can help organize data. According to one participant, *"AI is actually incredibly good at linking semantic language. So, if you pull data from system A and pull data from system B, they might use different words to describe the same thing, but AI is incredibly good at matching. It's incredibly good at figuring out what's related to what. That's not just generative models either, there are also a series of other machine learning techniques that can be used for this. Another thing it's very good at is privacy masking, so identifying private information and effectively tagging it appropriately."*
- **Consider consolidating the responsibility for data strategy.** *"The template that has given me the most comfort is somebody who plays the role of chief data officer at the enterprise layer. I'm not suggesting a chief of AI or talking from an organizational structure perspective. Rather, from a roles, responsibilities, and accountability perspective, looking to have an overall corporation level data owner. They make sure that the quality of the data is intact, that it's auditable, that it's protected,"* explained a director.
- **Ensure technology and business line leaders work together.** A director observed, *"There are going to be similar applications and similar vendors across a company. Therefore, it's very important that AI development and data management are done in a central way, with businesspeople involved, because this is all about changing processes and workflows. You must have the business owner involved, whether it's the data chief, chief of AI, or data officer. Just a tech person won't work, and just a businessperson without any appreciation for tech won't work either."*

The "show me the money" phase has arrived

Even after years of large investments and hype, participants agreed that few leaders think their companies are realizing the full promise of generative AI and are identifying ways to better measure the returns on their investments. One director noted that there is a clear shift from enthusiasm around experimentation and pilots towards accountability for implementation and scaling use cases. Boards are no longer content with general promises about AI's potential; they are looking for evidence of efficiency gains, cost savings, or revenue growth tied directly to AI initiatives. A participant stated, *"We're at the point now where the rubber needs to hit the road."*

However, "showing the money" is easier said than done. According to one executive, *"It's incredibly hard to actually get value that is verifiable, that is financially interesting, and goes beyond personal productivity and showing an employee can save 10 minutes of their time by not having to do meeting minutes."* Demonstrating a direct return on AI investment leading to top line growth is even more difficult: *"It's a lot harder to show top line growth. Of course there are techniques to measure it, but can you attribute it to AI? Or is it something else? Those are the questions we're grappling with right now,"* observed a participant.

Given the challenges in demonstrating financial returns, some participants suggested organizations focus instead on clearly defining their desired outcomes to better assess the value or impact of their AI initiatives. *"Show me the money is a relative term,"* according to one director, "*because a show me the money moment could be when you've engaged in enough conversation with the regulatory community so they're comfortable with the path you intend to take. I mean that's a milestone moment in certain industries."*

Culture, upskilling, and leadership are a challenge

Implementing AI at scale is as much a people challenge as a technical one. *"This is not a technology problem anymore. The technology can scale. The hurdles are now the company and the internal culture,"* explained a participant. Effectively changing culture within an organization is a daunting task, noted a director, but *"you have to empower every employee to thrive with AI."* Participants noted several approaches to overcoming workforce and leadership challenges:

- **Rethink roles and organization**. Senior leadership, including directors, must be fully engaged in reimagining the skills and workforce capabilities that may be needed in the coming years. One participant shared, *"How do you make sure that you're investing appropriately in your talent pool so that the ones you want to invest in are ready for the next wave? That reimagining is an important role for the board to not execute on, but to encourage the leadership team to be thinking about it, to add our thoughts to the conversation, to add our challenges to the conversation, and to add our experiential frame to the conversation."*

- **Invest in education at all levels**. Boards should ensure their organizations have concrete plans to raise the AI fluency of leadership and staff at all levels. *"Start your awareness and education program in a way that is appropriate to different levels of the organization, and you'll have a higher chance of success,"* said a participant. One executive shared how they trained senior executives in a two-part program: *"First, it was a state of the nation, showing what was happening in the market. That way they're comfortable with the terminology, with how to put all the news that they're reading, all the things they're seeing, into context… Second, we gave them practical education, teaching how to construct a prompt. Even for those who know how, we encouraged that, just like anything else, you do need to not only learn the right basics, but you need to practice."*
- **Foster a culture that supports experimentation.** The board and management need to empower employees and create room for experimentation: *"This is an iterative process, and it intrigues me that, in the boardroom, people want 100% certainty before taking a first step. As opposed to recognizing that there's going to be milestones and there's going to be failures, hopefully not big failures, but small ones and that's how you achieve advances,"* commented one director.
- **Use incentives to drive behavior.** According to one participant, *"It really starts with culture and innovation. The board together with management should look first at the culture of the company to ensure that you have the right basis, the right innovation, and the right incentives."*

Balancing innovation and risk through robust governance

As organizations move from AI pilots toward larger-scale deployments, boards face a dual mandate: encouraging bold innovation while ensuring governance and controls are in place. When generative AI first exploded, many boards were preoccupied with mitigating risks from biased algorithms, data privacy, "hallucinating" chatbots, and regulatory uncertainty. Those concerns have not disappeared, but directors now recognize that over-caution poses its own risk. Falling behind on AI is a strategic threat, and governance must keep up. A participant said, *"If we don't get prepared with the right governance model, it's coming fast. Maybe it's really successful, maybe it's nowhere near as successful as we thought, but it's coming and we have to be prepared."* Directors need to balance urgency and diligence. *"It's incredibly important, sitting at the top of the house, that we are probative and keep pushing certainty, predictability, consistency,"* said a director. Participants highlighted some key insights about how they're currently thinking about AI governance and oversight:

- **Agentic AI will challenge controls.** A participant observed, *"Right now, in the generative space and the focus on personal productivity, there's a human in the loop. They're well trained. Those are actually a pretty low risk kind of AI activity."* However, as organizations move toward agentic AI that automates workflows and potentially removes the human from

direct oversight, *"you're probably talking about a very, very different risk profile."* Even where a human formally remains in the loop, a director cautioned that this may become ineffective in practice: *"Things will move too fast,"* reliance on AI will become so high that the human is *"unmotivated to spot anything that goes wrong,"* and the human ultimately becomes *"an irrelevant post-event control."* As a result, risk controls must be embedded into how AI is designed, embedded, and governed.

- **AI agent oversight can be modeled after traditional employee oversight.** As a participant explained, *"A good practice is one where you're truly seeing AI agents as employees. That someone who is bringing on agentic AI capability in their vertical, who is trying to use it to solve an issue, has the same accountability for that agent in the way that they do for any employee. What is the performance expectation? Is it meeting expectations? And if not, are we going to keep that agentic technology around?"*
- **Board pressure may exceed executive and organizational readiness.** One director asserted, *"Most CEOs are feeling that they are the decision maker, but my sense is they aren't feeling like they really have the skills and knowledge to be the decision maker. And it doesn't sound like they've brought their troops along nearly as quickly as they would need for the way the board may be pushing them to go on. Board members need to be aware of this tension and figure out how to navigate it."* Another director quipped, *"We have increased their budget; they have the money, but they don't know what to do with it."*
- **Boards and executive teams should support speed, experimentation, and organizational learning.** *"This is even faster than anything we've experienced in the past. And when you're in this period of rapid innovation, you better have a structure that allows experimentation and learning deep down within the organization. Because if you don't, I think you could really miss out on where some of the very best solutions could be. I think there needs to be a hybrid approach of leaning more towards letting some things fail but also making sure that you're learning across the enterprise as you do that,"* explained a participant.

Quantum is next on the horizon

After AI, quantum computing is the next disruptive technology looming on the horizon. *"The only thing that the industry agrees on is that things which sounded futuristic in the past are now going to happen in the short term, meaning in the next five to maybe ten years, but closer to five,"* predicted one participant, who emphasized the transformational impact quantum will have on *"many foundational processes."* Unlike AI, which can often be plugged into today's operations to incrementally improve them, quantum computing is about achieving breakthroughs that were previously impossible. *"Don't think of quantum as a new fancy GPU that is going to accelerate AI or accelerate existing compute processes,"* one executive cautioned, *"It's all about discovery. It's all about doing things that you couldn't do before."* Use

cases may be relatively narrow like conducting complex simulations or optimizations. A participant explained, *“It's not going to apply to everything, it’s going to be targeted at specific processes. Think of processes where you don't have a lot of data, because quantum is not good with a lot of data. But what it does very well is compute. It does it exponentially better than classical computers.”*

While the timeline for broader quantum adoption means that boards may not need detailed discussions about it at every meeting, they should nonetheless ensure someone in the organization is watching developments and thinking through future threats and opportunities. Crucially, there are actions to consider now to prepare for quantum, particularly in cybersecurity. Participants highlighted that quantum computing poses a risk to current encryption standards. *“Any communication that you’re currently doing today, a bad actor can be storing that somewhere, and then once that quantum machine is available, it can go back and break your communications,”* a participant warned. *“That’s hugely relevant even today.”* Organizations can and should begin implementing quantum safe standards now. Another participant advised, *“You can be quantum safe without using a quantum computer. You just need to update your technologies so that the way you perform those communications and you store your data is in a way that is quantum safe.”*