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How effective boards approach technology governance

As technology's strategic importance to the business expands, management needs stronger board guidance. Four engagement models have proven useful.

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Across industries and regions, the evidence is clear: technology is increasingly a key part of every organization's business strategy. Yet boards often struggle with the best way to engage in technology, and there continues to be discontinuity between the board and management when it comes to major technology initiatives.

One management team, for example, came to its board with a proposal to purchase an expensive, cutting-edge new technology system, which they believed would help them outperform their competition. The board, however, lacked a clear mechanism to provide effective guidance on technology topics, and so it wasn't able to ask probing questions about the system's true value to the business, push for a practical governance model to manage such a complex implementation, or establish meaningful key performance indicators (KPIs) to track progress. After months of costly implementation work, the vendor failed to deliver significant value. Only later did the management team and the board realize a standard, low-cost solution would have been just as effective in meeting the goals of the project.

Stories like this are becoming more common as boards increasingly need to weigh in on crucial technology strategies. Digital transformations, IT transformations, and large initiatives such as cloud adoption have become fundamental business for the board and can determine a company's ability to drive inclusive and sustainable growth. It's not that boards don't recognize the importance of technology; our analysis shows a steady 33 percent increase since 2010 in board directors who have experience in technical leadership roles.[1] The issue, however, is that despite the increasing recognition of technology's importance to the business, boards still tend to deal with technology on the periphery or as a subtopic within the risk and audit committee. Across interviews with board members and executives on the topic of technology and boards, there was broad agreement that boards need to give structure and priority to their technology engagement, but it is not always clear how best to do so.[2]

Boards have clear roles in helping leadership navigate technological waters: posing the right fundamental questions,[3] challenging the organization to become more "tech forward," and providing oversight through KPIs and metrics. Precisely because technology now cuts across so many organizational and strategic areas of the business—strategy definition, capability building, partner selection, business integration—clear leadership from the board is crucial to help management coalesce a coherent and practicable strategy across these interdependencies.

The most common engagement model: The technology committee

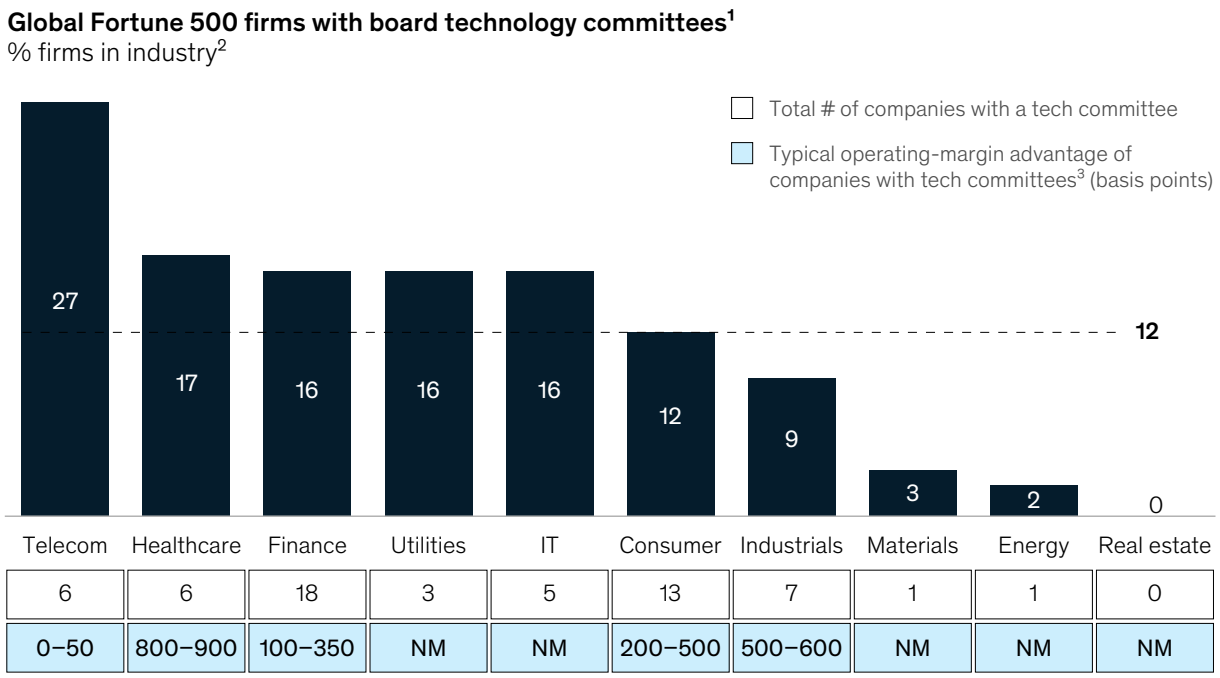
The most clearly defined form of board engagement with technology is a board committee dedicated to understanding and supporting the organization's technology strategy, investments, and risk profile and to sharing its insights with the full board. Among the Global Fortune 500, industries with a notable number of tech committees were finance, consumer, and industrials (Exhibit 1).[4] Our research shows that, in 2020 and 2021, companies in these industries that had a board tech committee had operating margins 100–600 basis points higher than their peers that did not have tech committees. Companies' most common hesitations for not having a tech committee were that they couldn't find the right members to serve on the committee, the board would become too operational, they might create too many committees, or a committee would crowd out technology discussions within the broader boardroom's discussion of business strategy.

As a result, only 12 percent of Global Fortune 500 companies have standing tech committees, up from 11 percent two years ago (as of March 2022).Industries with a stronger reliance on technology or digital transformation for their competitive strategy, such as telecom, healthcare, and finance, are most likely to

[1] Using data provided by BoardEx, we analyzed the profiles of all S&P 500 board directors from 2010–21, identifying those with technical leadership experience based on their previous titles. We identified directors whose current or historic employment role included one of the following keywords: analytics, cloud, cyber, data, digital, CIO, CISO, CTO, digital, engineering, infrastructure, IT, network, security, software, tech.
[2] Over the past year, we interviewed more than 12 board directors and executives serving public and private for-profit companies and leading nonprofit organizations.
[3] Celia Huber, Alex Sukharevsky, and Rodney Zemmel, "Five questions boards should be asking about digital transformation," *Harvard Business Review*, June 21, 2021.
[4] 2021 Global Fortune 500 financial statements and reporting.

Exhibit 1

Around 12 percent of the Global Fortune 500 have board tech committees.



[1]As of March 2022.
[2]Includes committees on technology, tech oversight, innovation, research and development, and cybersecurity.
[3]As of 2020–21. NM = not meaningful (no operating-margin advantage observed).
Source: Global Fortune 500 financial statements and reporting

have technology committees. While a formal tech committee is not necessarily the right model for every company (depending on industry, importance of technology, and board expertise), having some form of structured engagement could be beneficial for most.

Models for board engagement with technology

Research identifies four effective models through which boards engage with management on technology issues (Exhibit 2):

— regular, full-board engagement as a recurring agenda item

— formal, standing technology committees

— temporary and/or advisory tech committees

— informal engagement on select topics

Regular, full-board engagement

For companies in industries where technology is a core business driver or most business units are impacted by digital strategy, regular, full-board engagement has been the norm. Common examples include software businesses, consumer internet, and telecom. In this model, all directors need to fully understand technology's implications for the business and have the expertise to navigate wide-ranging issues connected to technology, including corporate strategy, operating models, and governance. Even with full-board engagement, however, an additional board tech committee can be helpful for structured examinations of specific issue areas—talent strategy, for example—or for assisting management teams in pinpointing issues and decisions that require discussion with the broader board.

A board director at a major global bank noted the value of regular, full-board engagement when her

Exhibit 2

Boards typically engage with management on technology using one or more engagement models.

Engagement model	Size of board	Level of board tech expertise	Level of board engagement required	Tech importance to business	Examples where model has been used
Regular, full-board engagement	Not correlated				• Software businesses • Consumer internet • Communications service providers
Standing technology committee	Medium to large				• Financial institutions relying on digital infrastructure • Traditional retailers with substantial and growing e-commerce channels • Pharmaceutical companies relying on digital systems to optimize R&D
Temporary committee or third-party expertise	Not correlated				• Cloud transitions • New digital business building • Major cyber event postmortems • Post-merger integration, with substantial IT implications or dependencies
Informal board updates	Medium to large				• Management facing difficulty leading board-level discussions on the technology agenda • Business units seeking to commercialize highly technical products • Important but unclear connection between technical-progress updates and board priorities

company was developing a cloud-based offering. The management team presented the board with three infrastructure options—public, private, or hybrid cloud—with the corresponding resource and risk implications of each and management's initial recommendation. Board directors scrutinized management's recommendation by applying their own expertise to weigh trade-offs such as business value and risk across the option set, surfacing to management the most important decision factors and helping to narrow down the options to the final choice.

Standing technology committees

As referenced earlier, where technology may not be related to the core business but nonetheless represents a leading, long-term source of competitive advantage, boards and management teams may seek additional guidance on technology's relationship to other strategic topics.

This model has been used successfully in financial institutions that rely on digital infrastructure, traditional retailers with substantial and growing e-commerce channels, and pharmaceutical companies that depend on digital systems to optimize R&D.

For these organizations, a standing technology committee helps directors see the interdependencies between corporate strategy and digital. For example, these committees could help the broader board prioritize technology decisions appropriately by surfacing and contextualizing key metrics that have risk, finance, or talent implications. Key risk areas, such as cybersecurity, might require persistent and periodic board oversight, with technology committees providing guidance and transparency for decision making. Additionally, a standing committee on technology with focused board expertise signals an organization's commitment to technology as a core source of differentiation.

The CIO of a leading insurance enterprise shared that the primary purpose of its board's technology committee was to help articulate how technology could serve the broader corporate strategy and generate competitive advantage. Monthly meetings with the CEO and CTO also provided the committee with a chance to shape the broader board's discussions around cyberrisk and other relevant topics ranging from digital resiliency to AI, machine learning, and the path to value from technology.

When setting up a formal, standing technology committee, it is crucial to define the right charter and regular meeting agenda (Exhibit 3). Charters should consider focus areas and the outcomes for the broader board (such as oversight for management reporting). Tech committees also need to define the extent to which they should evaluate technology decisions and status updates as part of the broader corporate strategy, and which form this evaluation should take. This role definition could include overseeing major technology transitions, monitoring commercially important industry or technical trends, or developing, implementing, and monitoring the corporate cyberrisk framework.

Temporary committees and third-party expertise

Some organizations have recently dedicated major strategic or financial resources to technology, typically in the form of a major technology transition or strategic digital investment. Examples include cloud transitions, new digital-business builds, postmortems for major cyber events, and mergers with substantial IT ramifications. These circumstances will nearly always have far-reaching implications for board-level issues related to the operating model, business strategy, and risk. In this case, and especially because these organizations are usually less mature technologically, temporary committees and third-party validation could offer a reliable source of oversight, expertise, and confirmation with the right level of transparency. They could comprise experienced practitioners who bring prior expertise and broader business context to the oversight of a major investment or project—for example, a former CTO or CISO during a transition to the cloud.

Temporary committees draw members from the broader board, while third-party expertise involves external advisors who bring supplemental strategic technical proficiency to specific areas. In both cases, it is important to ensure such resources have a clearly stated mandate, such as overseeing the decision to move to the cloud, and provide guidance on the anticipated impact of considered technologies on the business. As such, prior to forming such committees, there should be detailed discussion around the time and resources needed to support them.

An infrastructure company's management had been struggling for years to use technology to enable its business goals. At a transformative moment in the company's history, a board member helped management convene a temporary task force of industry experts to support management and the board in jointly envisioning a strategy for an entirely new type of technologically enabled smart city. The management team led the effort with board oversight, providing regular progress updates together to select directors over the course of several months. Management then used

Exhibit 3

Technology committees should define a charter and quarterly agenda based on their organization's specific strategic needs.

Sample charter for technology committees[1]

Purpose
The committee will examine and provide guidance to full board and management on company's technology investments, IT risk, and implications for strategic direction.

Membership
The committee will consist of no fewer than three board members, including one chair, appointed or removed at the discretion of the full board based on recommendation of the nominating committee.

Meetings
The committee will convene as often as necessary. Meetings will be scheduled and presided over by the chair, and the committee may meet with external advisors and management as necessary to carry out its duties. The committee will report to the full board after each meeting.

Responsibilities
- Provide oversight for management reports and recommendations to full board and management regarding company's technology policies, projects, and initiatives, including major investments and expenditures
- Provide oversight to management on critical operations related to information technology, infrastructure, data governance, and business continuity
- Review and provide guidance management on the company's cybersecurity framework and potential risks related to technology, data privacy, and regulations
- Monitor industry and technical trends related to the company's digital and technology priorities

Agenda[1]

1. **CIO update**
   - Discussion of company's current technology strategy and risks
   - Review of latest technology metrics
   - Review of latest technology budget and three-month planning
2. **External advisor presentation to committee**
   - Review of latest technical and industry trends
   - Review of cyberrisk framework assessment
3. **Discussion of report for full board meeting**

[1]Will vary by organization.

the new strategy to attract and sign a major contract with a marquee customer, which helped revitalize the business and give it a competitive edge.

Informal board engagement

This last engagement model helps a subset of the management team gain frequent and highly focused guidance, including coaching and mentorship, from an experienced board director on high-priority topics. Our interviews with directors showed that this model can take many forms, such as offline mentorship of technical executives, pointed engagement on technical but commercially transformative topics, such as computer vision and blockchain, or periodic input on how to position technical progress updates to the full board. Informal engagement is best suited for boards where one or two directors, rather than a critical mass, have extensive expertise in broader technology or specialized technical areas and management needs additional technical guidance and support. In this model, it's particularly important for board members to resist the natural inclination to become entangled in management's operational

decisions, while ensuring there is sufficient full-board visibility to underscore the strategic importance of technology discussions. Additionally, formal and full-board engagement, often led by the board's subset of experts, is often necessary to ensure that technology decisions inform and support the company's overall business strategy.

Informal engagement may also be helpful for organizations lacking or just developing a forward-thinking technology strategy. In these cases, select, experienced board directors can guide management in thinking through and communicating the concrete technology agenda. Once that agenda is better defined, the board may begin engaging on technology issues more formally. For one pension fund undergoing a cloud transition, board and management determined the incumbent operating model was unsuitable for maximizing the benefits from the investment in the cloud transition. The CEO and chair nominated a director to serve as an informal advisor to the CTO. The pair convened monthly to discuss their agenda for the broader board, with the board member testing the CTO's road map against his prior experience in such transitions. In another example, a consumer-facing company was digitizing its service operations to increase chatbot-based support. A director helped the head of HR navigate broader board communications on the complicated workforce decisions required for the transition.

The preceding models are not mutually exclusive. In some cases, depending on the topic or need, multiple, simultaneous engagement methods may be expedient. For example, the boards of certain companies may find it helpful to have a formal standing committee to help management assess new technology investments and broad technology strategy, alongside third-party experts, who are able to provide deep analysis of investment decisions, cyberrisk mitigation, and product strategies. Conversely, not all engagement models may be immediately viable choices for any given board. In many cases, boards may find they require new expertise or education before they can contribute meaningfully to certain strategically relevant technical discussions.

Given these considerations, boards should annually reassess their approach to calibrate the best level of engagement with their companies' executives.

Initial steps for boards and directors

With few standardized methods for assessing major technology decisions and investments, as well as the sheer complexity of managing technology transitions, boards have their work cut out for them. In all cases, boards should follow topic-agnostic best practices for any type of technology work, posing the right questions and determining meaningful metrics and governance to put in place to track progress. For technology specifically, continuous education, the right balance of technical expertise, and targeted engagement with external technology leaders are all prerequisites for board effectiveness. But without an effective technology engagement model, boards will still struggle to have the right level of impact.

An important place to start is to take stock of the flexibility boards have to adapt their technology engagement approach depending on their own level of expertise, corporate strategy, competitive positioning, and management needs. Answering the following questions can help boards and management determine the engagement model best suited to their company:

- How important is technology to my organization's and any competitors' corporate strategy?
- What kind of technical expertise do I have on my board, and how relevant is it to my company's business model?
- What is the pace of technological change or transformation in my company and among its peers?
- What are the three largest technology risks that could disrupt or endanger our operating model and business?
- How effectively is management addressing the key technology issues today?

Boards can create value by understanding connections between technology and their business, determining a clear vision and goals for their technology transformation, and anticipating and minimizing potential risks and threats. Every director should ask whether the board's current approach to technology sufficiently addresses these issues, and which engagement model might best serve their specific goals.

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