Corporations are digitizing rapidly, breaking down industry barriers and creating new opportunities while also disrupting long-successful business models. Sure, such sweeping tech-enabled changes often take longer than expected, but in time they usually have greater impact than anticipated (think airplanes, televisions, phones, production robots, and ride-share companies such as Uber Technologies).

Board members estimate that 32 percent of their companies’ revenues are threatened by digital disruption over the next five years, according to research conducted by the Massachusetts Institute of Technology’s Center for Information Systems Research (MIT CISR) in November 2014. Many directors reported feeling unprepared for this challenge, rating their fellow directors as only 64 percent effective in dealing with digital disruption.

MIT CISR’s research on effective practices for boards on digital disruption drew on insights from an online survey of 83 board members, nine lengthy phone interviews of directors, three in-depth case studies, and workshops conducted with more than 12 large company boards.

How Effective Are Boards Today?
Among the legal, moral, and fiduciary responsibilities boards have to stakeholders, surveyed directors identified “challenging the status quo” as the second most important board activity (after “evaluating the CEO”).

Digital disruption is seen by many board members as one of the biggest threats to their company’s status quo. However, much of the governance focus on digital disruption has been on cybersecurity, data privacy, compliance, and spending on information technology (IT). Only 39 percent of board members reported discussing the impact of digitization on their business model.

Perhaps more concerning, board members rated their digital savviness at only 62 percent (i.e., they gave themselves a D-). One consequence of lacking digital aptitude is that 26 percent of boards hired consultants to evaluate major digital projects, not feeling comfortable making those evaluations themselves. This situation raises the stakes for the quality of help that board members need from their company executives. And the quality of executives’ reports are mixed. When asked to assess the effectiveness of their officer-level executives in helping board members deal with digital disruption, chief information officers (CIOs) were ranked as the most effective (82 percent) followed by CEOs (78 percent) and heads of marketing (70 percent). Heads of human resources were deemed least helpful (62 percent).

What about help from people who are not company officers or from information drawn from outside the company? Board members universally reported relatively low effectiveness from activities such as external readings, visits to other companies, and reverse mentoring. Even the board’s own committees were only moderately effective in dealing with digital disruption, scoring 70 percent. According to the MIT CISR study, directors believe that technology is changing the business world so rapidly, their experiences — those that made them successful—perhaps aren’t as relevant today.

The Key Roles of the Board
Boards must be involved in three areas around digitization: defense, oversight, and strategy (see Figure 1).

Defense: Focusing on defense issues helps to prevent serious problems for the company, including cyber risk, data privacy breaches, service interruptions, and compliance issues. Most boards deal with these issues through their audit committee, though sometimes the responsibility is delegated to the risk committee. Boards are becoming increasingly mature in these defensive areas and have built up sophisticated reporting and monitoring systems. The numbers in Figure 1 are the result of four recent polls of senior IT leaders during MIT CISR workshops in Boston; Melbourne, Australia; and Warsaw, Poland. The participants evaluated the capabilities of their boards on each of the three roles on a scale of 1 to 9. Boards scored 6.4 for defensive activities—the highest of the three roles.

Oversight: The second role is oversight of the company’s major digitally enabled transformation projects. These include implementing large, mission-critical systems such as enterprise resource planning (ERP), patient records, or core banking. These systems are transformational investments that demand significant change-management efforts, monitoring, and oversight. For many companies, particularly those that rely on digital technologies such as banks, retailers, and media companies, oversight also includes reviewing spending levels on digitization across the company and comparing goals and bottom-line impacts achieved. With the increasing impacts of digitization we see all companies doing more oversight of digital investments across multiple business units. Boards scored 5.5 on oversight activities.

Strategy: The third role involves contributing to and evaluating conversations related to strategy and digital disruption. Boards overall scored 4.8 on digital strategy activities.
For example, a number of banks reported that boardroom conversations about digital strategy have focused not on other banks, as in the past, but on market entrants such as PayPal, Apple Pay, and retailers that are nibbling away at their revenues. These new entrants threaten to relegate some banks to highly regulated, low-margin, transactional processors of payments.

With the increasing importance of disruptive technologies and the potential of the Internet of Things, most company strategies will be significantly affected. For example, the head of strategy for Emerson, a $25 billion diversified manufacturer, said: “In the 21st century, we will differentiate our company and provide value to our customers and returns to our shareholders through trading on information.” Emerson’s board, which includes the CEOs of AT&T, Thomas Cook Group, and Harley-Davidson, takes an active role in conversations about digital strategy issues.

**Transformation at Work**

Tenet Health Corp., with 2014 revenue of $16.6 billion, manages 77 acute-care hospitals and 183 outpatient centers in 14 states. Tenet also provides nearly 300 hospitals and other organizations with population health management services to identify individual health risks and deliver care. Tenet is a strong performer, with its national average in both its five-year revenue growth and earnings before interest, taxes, and depreciation (EBITD) above the industry average in 2014.

As of Jan. 1, 2015, Tenet's board had 10 members, including the CEO and non-executive chair, and six committees, including audit, compensation, and compliance and ethics. The Tenet directors display a diverse set of skills and include one former U.S. senator, one physician, and four former CEOs (of Deloitte, EDS, Allina Health, and Diners Club North America). The board is committed to making Tenet successful with digitization and jointly holds the CEO, COO, CFO, and CIO accountable for outcomes. The digital savviness of board members is relatively high, demonstrated by their recognition that it’s the combination of technology, business process, people, culture, and relationships that creates value.

Defense issues around digital disruption such as cyber risk, data privacy, and service interruptions are covered at each meeting of the audit committee. Tenet CIO Paul Browne and members of his team report regularly to the audit committee.

In 2010, the board created an ad hoc health IT committee for the oversight of its $620 million investment in electronic medical records. Implementation of electronic medical records has been problematic in a number of other companies, and the board felt that careful oversight was important. The ad hoc committee met quarterly and received reports on project status including early wins and problems. In each meeting, there was a presentation, open discussion, and finally a closed meeting for board members.

On the successful completion of the electronic medical records project in December 2013, Browne presented to the full board a vision for digitization that included priorities and financial and operational plans. This provocative presentation led to significant discussion, and the board suggested a transition to a permanent health IT committee. In 2014, the health IT committee, which meets four times a year, was formed. The pattern of how time was spent in this committee is shown in Figure 1:

- 2010–2013: 80 percent of time spent on project management oversight
- 2013–2014: 50 percent of time on project oversight, 50 percent on strategy
- 2014 onward: shifting to more strategy

Reflecting on what worked most effectively in helping Tenet board members on digital issues, Browne identified four activities:
Reverse mentoring: mid-career IT leaders at Tenet engage informally with board members.

Multiple presenters: Direct reports to the CIO and the CIO present at board meetings.

Meetings between board meetings: the CIO and chair of the IT committee meet plus they talk shortly before each board meeting to review the agenda.

Case studies: Four times a year at board meetings, the CIO leads a deep discussion with a case study. One example showed how Tenet uses predictive analytics to reduce employee turnover.

Why Are Boards Critical of Digital Disruption?
Beyond the board’s normal fiduciary and oversight responsibilities, it plays a key role dealing with the challenges many companies face with digital disruption. While boards are warming to the task, their self-reported scores show there is work to do.

One of the biggest decisions companies face is how they should reorganize to be effective in a digital era. For example, it is clear that banks can no longer manage products, channels, and divisions (e.g., wealth, credit cards, lending, etc.) as silos when customers want seamless multiproduct, multichannel experiences. It’s difficult, however, for some executive committees (e.g., the CEO and his or her direct reports) to make the organizational changes necessary to thrive in a digital era. One of the barriers is that there will be winners and losers on that committee, and some executives have a vested interest in the outcome (i.e., retaining people who report to them), which may be different from what’s best for the company. CEOs will need to lead this organizational transformation, and that very well may require increasing support and the occasional nudge from a well-informed and interested board.

To help their companies and CEOs navigate the digital economy, board members require new skills. The lifetime of business experience many directors have will continue to be valuable, but that will be only part of what is needed for them to be effective in their oversight roles. Understanding what business models will be important to their company’s digital future—and helping to make the hard decisions around implementation—will be critical.

Most of the board members surveyed expressed excitement about the years ahead. Many felt the need to improve their digital aptitude or savviness so that coupled with their rich business experience they are prepared for the digital economy.

At the MIT’s Center for Information Systems Research, Peter Weill is chair and a senior research scientist, and Stephanie L. Woerner is a research scientist.