

June 2017

# CIO Insider

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## **Bridging the boardroom's technology gap**

Tech-focused directors can help boards stay ahead of the technology curve

By Khalid Kark, Jason Lewris, and Caroline Brown

### Introduction

In their quest to enhance long-term business growth, corporate boards of directors juggle a number of responsibilities, including technology oversight. Yet even as technology cements its status as a vital linchpin of business strategy and operations, many boards do not have the appropriate technology knowledge to oversee critical technology-driven initiatives, opportunities, and threats. In 2016, more than 85 percent of new board seats were filled by CEOs, COOs, or presidents (38 percent); those with financial backgrounds (25 percent); or business, division, or other functional leaders (23 percent).<sup>1</sup>

Based on a comprehensive analysis of data on public companies and a series of phone interviews, this report contends that technology expertise has become a key criterion for corporate board appointment, one that likely cannot be ignored. (See appendix for research methodology.) It outlines steps that directors and CIOs can take individually and collectively to bridge the boardroom's technology gap.

## The case for technology-focused directors

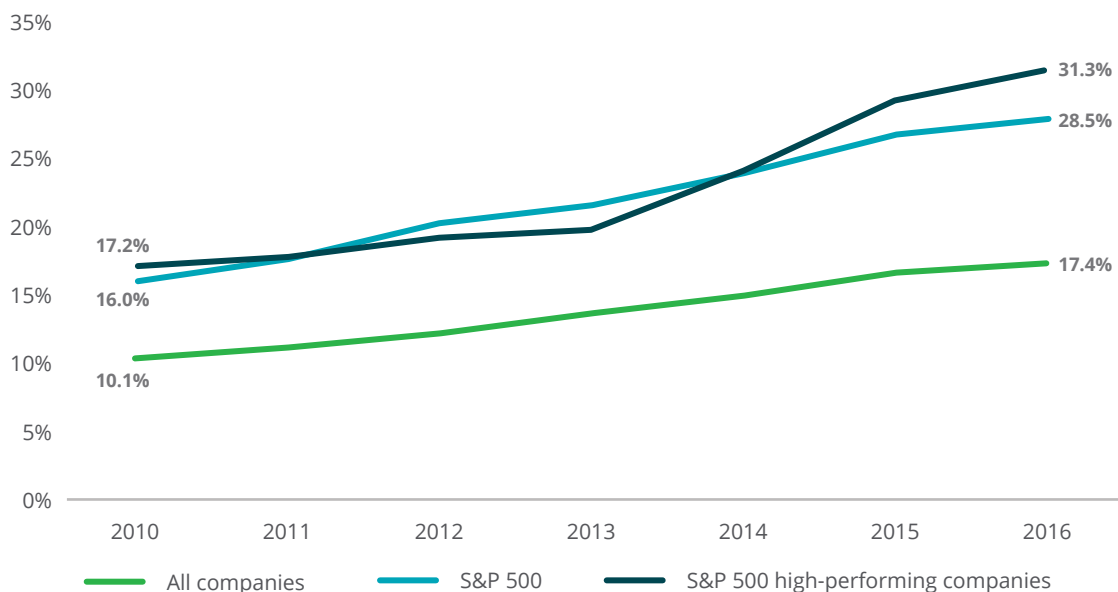
Our analysis finds that the number of technology-focused directors—those with meaningful technology experience—on public company boards is low, and that many executive boards are only beginning to add technology expertise. The percentage of public companies that have appointed technology-focused board members has grown over the last six years from 10 percent to 17 percent. However, this figure almost doubles (32 percent) for high performers—companies that outperformed the Standard & Poor's 500 Index (S&P 500) by 10 percent or more for the past three years. Although having a technology-focused director may not be the sole reason for performance success, many high-performing companies appear

to recognize the potential advantage of having technology expertise in the boardroom (figure 1).

The data indicate that many boards provide IT oversight and guidance without sufficient technology knowledge. Adding a technologist to the board roster can bring both new skill sets and fresh thinking to the boardroom. Business-savvy technologists can help directors better oversee technology issues such as risks beyond cybersecurity, opportunities and disruptions, complex digital transformations, and technology spending.

**Risks beyond cybersecurity.** Even as technology delivers value, it can create vulnerabilities. Security threats remain a top focus of corporate boards, but technology-related risks can extend far beyond cybersecurity to data protection and privacy, business resilience, and intellectual property protection. The rapidly changing business environment and competitive landscape leave little room for error or delay—a missed IT deadline or failed project implementation can negatively impact the business. Technologists can help boards understand and anticipate such business disruptions and guide risk mitigation discussions beyond cybersecurity.

**Figure 1. Percentage of boards with technology directors, 2010–2016**



Source: BoardEx database, October 2016.

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**Opportunities and disruptions.** Technology can rapidly obsolete businesses—or entire industries—even as it creates opportunities. Virtually every industry is on the verge of technology disruption. For example, free online courses, telemedicine, and robo-advisors can pose the risk of disruption to their respective industries, but can also offer opportunities for growth. A technologist can be well-positioned to explain the promise, hype, and threat of such technologies to the board to help it make better business and strategy decisions.

**Complex digital transformations.** Digital is more than a set of technologies—it is a new way of operating. Digital transformations can require a ruthless focus on organizational agility, data analytics, rapid prototyping, and customer needs across all aspects of the business. Savvy technology leaders can contribute by helping boards oversee complex digital transformations and corresponding technology and process integrations.

**Technology spending.** IT spending is a major part of corporate budgets and continues to increase. Thirty-seven percent of participants in the Deloitte global CIO survey say that their technology budgets increased by up to 20 percent since the last fiscal year, while 12 percent say their budgets increased by more than 20 percent.<sup>2</sup> Boards are tasked with spending oversight and governance, but without a technologist's insight, they may view technology spending as opaque. Just over a third (34 percent) of corporate directors surveyed say their board is not sufficiently or at all engaged in overseeing/understanding the company's annual IT budget.<sup>3</sup>

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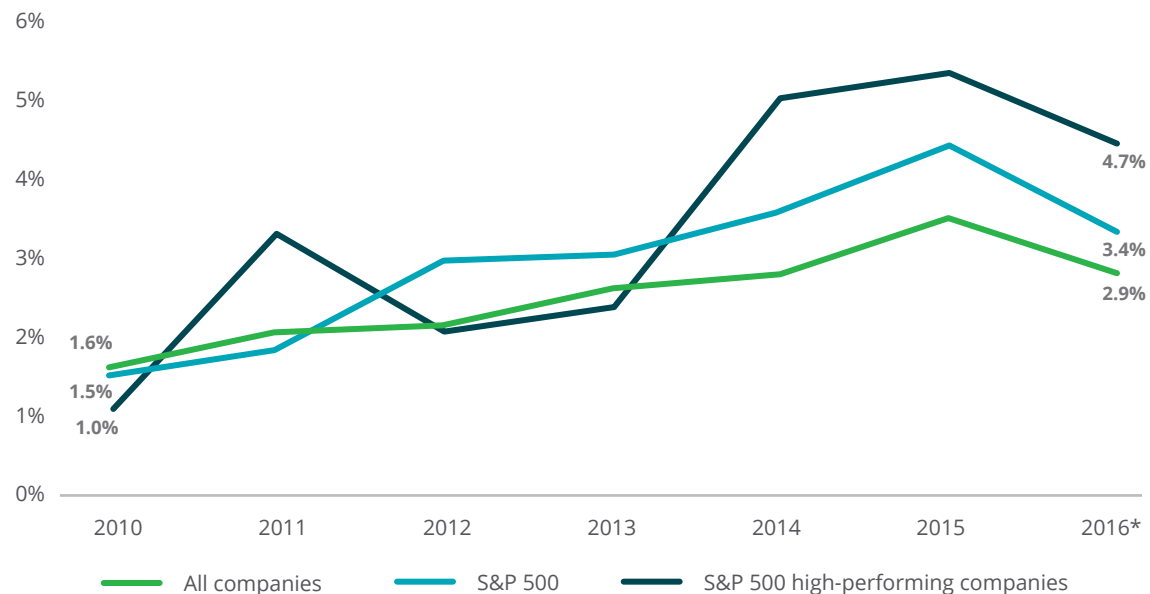


## Crossing the technology expertise chasm

Relevant IT know-how can dramatically change board discussions and perspectives. Some boards employ external experts or consultants to meet this need, but outsourcing this function is an approach that can frequently lack accountability, eschew specific business context, disregard the organization's technology capabilities, or rely on generic recommendations. Boards can address this deficiency through a three-pronged approach: appointing a business-savvy technologist to the board, taking a more offensive technology position, and considering a technology committee.

**Appoint a business-savvy technologist.** Although current or former CIOs, CTOs, CISOs, and other C-level technology leaders could provide valuable input and perspective to boards, Deloitte's analysis indicates that only 3 percent of all public companies appointed a technologist to newly opened board seats in 2016 (figure 2).

Although experience managing technology operations is critical, business acumen and a strategic mind-set can be more important. "There are primarily two types of CIOs, those that keep the lights on and those that focus on transformation," says Manny Fernandez, who has served in several executive and board leadership roles. "The latter have moved to impact revenue and these are the ones that capture the attention of the board."<sup>4</sup>

**Figure 2. Percentage of new board positions filled by technologists**

\* Due to potential lags in filing, 2016 numbers may be incomplete.

Source: BoardEx database, October 2016.

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Many of today's CIOs fit the bill: Fifty-six percent of them have had leadership experience outside of IT.<sup>5</sup> "If a board is looking for a qualified technology person, they're going to find a large percentage that are strong on technology but also good business people," says Wayne Shurts, EVP and CTO of Sysco and a former member of the board of Con-way Inc. "Most CIOs didn't get to the C-suite just by being a geek."<sup>6</sup>

"I look for people that have horizontal experience versus only vertical experience," says one board leader. "An effective board member ultimately has to be able to go broad as a business person and a technologist."<sup>7</sup>

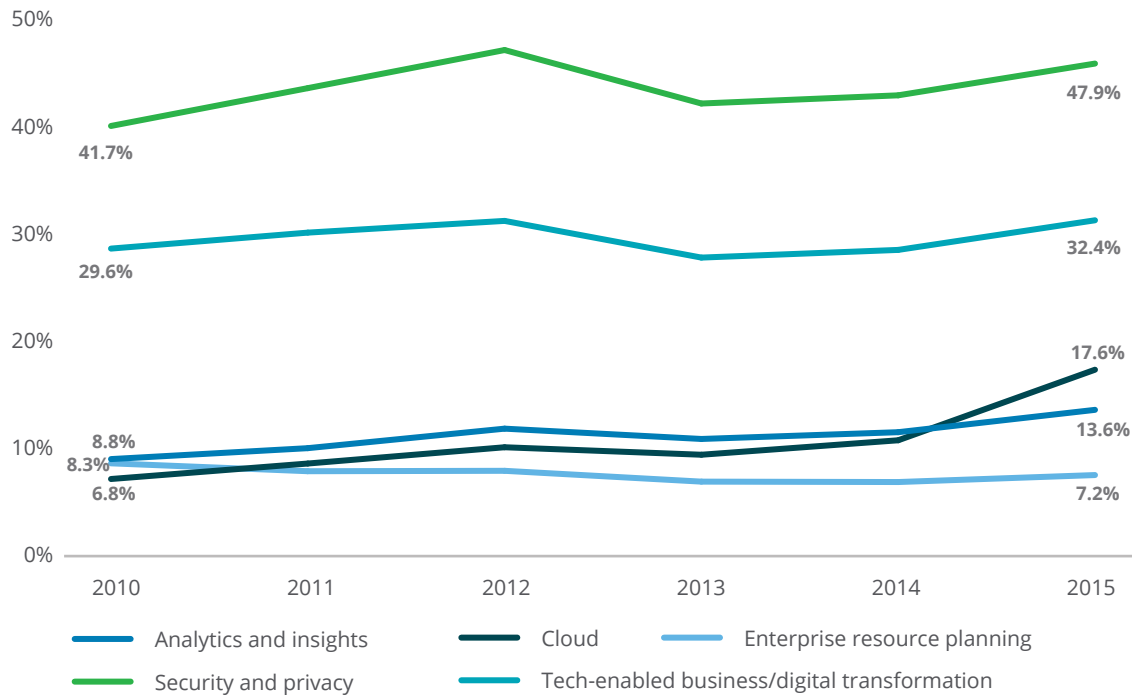
**Take an offensive technology position.** When it comes to technology, boards with a proactive approach may have an advantage over those that maintain a purely defensive position. Boards can go on the offensive by involving the company CIO in board meetings on a proactive and ongoing basis. "CIOs can help companies play offense, and the burden is on the board to be more interested in that," says Shurts. "But the burden is on the CIO to make the case that IT is more than cyber and risk management, and it's more than a cost center."<sup>8</sup>

CIOs often interact with the board less frequently than other members of the C-suite whose roles are more historically enmeshed with board requirements. As CIOs' business responsibilities evolve, boards are slowly increasing the level of communication and engagement with CIOs: In 2016, 25 percent of directors reported that they met with the CIO at every formal meeting, up from 18 percent in 2012.<sup>9</sup>

Deloitte CIO Larry Quinlan acknowledged that CIOs alone cannot shoulder the burden of an offensive approach to technology. "Although technology is the key enabler, it isn't the business," he told us. "A business unit leader has to step up and help the CIO drive the conversation about how technology enables their function."<sup>10</sup>

To learn more about how boards can take a more offensive approach to technology, we sought first to understand the evolution of boardroom technology discussions. Our textual analysis of 10-K filings found, unsurprisingly, that security-related issues such as cybersecurity, privacy, and risk have remained the primary technology topics discussed by boards between 2010 and 2015 (figure 3).

**Figure 3. Top five technology topics mentioned in 10-K filings, 2010–2015**



A more proactive approach to technology does not necessarily reduce a board’s concern about security and privacy, but it can provide additional space for technology conversations about technology-driven business opportunities and digitizing the enterprise.

**Consider a technology committee.** With responsibility for so many other oversight activities, some companies delegate technology oversight to the audit or risk committee—largely because of the importance of cybersecurity and cyber risk.<sup>11</sup> Others have formed separate technology committees, although our analysis shows this is a rarity. Only 9 percent of S&P 500 companies had a technology committee in 2016, but this number has been increasing over time.

We reviewed the charters of more than 100 technology committees to understand their scope and responsibilities. Their mandates vary depending on company needs and industry requirements, but many boards use these committees to oversee their proactive technology moves. The charters include responsibilities such as strategy integration; review of technology disruptions in industry, market, and

competition; and review of strategic technology investments and major technology. Some committees also include innovation and cybersecurity in their charters. In the long term, assigning these tasks to a technology committee could help relieve some of the time pressure faced by boards (and other committees) while still allowing them to oversee the joint business-technology agenda.

The technology committee typically includes representation from the board, executive management (that is, the CEO or CFO), and a director with a technology background. It can serve as the primary link between the board and the growing number of C-suite executives responsible for various aspects of technology (for example, the CIO, CTO, CISO, chief digital officer, and chief data officer). Establishing a board committee has some overhead associated with it and could have other potential downsides. For example, some committees might make critical decisions that should be left to the full board, or conversely, they might micromanage activities. However, especially over the long term, the benefits of a technology committee likely outweigh the potential downsides.

## Technology oversight: A starting point for boards

With or without a technology committee, a board can begin its foray into technology oversight by seeking CIO input on five questions. The answers likely will help boards understand and evaluate their companies' current state of IT and provide a starting point for what will hopefully be an ongoing conversation with the CIO.

1. **Does technology drive competitive advantage?** By understanding the current role of technology in delivering competitive advantage, boards can help CIOs and technology leaders focus on appropriately adding value. Directors can oversee and monitor technology investments and initiatives to help CIOs enable business strategy, leverage IT to make processes more efficient, improve customer engagement, and develop technology-enhanced new products and services. Depending on a company's business strategy, metrics might include revenues generated, customer satisfaction scores, process efficiencies, cost savings, time savings, etc.
2. **Do major IT initiatives deliver promised value?** Major IT projects/business transformation efforts can be expensive and complex—and many of them fail. Boards can help CIOs ensure that IT projects are aligned with business needs and technology budgets, have business executive buy-in, and define and measure project outcomes—and they can help hold both business and technology leadership accountable for results.
3. **Does technology foster or deter business resilience?** Because of the high risk associated with cybercrimes, many corporate boards are appropriately focused on cybersecurity. However, security is only a single aspect of business resilience. Boards also need to oversee their businesses' ability to quickly adapt to disruptions while maintaining continuous business operations and safeguarding people and assets. For example, if an organization experiences a security breach, how are its operations affected and how quickly can it react and respond?

4. **Does technology enhance or obstruct employees' ability to get work done?** As new automation tools creep into the workplace, it can become even more critical for IT delivery, processes, applications, systems, and infrastructure to support and enable the workforce. Yet only 13 percent of CIOs globally say that addressing workforce productivity and engagement through technology is a personal strength.<sup>12</sup> To assess IT's ability to enhance the workforce, boards can examine metrics such as employee satisfaction scores, process cycle times for key technology-supported workflows, and percentage of technology projects delivered on time and on budget.
5. **Does IT have the right talent and culture?** Forty-five percent of CIOs say that talent and culture are organizational capabilities essential to success,<sup>13</sup> but only 16 percent say that they are also top business priorities.<sup>14</sup> Hiring, retaining, and engaging technology talent is the CIO's responsibility, but the lack of a concerted talent strategy can be a huge business risk. Boards can oversee the development of a robust talent strategy that takes into account changing talent dynamics. They can also include the CIO position in the succession planning process.

## A tech-savvy board can be a competitive advantage

Technology still helps businesses “keep the lights on,” but it can also be a powerful force for driving business growth and performance. As a result, many corporate boards are beginning to rethink the function of technology in their organizations and consider how they can create a more tech-savvy boardroom.

Likewise, many CIOs and other C-level technologists are realizing that developing broader business skills positions them to help deliver technology's transformation potential to businesses at both the strategic and operational level. The alignment of boards and technologists can help businesses drive growth, increase competitive advantage, and effectively manage risks. “Many boards today still look like they

## WINNING OVER THE BOARD: A BLUEPRINT FOR CIOS

Part of the responsibility to bridge the boardroom's technology gap lies with the CIO. As their engagement with the board increases, CIOs likely will need to become more strategic. "CIOs have to be able to communicate and approach problems in business terms, not just technology terms," says one CIO.<sup>15</sup>

Another CIO told us, "The role of the CIO isn't to go to the board to talk about every project that we're doing. It's to talk about how we want technology to operate across the organization and how we're making investments to support that."<sup>16</sup>

Here are some steps CIOs can take to better engage with their boards.

1. **Get broad business experience.** A variety of business experience can bring credibility and confidence to a CIO's board interactions. Assess business and financial management knowledge and develop a plan to address any missing skill sets. For example, one CIO took classes in accounting, paired assets, and financial management to prepare for a new board role.<sup>17</sup> Other CIOs have opted for international assignments, roles in M&A, and non-technology leadership positions.
2. **Understand board politics.** One CIO told us that she underestimated the role of politics at the board level. "I had to socialize my ideas across the board in a different way than I was used to," she says. "Even if my leadership liked an idea, I might be surprised in board meetings. I had to influence each member of the board in a different way."<sup>18</sup> Other C-suite executives can shed light on board politics and lay the groundwork for CIOs to get advance board-member buy-in.
3. **Focus on shareholder value.** Most boards are primarily concerned with what technology can achieve for the business, not the details of how technology works. "When a CIO is in front of the board, it's important for them to be focused on the three operational things boards care about the most: growth/earnings, market position/differentiation, and risk detection/mitigation," says Fernandez.<sup>19</sup>
4. **Build a knowledge ecosystem.** CIOs can benefit not only from networking, but also from creating a knowledge ecosystem that includes technology experts, peer CIOs from diverse industries and start-ups, and industry analysts. Leveraging the knowledge ecosystem, CIOs can increase their credibility with boards by proactively updating directors on the changing landscape and technology disruptions.
5. **Develop a "business leader" brand.** CIOs may have created a reputation as a solid technology manager, but they also can actively monitor and curate their brand as a business executive. A key priority is to evolve from functional manager to business leader. Other opportunities may include leading outside of the traditional IT role, gaining broader business exposure, or volunteering to drive a philanthropy, diversity, or other cross-functional corporate initiative. Such experiences can provide a much broader perspective and help establish relationships across multiple levels of the organization.

did 20 years ago," says a board leader. "It used to be good to have a bunch of CFOs in the room, but we are at a crossroads in corporate board structure. We

need to get to the point where the majority of the board is tech-savvy."<sup>20</sup>

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# APPENDIX

## Research methodology

The foundation of the report is an analysis of data on board directors, their roles and responsibilities, director demographics, and other relevant information in the extensive BoardEx database, which contains over 880,000 unique directors and 1.3 million companies spanning more than 200 countries.<sup>21</sup> Our analysis is based on BoardEx data pulled in October 2016.

### COMPANIES

We refined the data by eliminating the smallest companies and those that had not been in existence long enough to establish a clear track record of board activity, examining only those companies that reported market capitalization numbers. The end result was a list of 4,139 US public companies and approximately 221,000 directors.

We were interested in examining differences among all public companies, companies listed in the S&P 500, and companies that outperformed the index. High-performing companies were identified by a single measure: companies listed in the S&P 500 index whose stock price outperformed the index by 10 percent or more for the past three years. Among 494 S&P 500 companies, 131 met that criterion.

### TECHNOLOGY EXPERIENCE

To determine whether a director had technology experience, we examined the lifetime experience and participation of every director, not just their current position. Had these individuals, in both their current and prior roles, demonstrated technical acumen? We used this lifetime view to explore key attributes of senior technology leaders and their participation on boards as directors. We specifically defined a senior technology leader as one who currently holds or has previously held a number of core positions, including:

- Chief information officer
- Chief technology officer
- Senior vice president, technology
- Director, technology
- Vice president, IT
- Chief science and technology officer
- Principal, technology

To trace directors who have held senior technology positions throughout their career, we constructed a flag that would follow each director from position to position. Our final dataset contained 12.9 million records, 405,040 of which were related to senior technology leaders. We analyzed over 18,427 senior technology leaders, of which 7,678 were associated with companies of interest. We defined board participants as those whose board position flag was set to “yes” within the database.



## TECHNOLOGY TERMS

To understand how discussions about core technology concepts have evolved over time, we performed a textual analysis of annual financial filings with the SEC—10-K statements. To better understand this evolution, we analyzed more than 61,000 filings, spanning 20 years, from 7,925 companies—those with at least \$1 million in reported annual revenue. These filings were secured directly from the SEC Edgar database. When we performed the textual analysis of SEC 10-K filings, a large portion of public companies had not yet made their 2016 SEC filings. Therefore the textual analysis does not include 2016.

We defined core technology concepts into 10 umbrella categories and grouped key technology search terms in each category.

- Emerging technologies (e.g., bitcoin, cognitive computing, artificial intelligence, augmented reality, Internet of Things)
- Core/legacy systems (e.g., legacy IT, legacy systems, core systems, application modernization)
- Security and privacy (e.g., security, privacy, privacy policy, risk management, cyber, cybersecurity, customer privacy, data breach, CISO)
- Analytics and insights (e.g., data analytics, data insights, artificial intelligence, big data, business intelligence)
- Cloud (e.g., cloud, software as a service, platform as a service, infrastructure as a service, names of key technology firms and their products)
- Enterprise resource planning (e.g., enterprise resource planning, ERP, names of key technology firms and their products)
- Customers (e.g., customer, customer relationship management)
- Ecosystem (e.g., ecosystem technology partner, technology ecosystem, technology vendor)
- Technology-enabled business/digital transformation (e.g., digital innovation, digital transformation, technology disruption, technology innovation, technology road map, technology transformation)
- Technology strategy (e.g., technology strategy, IT strategy)

## INTERVIEWS

Finally, to gain additional insight, we supplemented the data analysis by conducting phone interviews with several board directors and CIOs.



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## ENDNOTES

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## ACKNOWLEDGEMENTS

Deloitte *CIO Insider* is developed by the Deloitte CIO Program's Research and Insights team. This issue would not have been possible without the heavy lifting provided by **Keara O'Brien**, data analyst; and **Kate Strachnyi**, project manager. **Lakshmi Modugu**, data analyst, also provided invaluable support.

The authors would like to acknowledge **Daniel Byler** of Deloitte's Research Data Science team for his leadership with BoardEx, considerable brainstorming skills, and assistance in quality analysis. **Bob Lamm**, **Debbie McCormack**, and **Julie Wieseman** of the Deloitte Center for Board Effectiveness provided thoughtful insights and feedback.

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