



COMPANIES WITH A DIGITALLY SAVVY BOARD PERFORM BETTER

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All boards are having conversations about how digital technologies could threaten their company's status quo and create new opportunities. How effective are those board discussions in your company? To be effective, boards have to be digitally savvy. We define **digital savvy** as *an understanding, tested by experience, of how digital technologies such as social, mobile, analytics, cloud, and the Internet of Things will impact how companies will succeed in the next decade*. We characterize a **digitally savvy board** as having at least three directors who are digitally savvy.

Companies in our research with a digitally savvy board had 38 percent higher revenue growth, 34 percent higher ROA, and 34 percent higher market cap growth.

In research over the last five years, we found that only 24 percent of the boards of companies listed in the US and having over \$1 billion in revenues were digitally savvy, and that these companies outperformed the others in our research on key metrics.¹

IDENTIFYING THE DIGITALLY SAVVY BOARD

We used a combination of interviews, a survey of board members, and analyses of Chair and CEO letters in annual reports to identify keywords indicative of a digitally savvy director. We assessed the digital savvy of more than 40,000 director's bios—using a machine learning technique and 275 keywords that we had identified as indicators of digital savviness (see figure 1)—and measured the financial performance of their companies. We analyzed all 3,228 US operating companies listed on both the NYSE and the Nasdaq that have six or more directors, choosing that size of board

1 MIT CISR has published a long-form version of this research briefing as a working paper to provide the complete findings and methodology for this research. See P. Weill, T. Apel, S. L. Woerner, and J. S. Banner, "[Assessing the Impact of a Digitally Savvy Board on Company Performance](#)," MIT Sloan CISR Working Paper No. 433, January 2019.

to avoid tightly held companies. We limited our review to public companies trading in the US due to the accessibility of their annual statements produced in English, from which we extracted director bios for our keyword coding scheme.

We narrowed our scope to the 1,233 companies having more than \$1 billion in revenues to focus on larger companies. Based upon our characterization of a digitally savvy board, we categorized company boards as Savvy and Not Savvy. The percentage of digitally savvy boards within industries varied significantly: for example, on average 57 percent of company boards in the information industries were digitally savvy, but we found digitally savvy boards in only 24 percent of retail companies and in less than 10 percent of transportation, construction, and mining companies.

We had a complete set of performance data on 1,122 of these companies, and using this set compared the performance of companies with and without digitally savvy boards. The results of this analysis were striking (see figure 2): Companies with digitally savvy boards had 38 percent higher revenue growth, 34 percent higher ROA, and 34 percent higher market cap growth than the other firms in our research.

It Takes Three to Tango

We then evaluated the effect on a company's financial performance of the number of digitally savvy directors and, again, the results were striking. We saw no significant differences in financial performance associated with having one or two digitally savvy. But companies with three or more digitally savvy directors exhibited the statistically significantly better financial performance described above (see figure 2). Beyond three digitally savvy directors, the incremental differences in performance were small.

The data strongly suggest that it takes three digitally savvy directors to have an impact on performance. As one director commented, "A single tech savvy director in the boardroom risks feeling lonely and misunderstood. To effect change at the board level, there must be a critical mass of directors who truly understand."

LEVERAGING DIGITAL SAVVY

We developed our understanding of the digitally savvy board over many conversations with board directors and senior executives. The digitally savvy board has an enterprise-level familiarity with digital processes and with current technologies such as digital platforms, AI, and big data that enables new business models, more efficient operations, and improved customer experience. This board understands when to commit, to experiment, and to partner, and can recognize the early indications of both successes and challenges with new initiatives operating at enterprise scale. The board's members leverage such skills and insights to inform their decision making. As one of the directors we interviewed put it: "Digitally savvy directors change the risk conversation from evaluating the project risk of particular initiatives to the business model risk of not doing something new."

Without digitally savvy directors, a board can't play its key role in helping guide the company to a successful future in this

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digital era. And it can't succeed at oversight. One director described how things can go wrong: "Management can lose their sense of accountability to a board on these matters. They think they can put anything up to the board and the board will say, 'Oh, yes, okay.' Digitally savvy boards push back and ask hard questions and hold management accountable."

MAKING BOARDS MORE DIGITALLY SAVVY

Following our statistical analysis, we conducted interviews with chairs, lead directors, and other directors of large companies and asked what actions can help to increase the digital savvy of board members. We organized these activities into three categories:

Encourage Self-Directed Learning

There is no substitute for curious and committed directors who understand what areas they need to develop. Age was not an issue—some of the most digitally savvy directors were some of the older directors we talked to or heard about. Even though they typically didn't have previous digital experience, these directors had invested heavily in becoming digitally savvy. Some of the most effective activities included taking online and in-person courses, reading research reports

and case studies, attending technology conferences and finding reverse mentors—digital natives—to learn from. Others jumped to learn on the job. As one director reflected, "When the opportunity came up to join either the IT committee or the remuneration committee, I jumped at the IT committee, thinking, 'I think I can have more influence on the future of this company on that committee.'"

Commit to Board-Wide Education

We found that three important kinds of educational activities increase the digital savviness of all the members of the board:

1. **Scanning and learning:** Board members regularly pointed to a board tour as the most impactful type of learning opportunity. A director who described these tours as "digital tourism" said that nothing could substitute for confidential, in-person discussions with leaders of born-digital companies such as Amazon, Tencent, Facebook, and LinkedIn to understand how these leaders behave and think differently. Also valuable were visits to non-competing companies in similar industries that have made significant progress in digital transformation. There was consensus that one of the best travel models was a subset of both directors and senior management touring four or five companies in a week in a place like Silicon Valley, Israel, Berlin, London, Mumbai, or Boston. Another director summarized

Figure 1: Keywords Describing Digitally Savvy Directors



In 2017, MIT CISR used interviews, a survey, document analysis, and machine learning on the bios of board directors to identify these keywords that are indicative of digital savviness. A subset of the most prevalent keywords identified in the analysis has been used in this illustration.

that “if we don't step outside and see what ‘better’ can look like, we can actually think we're doing pretty well.”

2. **Working the problem:** Several directors mentioned the annual (or more frequent) strategy retreat as critical to improving the digitally savvy of directors. Here are some proven criteria for success.
 - The starting point is having dedicated and significant time—often one or two days—to focus on digital threats and opportunities.
 - The agenda should include activities where directors focus on how digital will impact the company.
 - Effective is a series of activities, such as provocative external speakers who engage the directors in conversation; presentations from leaders of other companies who have made significant progress, and from company executives on current activities and their views of the future; and hands-on exercises during which directors can work on case studies.
3. **Ongoing review:** Several chairs referenced the annual survey of directors as a great source of information about changes the board needs, such as adjustments in expertise or a requirement for director education. For example, one strong practice was to conduct an annual survey of directors, with in-depth director interviews conducted by an independent consultant every three years to produce recommendations for change.

Add New Directors

Several board chairs and directors spoke about needing a portfolio of skills on the contemporary board to help the company succeed in the next decade or more. For some, this was a shift from the previous mindset of requiring of each director a minimum set of attributes (e.g., financial skills, large enterprise experience, business connections, experience with compliance, expertise in the company's industry). One board member described this concept as “developing T-shaped thinking,

where everyone on the board has to be knowledgeable across all issues, but you need some people who are deep in each key issue.” For most boards, to have three digitally savvy directors will likely mean adding at least one new director while helping to increase the digital savviness of several, if not all, of the other directors. Several directors recounted observing invitations to join a public company board being extended to first-time members (often much younger than the average age of other board members) because the invitees were digitally savvy.

DEVELOPING A DIGITALLY SAVVY BOARD STRATEGY

Our conclusion is that chairs and lead directors, working with their CEOs and CIOs, need to develop strategies to create more digitally savvy boards. Here are four questions all board chairs, CEOs, CIOs, and directors should discuss:

1. Do we have a good-enough understanding of the threats and opportunities from digital technologies in our company over the next five to ten years?
2. Do we have at least three digitally savvy directors, and a working understanding of digital issues among all the directors?
3. Do we have a plan to increase the digital savviness of our board over the next few years? If so, how is it going?
4. Do we strike the right balance in weighing the risks of a project under consideration versus the risk of not doing something new?

Here is a final thought, from the two authors of this paper who are lead directors of US-listed company boards: Experience is a great teacher. Using the company's technologies personally—taking the customer's journey with the company's products and services—is a terrific way to understand the customer experience. And staying abreast of digital startups, investing time with incubators and accelerator programs, and finding time for formal education in technology topics (e.g. agile) are all helpful to becoming more digitally savvy.

Figure 2: Digital Savviness of Company Board in Relation to Firm Performance

	Savvy Board	Not Savvy Board	Percentage Change
% ROA	5.1%	3.8%	34%
% Profit Margin	7.7%	6.6%	17%
% Revenue Growth (over 3 years)	17.6%	12.8%	38%
% 3-yr Market Cap Growth	31.3%	23.3%	34%

From a 2017 analysis of companies with six or more directors and annual revenues over \$1 billion and for which we had all performance measures. Differences are statistically significant in a difference of means test, $p < 0.05$. Results by industry are very similar.

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