Information technology transformation risk

Complex information technology (IT) projects, such as upgrading legacy systems, migrating infrastructure and data to the cloud, or integrating major systems in the wake of a merger, present major challenges for all companies. Such projects might be critical elements of broader initiatives to transform the business itself—strategic efforts often referred to as digital transformations. They might be driven by the goal of improving existing business processes. In either case, these projects carry significant risks, including the risks of disruptions to customer service, operational inefficiencies, and breaches of data security.

On June 7, 2019, members of the North American and European Audit Committee Leadership Networks (ACLN and EACLN) met in New York to discuss how board oversight can help to minimize the risks of IT projects. They were joined by three chief information officers: Suja Chandrasekaran, former CIO and head of digital at Kimberly-Clark Corp.; Robin Dargue, CIO of WPP plc; and Rahul Samant, CIO of Delta Air Lines. *For biographies of the guests, please see Appendix 1 on page 10. For a complete list of participants, see Appendix 2 on page 11.*

Executive summary

Members and guests touched on several topics related to IT transformation risk oversight:

- **IT projects and their major risks** *(page 2)*

  Companies undertake a range of IT projects, such as adoption of new applications, migration to cloud-based services, enterprise resource planning (ERP) and customer relationship management (CRM) platform implementation, and merger-related integration. Members and guests mentioned the challenge of upgrading core legacy systems while continuing to serve customers. The complexity of these implementations entails several potential hazards, including operational disruptions, security and privacy breaches, and massive cost overruns.

- **Mitigating the risks of major IT projects** *(page 3)*

  Members and guests highlighted several strategies for mitigating the dangers of IT projects. When possible, a series of smaller, more incremental projects—rather than a single massive one—may be an alternative approach that entails less risk. Regardless of size, a strong partnership between the IT function and business leaders—in pursuit of clear business objectives—is critical, as is devoting ample resources and time to the project. Moreover, these projects require effective change management because they typically entail adapting

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business processes to new technology. Good project management and oversight by an executive committee is key.

- **Enhancing board oversight of IT projects** *(page 6)*

  Boards oversee IT projects when they exceed certain thresholds as capital investment projects or when they entail risks that fall under the board's oversight of enterprise risk management (ERM). Oversight is often exercised by some combination of the audit committee and the full board. Members recommended several practices for boards, including regular reporting from a range of people involved in a project, review by internal and external audit, and the use of appropriate metrics to gauge progress.

For a list of discussion questions for audit committees, see Appendix 3 on page 13.

IT projects and their major risks

The guests, subject matter experts, and network members identified a range of technology projects that may rise to a level that warrants board-level oversight.[1] These projects are often essential for achieving key company objectives, such as executing on strategic initiatives, maintaining operational efficiency, or shoring up cybersecurity.

Common types of IT projects include implementations of new applications and upgrades of hardware such as servers. In recent years, migrations to the cloud have become widespread, as remotely hosted services and infrastructure have become more robust. Implementations of ERP and CRM applications were also mentioned frequently by members, as were integration projects associated with mergers and acquisitions.

The dilemma of legacy systems

Some of these IT projects might be part of large-scale modernizations of legacy systems, requiring a great deal of concentrated effort. One key issue is whether the existing system should be refurbished or replaced. A member described the choice between sprucing up the old and starting fresh: *"As you are trying to migrate from a legacy architecture to a new one, where do you re-architect what you've got and where do you build greenfield?"*

Each strategy has challenges, members noted. Legacy systems can be hard to patch; in addition, adding new functionality to an older system increases the complexity of the system, setting the stage for a variety of problems. Meanwhile, customers still need to be served, as Mr. Samant noted: *"You've got to start by putting lipstick on the pig, but over time, you're transforming the pig."* On the other hand, migrating to something completely new—like a standardized cloud-based application—may require extensive changes to technologies and business processes, and change management can be notoriously difficult on many fronts.

The costs of implementation mistakes

The risks associated with the implementation of a major IT project are manifold because the implementation process is complex and the stakes are high. One member revealed a wariness that was common: *"There's more bad than good. These things are complicated operationally and from an oversight perspective. Everything's great until it's terrible, with shortfalls in deliverables, delays, going over budget. Errors are multiple."*

Members and guests identified some of the hazards that companies face related to these projects. These include operational disruptions and inefficiencies, which make it more difficult for staff to get their work done, or, worse, interrupt service to customers. There is also the possibility of security and privacy breaches. As a member remarked about IT projects and cybersecurity, *"They are very intertwined. Cyber is all wrapped up in the condition of your software and hardware."* Cost overruns are a common problem, and as IT systems and processes change, reporting systems and processes may be compromised, jeopardizing the integrity of financial reports.

Potential problems can be compounded by more general challenges and circumstances the company faces. One member explained, *"You also have to think about what's going on with your business. If you're ramping up, it can be taxing on the systems. You could get outages—it could be the whole system, or portions of the system, creating headaches for operations and for customers."* Another member mentioned complications stemming from extensive international operations: *"We're in 100 different countries. The bigger challenge is that you can get the large countries onto the system, but then getting all the smaller countries on the system [is hard]."*

Mitigating the risks of major IT projects

How can companies reduce the chances that these risks are realized? Members, guests, and other experts pointed to a variety of good practices that help mitigate potential risks.

Incremental approaches

Acknowledging the myriad risks, many companies have moved away from large projects in favor of agile implementations that make the risks more manageable. Mr. Samant argued that large projects are inherently problematic: *"We took our core system and ran a three-year project, and it cost 40% more than what it was going to cost and took 50% longer … three years, not two … it's just the nature of the beast. Big projects are intrinsically flawed. We underestimate the costs. Wrinkles show up when you get into it. Avoid it like the plague if you can. We are focused on projects with gradual, collaborative, iterative lifecycles."*

Though members and guests noted that large-scale projects still take place, they have also seen a shift along the lines suggested by Mr. Samant. IT transformation today is often a more continuous process than it was before. As Jim Martin, an expert at EY, explained, *"Ten years ago, an ERP implementation was an all-hands-on-deck event for several years. Today, it's more*

of an 'always on' era of technology-enabled transformation, with many companies undergoing one transformation after another or multiple transformations all at once." An ACLN member added, "It's out of style to do a huge project. Companies are more inclined to do modules, functionality by functionality. You break it into chunks and phase it. You can make adjustments as you go. You are not committing to a huge undertaking."

Clear business sponsorship and objectives

Regardless of size, IT projects should be partnerships between IT and the business. Mr. Dargue emphasized that a project has to have someone in the business—not just in IT—pushing it forward: "I've come to the conclusion that it starts with sponsorship. Do we have the right sponsor for the initiative? Most projects that fail do so because there is no business sponsor, not because there isn't enough money. Innovations sitting in a dark room don't help. There are very few IT projects—they are all business projects. You need a strong business sponsor to push it through for the business." Sponsorship by someone in the business is an indicator that the project has a clear business objective and is not driven by vague desires to invest in technology for the sake of technology.

A member warned about expanding or changing objectives in a way that dilutes the mission: "Sometimes you move to new things. At the end of the day, the project becomes a monster. Sticking to the original scope is key." Ms. Chandrasekaran agreed: "One of the biggest pitfalls for major initiatives is a lack of adequate focus on the original objectives that drive value creation from the initiative—be it cost reduction, revenue generation, risk mitigation. A rigorous approach is essential in order to trace and deliver on the accretive value creation promise." She urged companies to "agree on customer, enterprise, and technology outcomes and hold your feet to the fire in delivering on the outcomes."

Ample resources, talent, and time

Projects are more likely to succeed when they are supported by sufficient resources from the start. A member noted: "The best advice I heard on IT issues was as a CEO, when [I was told to] triple the budget and double the timeline to switch to a new ERP system."

Members highlighted the importance of deploying enough personnel—and the right personnel—to any major project. "You have to have the best people working on it, and they are the hardest to get," one member said. Another added, "As we embarked on the software, we had to address talent—some workers were tuned to old systems. We had less in-house expertise." Mr. Samant agreed: "People spending time with dedicated IT folks is important. There's no place for part-timers now. If the business doesn't have a team of technology-savvy people who interface with IT, the projects won't work."

Members suggested using consultants to review a project at regular intervals. "I like having an outside expert saying it's going to be okay. And if it doesn't go okay, I can say, 'What did you

do to us?"' a member said. Experts have also recommended devoting time to testing new systems, using "a simulation of the live production environment but without the risks."[2]

Adaption of the business to the technology

The benefits of a new technology will not be fully realized unless is it properly harnessed by the business. One member said, *"In our organization, we're going through massive projects, and we've grossly underestimated the change management. It's not a tech problem, it's a business change-management problem."* Another member made a similar point: *"I can't say I've seen complete failures, but I have seen floundering where companies are trying to implement IT systems and they don't have their business practices ready in response to the IT. You put in a new system, but you don't have practices aligned with it."*

Mr. Dargue noted that the next generation of cloud-based software as a service, though configurable, is less customizable. Though going to the cloud can help companies save time and reduce the risks of maintaining technologies themselves, a different kind of effort is required instead, he said: *"You can't modify the software, but you will instead spend the money on business change. The risks move to change management."* Mr. Samant echoed the point: *"You're going to have to change business processes. That shifts the risk from IT to the CFO or the chief revenue officer. You lose some control."*

Upgraded software and new business processes will not achieve their potential unless employees are willing and able to use them. A successful process requires well-designed training for employees, who may need to be convinced that these technologies are worth the effort of mastering them.[3] As a member noted, *"You need the business to sell internally what they bought. It fails when it's viewed as an IT project."*

Effective management and governance

A member emphasized the importance of good management: *"You have to have professional project management. Don't assume the IT staff are the right ones. You can buy it, but you have to have accountability in place."* Good lines of communication among stakeholders are essential for gathering feedback, tracking progress, and escalating issues.[4] Ms. Chandrasekaran said the CIO or CTO should keep key stakeholders including the board engaged at a regular cadence: *"The right frequencies come down to what's topical, but it is important for the board and management to be closely engaged – to have transparency on issues, adoption of new releases, and progress."*

Companies benefit from strong IT governance in the form of an executive committee, consisting of executives including HR and legal, who oversee important aspects of the project. Strong oversight may be especially important if a third-party vendor is doing much of the work. One member described a large-scale project that stalled because the vendor was putting its priorities elsewhere, a fact that only emerged after close scrutiny of the project.

As part of ensuring an effective governance framework, new technologies and business processes may require modification of existing controls or the addition of new controls, including operational controls and financial reporting controls. A member noted, *"People think new systems will fix all these deficiencies. But there is often underutilization of internal control systems—the importance of these systems is underestimated."*

Enhancing board oversight of IT projects

Members and guests discussed how boards assess which projects to review, which committees of the board take the lead, and which oversight practices are most effective.

Which projects should the board review?

Board attention to IT projects varies from company to company. At a given company, board involvement is likely to depend on the size and scope of the project and its attendant risks. Some projects may require board oversight because they are capital investment projects of strategic importance or they exceed a certain threshold of expenditure. One member said, *"If management is spending a huge amount of money, if it's transformational and business and strategy are fundamental to it, then you get a deeper dive. If you're a company implementing a single ERP system around the world, you might have a few board sessions on the updates, because it's so pervasive."*

Member also noted that projects entailing significant risks require board involvement as part of the board's responsibility for overseeing ERM. One member saw room for more board attention in this area: *"The company might move to a CRM system that would be important for the salesforce, but I've never seen that brought to the board. Yet, it would be important in the context of ERM, because if you don't implement it, the sales folks have no numbers to call."* The same might be true of ongoing, smaller projects. As Mr. Martin noted, *"It's a little like putting the frog in the pot of water and then turning the burner on high. Audit committees don't always realize what's going on because the way technology-enabled change happens is a little bit at a time."*

Which committees of the board should take the lead?

Most members said that board oversight of technology projects was exercised by some combination of the audit committee and the full board. *"I see the audit committees spending more time on this than the board does. But also, pretty universally, I see this as an overall board function for the big decisions about which way to go with an enterprise-wide system,"* a member explained. Sometimes a subcommittee might take charge, a member noted: *"Two of us volunteered to create a subcommittee of the audit committee that met every time the audit committee met, meeting with the CIO and key lieutenants."*

Only a few members mentioned a committee other than the audit committee, though some boards have IT or technology committees, and experts often tout their value.[5] *"I don't believe most companies need an IT committee because it's already so central to everything you do,"* a

member said. In one case, a member noted that a compliance committee was involved, but was concerned about overlapping coverage: *"I let the compliance committee take it, but you have to be careful—committees can start competing a bit, and that's not what you want."*

Some members posited that the audit committee would inevitably bring a certain perspective to the issue of technology given its focus on risk. Yet boards should not restrict their review to focus entirely on risk. *"A significant problem that I'm seeing is underinvestment in technology,"* a member noted. Others raised the issue as well: *"Are we appropriately adopting and scaling at speed those technologies that are essential for competitiveness going forward?"* One member offered a recommendation for balancing the focus on risk: *"One thing I've seen that's useful and constructive is when you have the discussion of this issue getting built into the annual strategy day. Not so much dollars and cents, but 'how does it fit into how we see the business running five years from now?'"*

What are good oversight practices?

Members suggested various approaches to exercising board-level oversight. In general, they recommended an active role, starting early in the process, while noting the inherent difficulties of oversight and warning against crossing the line to management. One member said, *"It's extraordinarily difficult for an audit committee to do that much in terms of managing the risk. They're highly complex projects. You pay attention to the scope, plan, budget, and timeline, and you try to gain a good understanding of the integrators you've chosen, looking at what their track record is. The audit committee can play a role, but you don't want to manage the business."*

Members and guests described their preferred practices for exercising oversight:

- **Reports from management and consultants.** Members said they wanted to hear from a range of people involved in a project, both to ensure they get knowledgeable perspectives and to circumvent attempts to distort the facts. *"Most CEOs are not experts at this; they're just repeating what someone tells them. I'd rather hear from the person who tells them,"* one member said. Another added, *"We made sure that we had exposure to the players on it, not just the CIO."* A member noted that if consultants are involved, the board should hear from them as well: *"We utilize third parties to work very closely on or even lead the process. They report to the board and audit committee."*

  The guests also endorsed good communications with the board. *"For major projects, I bring the business leaders with me, because they're accountable for the benefits,"* Mr. Dargue noted. Ms. Chandrasekaran referenced her own board experience: *"I would strongly recommend a fluid connection with the board on tech topics. On one of my boards, in consideration of the increasing impact of technology on customer and employee engagement, significantly increasing levels of investments, and the direct connection between company business strategy and technology, one of the asks from the chair was*

seeking a more heightened level of engagement between the board and the technology management team."

- **Frequency of updates.** Members advocated regular reporting, but the suggested intervals varied. One member explained, *"The board won't do it weekly, but they need to do it quarterly, or with interim reports at key points, but regularly. Major transformations should be on every agenda. You don't need a two-hour presentation, but you need a deck or a short update to get an early warning system."* Another said, *"It's important for the audit committee to discuss the scope and scale of the project early and offer whatever opinions it wants to offer and set up regular updates on the process. Twice a year might be enough."*

- **Review by internal and external audit.** A member explained that *"this is an area where the external auditor and internal audit can give perspective on how well the process is going— their input is important. We look to them to review how the project management is going."* Another member said, *"One of our key roles is making sure that the external auditor plays a strong role in working with management on the biggest risks, especially on financial reporting and financial controls … In an executive session, we can ask the external auditor if there was anything they didn't want to say with management present."*

- **Metrics for gauging progress.** Progress can be measured against other companies and established timelines. A member suggested asking, *"Is this a unique project or are there benchmarks from other companies? You don't have to reinvent the wheel."* Another added, *"The clear delivery of milestones on key items allows the audit committee to follow up to make sure they're in line with the technology, budget, structure, and plan."* In terms of security issues associated with transformations, Mr. Samant noted the value of metrics that anticipate problems rather than identify them after the fact. For example, incidents such as security breaches are lagging indicators, while the percentage of activity that is logged or the percentage of systems that are patched are leading indicators.

- **Expertise on the board.** A member noted, *"Most of my boards have at least someone who was a CIO or something like that—a CIO, a senior engineer, the CEO of a tech company. People who understand the space are very helpful. The time for generalist on boards is well past. We're not looking for just renaissance men."*

Conclusion

"There are thousands of things happening in a technology implementation that come together as pieces of a puzzle; while agile methodologies and product approaches improve the flow of work in iterative smaller units, a large transformation still needs strong leadership across infrastructure, data, AI, cybersecurity, software, user experiences, and interoperability within and outside the enterprise," Ms. Chandrasekaran observed. Audit committee chairs acknowledged that, along with the benefits of implementing new technologies, many things can go wrong. Moreover, the complexity of large IT projects means that anticipating potential

problems is itself a challenge. *"We see issues emerge from a failure of imagination. People are not focusing on the third- and fourth-order effects—they tend to be too narrow in their analysis,"* a member noted.

However, members and guests also identified key factors that can mitigate the risks of these projects. A strong partnership between IT and the business, effective project management, and, if possible, a shift to smaller-scale, more incremental initiatives are all helpful. For boards, regular reporting from a range of people involved can help them improve oversight.

About this document

The European Audit Committee Leadership Network (EACLN) and Audit Committee Leadership Network (ACLN) are groups of audit committee chairs drawn from leading European and North American companies committed to improving the performance of audit committees and enhancing trust in financial markets. The networks are organized and led by Tapestry Networks with the support of EY, as part of its continuing commitment to board effectiveness and good governance.

ViewPoints is produced by Tapestry Networks to stimulate timely, substantive board discussions about the choices confronting audit committee members, management, and their advisers as they endeavor to fulfill their respective responsibilities to the investing public. The ultimate value of *ViewPoints* lies in its power to help all constituencies develop their own informed points of view on these important issues. Those who receive *ViewPoints* are encouraged to share it with others in their own networks. The more board members, members of management, and advisers who become systematically engaged in this dialogue, the more value will be created for all.

Appendix 1: Biographies of the guests

Suja Chandrasekaran is an industry-recognized digital transformation leader. Until recently, she led digital, data, AI, information, cybersecurity, and infrastructure transformations for Kimberly-Clark, globally, as chief information and digital officer. Prior to Kimberly-Clark, Ms. Chandrasekaran was SVP, chief technology and data officer at Walmart, enabling digital, omnichannel, and AI capabilities. She also held CIO/CTO roles at Nestle and The Timberland Company. She serves as a nonexecutive director and member on the boards of public and private companies including American Eagle Outfitters and Barry Callebaut. Ms. Chandrasekaran previously held a board member role at Symphony Retail AI.

A strong relationship builder, Ms. Chandrasekaran has led business partnerships internally and externally throughout her career. She is passionate about investing and developing others and has a reputation as talent developer and mentor in the industry. She mentors numerous individuals—tech and business leaders, women in technology, people of color, and startup founders/CEOs. She is founder/facilitator of T200 – Women CXOs in Tech, a community of C-level tech women focused in lifting each other and other women in tech.

Robin Dargue is the group CIO of WPP. Appointed in February 2014, his current focus is to execute the transformation of WPP Group's IT environment to enable its current strategic direction. Mr. Dargue joined WPP from Alcatel-Lucent, where he held the role of executive vice president for business and IT transformation, and was a member of the Alcatel-Lucent management committee.

Prior to this, Mr. Dargue was a business leader in both Royal Mail and Diageo, in charge of business and IT-based transformation programs. At Royal Mail, he oversaw the introduction of a number of new technology-led products and services for customers, while executing the modernization of the organization's technology assets.

Rahul Samant is executive vice president and chief information officer responsible for Delta Air Lines' information technology strategy, applications, cybersecurity, and infrastructure, which are a vital part of nearly every aspect of the customer experience.

Mr. Samant joined Delta in February 2016 from AIG, a multinational insurance corporation with more than 88 million customers in 130 countries. At AIG, he was chief digital officer, responsible for internal- and external-facing web, mobile, and social assets, and harmonizing efforts across contact centers, social media, the internet, and the company's intranet. Mr. Samant also led AIG's captive IT unit in Manila, Philippines, and managed the company's use of vendor resources overseas.

Prior to joining AIG, Mr. Samant held various roles at Bank of America for 20 years, most recently leading the Global Supply Chain Management organization. His other leadership roles included Consumer Channel Technology CIO, CIO for Global Wealth & Investment Management, and managing director for the bank's extensive global delivery organization.

Appendix 2: Participants

ACLN and EACLN members participating in all or part of the meeting sit on the boards of over 60 public companies:

- Ron Allen, Coca-Cola
- Jeremy Anderson, UBS
- Werner Brandt, Siemens
- Les Brun, ACLN Alumnus
- Aldo Cardoso, Bureau Veritas
- Pam Craig, Merck
- Pam Daley, BlackRock
- Dan Dickinson, Caterpillar
- Dave Dillon, 3M and Union Pacific
- Sam DiPiazza, AT&T
- Bill Easter, Delta Air Lines
- David Herzog, MetLife and DXC Technology
- Liz Hewitt, Novo Nordisk
- Charles Holley, Amgen
- Mike Losh, Aon
- Nasser Munjee, Tata Motors
- Marie-José Nadeau, ENGIE
- Tom Schoewe, General Motors
- Leslie Seidman, General Electric
- Gerald Smith, Eaton
- Charlotte Strömberg, Skanska
- Isabel Torremocha, Repsol
- Jim Turley, Citigroup
- John Veihmeyer, Ford

Appendix 2: Participants, continued

EY was represented in all or part of the meeting by the following:

- Andy Baldwin, EMEIA Area Managing Partner

- Jean-Yves Jégourel, EMEIA Assurance Leader

- Frank Mahoney, Americas Vice Chair of Assurance Services

- John King, Americas Vice Chair of Assurance Services-Elect

Appendix 3: Discussion questions for audit committees

? What kind of major IT projects or improvements have your companies undertaken?

? Are you seeing any trends in the types of projects undertaken?

? How does the company find a balance between overinvesting and not investing enough, and between investing in customer-facing versus employee-facing capabilities?

? What are the consequences of IT projects that do not go well?

? What are the pitfalls that lead to poor outcomes? How can these pitfalls be avoided?

? How is the company changing its risk functions to keep up with the increased complexity and escalating risk in the "always on" transformation era?

? What kind of IT transformation projects rise to the level of board oversight?

? What committees of the board get involved in oversight?

? What are good practices for effective oversight?

? What are key questions the board should ask management?

Endnotes

[1] *ViewPoints* reflects the network's use of a modified version of the Chatham House Rule whereby comments are not attributed to individuals or corporations. Quotations in italics are drawn directly from conversations with network members and other participants in connection with the meeting.

[2] Rob Orr, "How to Ensure a Successful IT Migration," *Information Age,* October 5, 2018.

[3] Rob Llewellyn, "Digital Transformation Risks," (blog), accessed May 13, 2019.

[4] Orr, "How to Ensure a Successful IT Migration."

[5] Timothy Chou, "It's Time for Boards to Have Technology Committees," *CFO,* April 15, 2014.