

BOARD PERSPECTIVES

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Modernizing Legacy Infrastructure to Increase Competitiveness: The Board's Role

Innovative culture, speed to market, customer focus and organizational agility are mainstays in boardroom conversations about innovation. However, these discussions should also address technological roadblocks to realizing innovation initiatives.

The origin of the phrase, “innovate or die,” is unclear. But it was made famous over 35 years ago in one of Peter Drucker’s classic books. In it, he wrote that the entrepreneur sees “change as the norm and as healthy ... [and] always searches for change, responds to it, and exploits it as an opportunity.”¹ Given today’s business realities, these words are timeless, as they refer to the importance of agility in the market.

Based on the results of a recent global survey of board members and C-suite executives, the rapid speed of disruptive innovation ranks among the top risk issues for organizations over the next decade.² To face the future confidently, directors need to understand the extent to which the company’s legacy infrastructure either enables or constrains the organization’s effectiveness in responding rapidly and continually to emerging market opportunities, competitive threats and customer demands.

¹ *Innovation and Entrepreneurship: Practice and Principles*, by Peter F. Drucker, New York: Harper & Row, 1985.

² *Executive Perspectives on Top Risks for 2023 and 2032*, Protiviti, December 2022:
www.protiviti.com/us-en/survey/executive-perspectives-top-risks-2023-and-2032.

While there are many aspects underpinning an innovative culture, technical debt (as discussed below) can be a powerful restraint to inculcating it across an organization. Many incumbents face formidable challenges as market forces demand ever-higher levels of resilience in adapting business models, processes and systems to meet continuously changing expectations.

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To understand how information technology (IT) organizations are ushering legacy infrastructure into the digital era to enable the innovation that will fuel long-term value creation, Protiviti undertook a global survey of more than 1,000 chief information officers, chief technology officers, chief information security officers and other technology leaders.³ Here is what we found:


- A majority of organizations (79%) have clearly defined innovation goals — a positive indicator that the critical need for an innovation plan and mindset is recognized at the top. Overall, 54% have a clear innovation strategy, and 41% are developing one. But it is possible that most organizations have only notional objectives of what they seek to achieve versus a fully developed, actionable strategy.
- Only 29% of respondents indicated that innovation leaders bridge the gap between technology and business needs very well. This suggests more work must be done to understand innovation goals and how they align with the business.
- Organizations are spending an average of 31% of their IT budgets and are investing, on average, 21% of their resources on managing technical debt. Technical debt is the cost and magnitude of additional rework caused by the accumulation of legacy systems and application solutions that were easier to implement over the short term but not the best overall solution for the long term. The result is legacy infrastructure that is difficult to maintain and support. As to the impact of technical debt on the ability to innovate, 69% of survey respondents rated it as higher than a moderate impact.

³ *The Innovation vs. Technical Debt Tug of War*, Protiviti, March 2023: www.protiviti.com/us-en/global-technology-executive-survey.

- In addition to the universal concerns over proliferating regulatory and compliance requirements and security risks when it comes to innovation, survey respondents also noted a lack of governance over infrastructure, innovation investment justification and organizational structure (teams and processes). The top five skills-related gaps impeding innovation were design thinking, solution architecture, enterprise agility, technical knowledge and strategic thinking.
- Eighty-two percent of respondents noted that they are more than moderately concerned about the security risks, such as breaches, data loss, improper controls and poor access management, associated with implementing new technologies.

Why should boards care about these findings? In an environment dominated by emerging technologies, disruption of business models and universal acknowledgement of the importance of agility and resiliency to corporate success, innovation is a strategic imperative. Unfortunately, all efforts to inculcate an innovative culture can be frustrated when technical debt has “accrued” to such a level that it slows organizational response to emerging market opportunities and stifles the ability to compete in a digital world.

A key takeaway for directors is understanding the impact of technical debt on innovation goals and strategies. Technical debt is often likened to monetary debt; if it’s not addressed, it can accumulate “interest” over time as technology evolves, necessitating additional effort in future development. As the cost of “repaying” the debt becomes more difficult and expensive, it’s no surprise that companies are allocating a significant portion of their annual IT budgets to managing it.



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The aforementioned research offers a call to action to increase agility and sustain the company’s innovation and transformation journey successfully over the long term. Key highlights are summarized below.

Modernize legacy applications. Address accumulated technical debt to drive efficiency in business and IT systems, reduce infrastructure costs by streamlining services and moving core applications to the cloud, and improve capacity to innovate to enrich customer experiences, digitalize products and services, inform decision-making, and compete with “born digital” players.

Several tactical approaches are available to mitigate technical debt:

- **Create a greenfield** — To support new products or markets, some organizations may see opportunities to start with a clean digital slate by building new infrastructure from the ground up based on modern technologies. Of course, this is unlikely to address the technical debt of the existing enterprise.
- **Ring-fence as a quarantine** — In some cases, technical debt can be isolated from the rest of the operating environment, especially for infrastructure and supporting business processes designated for retirement.
- **Preserve and protect** — For some stable infrastructure, the right approach may be building a services layer around the system. By deferring the inevitable upgrade or replacement of the systems in question, the company buys time to plan an effective solution.
- **Simplify and rationalize** — Streamlining technology where opportunities permit enables businesses to address some forms of technical debt. This approach may be best suited for organizations that have grown through mergers and acquisitions.
- **Go big** — Some organizations may be able to use the rip-and-replace process on existing systems to reduce technical debt aggressively by upgrading to a more modern infrastructure. While this option has potentially high rewards, the associated risks should be carefully considered.
- **Upgrade and replace in phases** — This approach represents a migration path whereby technical debt is reduced over time through a risk-sensitive, phased upgrade or transition to newer technology platforms. For example, it may entail building a parallel infrastructure with temporary “scaffolding” to support the transition to the desired future-state environment.

The above approaches are dependent on the current state of an organization’s technical debt, existing documentation, institutional knowledge, appetite for risk and available resources. They are not mutually exclusive and can be combined to address different systems and requirements. For example, cloud solutions can help organizations prevent future technical debt while shifting some of the maintenance burden to the cloud services provider.

Improve agility through rapid response and strong operational resilience. Orchestrate the building of resilience across existing domains such as business continuity, disaster recovery, technical recovery, cyber resilience and third-party asset management so that organizations can readily respond to outages, crises and other threats.

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Capitalize on the emergence of advanced technology platforms and capabilities. Leverage new platforms and architectures for building and running business applications to enable better access to data, provide flexibility and faster time to market, and support digital capabilities to deliver differentiated experiences. Deploy greater process automation and intelligent technologies such as artificial intelligence (AI), machine learning, and augmented and virtual reality to reimagine existing processes and alleviate risks arising from the inevitable shifts in labor availability and costs.

Maximize customer engagement. Focus on the experiences of users and consumers (both positive and negative) to drive interaction through a modern, innovative operating model. Decisions based on insightful customer and sufficiently advanced user analytics and AI are likelier to achieve business success.

Prioritize cybersecurity and data privacy in innovation activities – but avoid creating bottlenecks. Proper cyber hygiene is foundational to managing security risks and maintaining the resilience of business services. Companies should harness the power of effective cybersecurity frameworks to mitigate cyber risks without slowing down innovation. They should also search for opportunities to boost enterprise value with novel tools such as greenfield cloud environments.

To that end, consider implementing practices that balance identity and access management to ensure maximum speed of user access while managing risk and complying with applicable legal and regulatory data privacy requirements for collecting, storing, securing, processing and using sensitive data.

Make your talent your customer. A focus on the customer experience should extend to the organization's people and talent. Retention of key people requires efforts to keep them engaged for the long term. That's why an advocate for the preservation of talent and culture should have a seat at the decision-making table as the organization focuses on sustaining its financial health.

Directors should consider the above call to action when discussing innovation goals and strategies. By listening to the voices of customers, employees and other stakeholders, businesses can identify technical debt issues and prioritize their infrastructure modernization efforts. From the board's perspective, it is essential to address constraints on critical innovation initiatives in a timely manner – before the limitations placed on improving operational efficiency and adjusting business models become so egregious that they impair the organization's competitive position.

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Questions for Boards

Following are some suggested questions that boards of directors may consider, based on the risks inherent in the company's operations:

- Is the board satisfied with the organization's innovation strategy, culture and processes? Do discussions of innovation investments address the costs, benefits and expected payback? Does the board agenda allocate sufficient time for discussing innovation, including consideration of appropriate innovation-related metrics that tell the full story regarding the results the strategy is delivering, return on investment and the effectiveness of the company's innovation capabilities?
- Is the organization agile and adaptive enough to recognize market opportunities and emerging risks over time and capitalize on the opportunities and endure or overcome the risks with timely adjustments to its strategy and supporting technology infrastructure? Does it learn through data from customer and supplier interactions and have the ability to convert lessons learned into process, product, service and business model improvements?
- Do the board and executive management have visibility into the extent and nature of the organization's technical debt? Is there an actionable road map to mitigating the risk and cost of technical debt? Is there active governance in place to ensure that effective trade-off decisions are made so that technical debt is actively managed on an ongoing basis? If the answer to any of these questions is no, why?

How Protiviti Can Help

Growing demand for technology solutions and operations aligned to the business is driving increased performance expectations of IT departments. Protiviti helps transform and modernize core technologies to eliminate technical debt and support future-state and emerging requirements. We assist companies with modernizing technology to gain efficiency, agility and resiliency over IT operations.

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