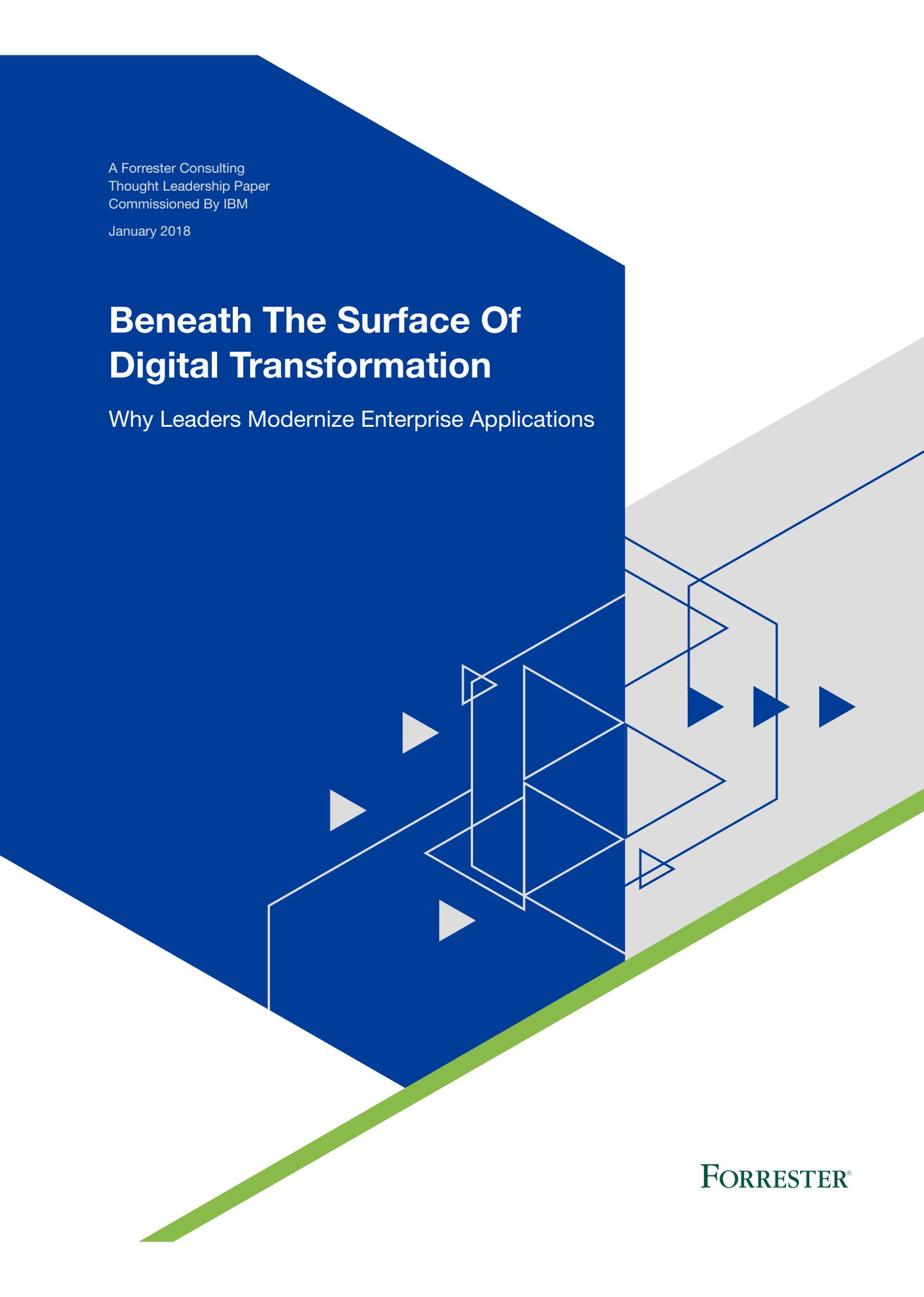


A Forrester Consulting  
Thought Leadership Paper  
Commissioned By IBM

January 2018

# Beneath The Surface Of Digital Transformation

Why Leaders Modernize Enterprise Applications



FORRESTER®

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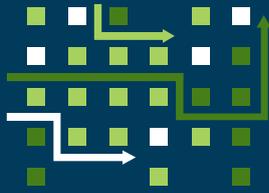
Forrester's Application Development  
& Delivery research group

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**To be successful, a digital transformation strategy must be built on a foundation of systems, processes, and investments that allow for ongoing innovation.**



**When building a digital transformation strategy, key actions determine if your organization will lead or lag behind.**

## Executive Summary

Today's customers are no longer settling for the traditional consumer-business relationship. They expect fulfilling digital experiences with the products and companies they choose. Organizations that strive to be customer-obsessed must undergo a digital transformation to meet this consumer demand. They must become digital businesses that use technology to drive superior customer experiences externally, powered by agile operations internally.

But digital transformation is no small feat: It requires sweeping change. And not all change will be highly visible. It is a continuous journey focused on long-term flexibility and growth, not a finite, tactical project. To succeed, you must build your organization's digital transformation strategy on a foundation of systems, processes, and investments that ongoing innovation and reinvention require.

In June 2017, IBM commissioned Forrester Consulting to evaluate the role of modernizing enterprise applications — specifically, systems of record (SoR) — in digital transformation. To explore this topic, Forrester developed a quantitative survey of 475 global professionals with responsibility or influence over digital transformation strategy. Respondents were from large companies that have completed a major phase of their digital transformation or that have projects underway. Our study identified key actions that you and your organization can take to ensure a positive outcome and optimize return on investment.

### KEY FINDINGS

- › **Digital transformation requires a foundation of modernized SoR.** To deliver contextually relevant experiences, organizations must harness information across enterprise systems, including those below customers' line of sight. Front-end systems can't provide full context without reaching back and tapping data and processes in SoR. Organizations need to invest in making these systems agile and flexible so they can quickly respond to system-of-engagement (SoE) and system-of-insight (Sol) requests.
- › **Legacy systems contribute to digital debt.** Legacy systems hinder connectivity, limiting access to data and insight for innovation. The large monetary outlays these systems require divert funds away from new technology investments that fuel future growth. While modernizing SoR can reduce costs to help fund next-generation technologies like artificial intelligence (AI) and internet of things (IoT), many organizations are tackling these shiny objects ahead of SoR modernization anyway. Without the SoR groundwork, however, success will be difficult to achieve.
- › **Modernization leaders write the roadmap for digital success.** Leaders — those making SoR modernization a priority — use an approach built on solid SoR investment, agile practices, foundational changes to legacy systems, and a network of partners. They enjoy greater levels of digital transformation success, operational benefits, and returns across digital transformation objectives, such as product quality and cost reduction.

# Digital Transformation Is Customer-Obsessed

Digital technology has changed market dynamics. Customers expect great experiences. Increasingly, this means engaging with products and companies digitally. Forrester's research has shown that companies that are customer experience (CX) leaders grow revenue faster and enjoy greater brand preference than their peers.<sup>1</sup> Digital transformation is key to delivering on these customer expectations, which are evolving at a rapid pace. To compete with the agility and customer experience excellence required in the age of the customer, your business must be digital.<sup>2</sup>

**Digital businesses use technology to win, serve, and retain customers by improving experiences, enhancing offerings, and increasing operational agility.**

If you have not started down the path of digital mastery, develop a strategy now. And if you've already embarked on the path of digital transformation, don't go any further until you re-examine your approach. You must ensure you're taking the right steps and commit your organization to building the right foundation for successful digital transformation.

## Firms Are Thinking Broadly About The Scope Of Digital Transformation

IBM commissioned Forrester Consulting to conduct a cross-industry study exploring enterprise digital transformation strategies. Many of the 475 global IT and business leaders surveyed have already begun the hard work of transforming their organizations to meet the demands of a digital world: 54% report they have completed a major phase or phases of their digital transformation within the past 24 months; 46% have projects underway.

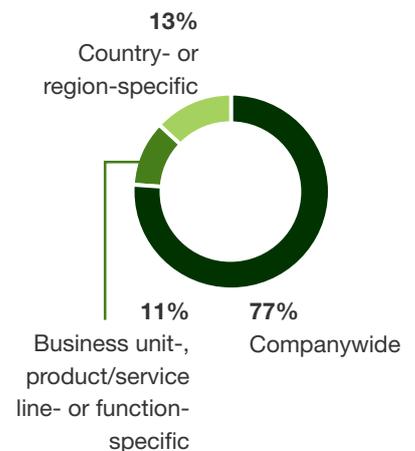
However, digital transformation is not finite — it's a journey that continues to evolve long after initial implementation. As customer expectations and competitive pressures shift, organizations must ensure that their processes, platforms, and ecosystems are flexible enough for continual reinvention.

Siloed and redundant digital strategies won't work. A focus on point improvements — such as adding a mobile interface to an existing app or adding digital channels to the call center — only addresses a subsection of the customer journey and does not go far enough for true digital transformation.<sup>3</sup> Most executives we surveyed are taking steps to avoid this pitfall by ensuring their digital transformation strategies span the organization (see Figure 1).



Figure 1

**“What was/is the organizational scope of your digital transformation strategy?”**



Base: 475 global professionals with responsibility or influence over their organization's digital transformation strategy  
Note: Percentages do not total 100 because of rounding.

Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, September 2017

# Strategic Investment Is Vital

Transformative digital investments deliver customer value, improve productivity, and drive revenues. These investments also afford businesses a high degree of flexibility, scalability, and reliability. Because of these priorities, nearly a third of companies globally are already allocating 15% of their revenues to digital investments.<sup>4</sup> Almost six out of 10 organizations in our study (59%) are spending \$10 million or more on digital transformation; twenty-nine percent are spending \$50 million or more.

Digital transformation will ultimately impact every organization in every industry. The question is: Will your organization be a digital leader or a digital laggard? Those that have the foresight to invest strategically will become the predators rather than the prey, innovating to achieve competitive advantage. Success hinges on whether your organization's core enterprise systems have the agility, scalability, and reliability that true digital transformation demands.

**Digital transformation success hinges on whether your organization's core enterprise systems have the necessary agility, scalability, and reliability.**

## LEGACY SYSTEMS CONTRIBUTE TO DIGITAL DEBT

Outdated enterprise systems not only slow digital strategies, but weigh them down through digital debt — debt from the exorbitant amounts of money spent keeping these old applications running and from the inflexibility that hinders the business. Legacy systems hamper connectivity, limiting access to necessary data and insight for innovation, and the large monetary outlays the systems require to keep them operational divert funds away from new technologies that fuel future growth.

Executives must take a hard look at the opportunity costs resulting from technologies, systems, and processes that constrain digital transformation efforts. Rather than treat core enterprise applications as “old world” technology, they must invest in modernizing these systems to create an agile and flexible foundation on which ever-evolving digital capabilities can be erected.

**Outdated enterprise systems saddle organizations with digital debt.**

**Fifty-nine percent of organizations are spending \$10 million or more on digital transformation; 29% are spending \$50 million or more.**



# Modernized Systems Of Record Are The Foundation

Digital businesses must ensure their enterprise applications support a business approach that is customer-led, insight-driven, fast, and connected. Businesses must also harness information across systems to engage customers in context, an element critical to effective digital experiences. To do this, they must first lay the groundwork by modernizing (including updating and replacing) their core enterprise systems.

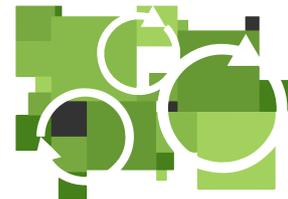
Neglecting the systems that support enterprise operations poses a real risk for digital transformation efforts. A holistic digital transformation strategy includes not only customer-facing applications, but the enterprise applications working beneath the surface:

- › **Systems of engagement add context to employee and customer interactions.** These applications support the acquisition, servicing, and retention of customers (e.g., mobile applications, messaging, eCommerce, self-service portals). They aggregate and package information into a contextual experience that enables customers to act.<sup>5</sup>
- › **Systems of insight tap into information to deliver value.** Systems of insight support the ability to harness and consistently turn data into action (e.g., business intelligence/analytics, predictive analytics, artificial intelligence, master data management). They surface opportunities and threats evident in data and initiate appropriate actions in response.<sup>6</sup>
- › **Systems of record provide the backbone for business execution.** Systems of record support the internal operations of the enterprise (e.g., CRM, HR, enterprise resource planning, supply chain management, financials and accounting, manufacturing). They contain the data that SoE and Sol rely on to be effective, and cover a broad array of a company's software systems that collectively can take up as much as 80% of its code.<sup>7</sup>

SoE and Sol can't provide full context without accessing the data and processes in SoR. The challenge is that SoR have traditionally been built for stability — to automate core processes and transactions and to ensure compliance — rather than for speed. But digital businesses demand velocity. To meet this need for speed, organizations must modernize SoR to enable both SoE and Sol requests.<sup>8</sup>

Most enterprises are taking measures to ensure their core systems are up to the task: 67% of organizations surveyed are prioritizing modernizing their legacy SoR as part of their digital transformation — just ahead of creating digital platforms for SoE and leveraging Sol (see Figure 2).

**SoE and Sol can't provide full context without accessing the data and processes in SoR.**

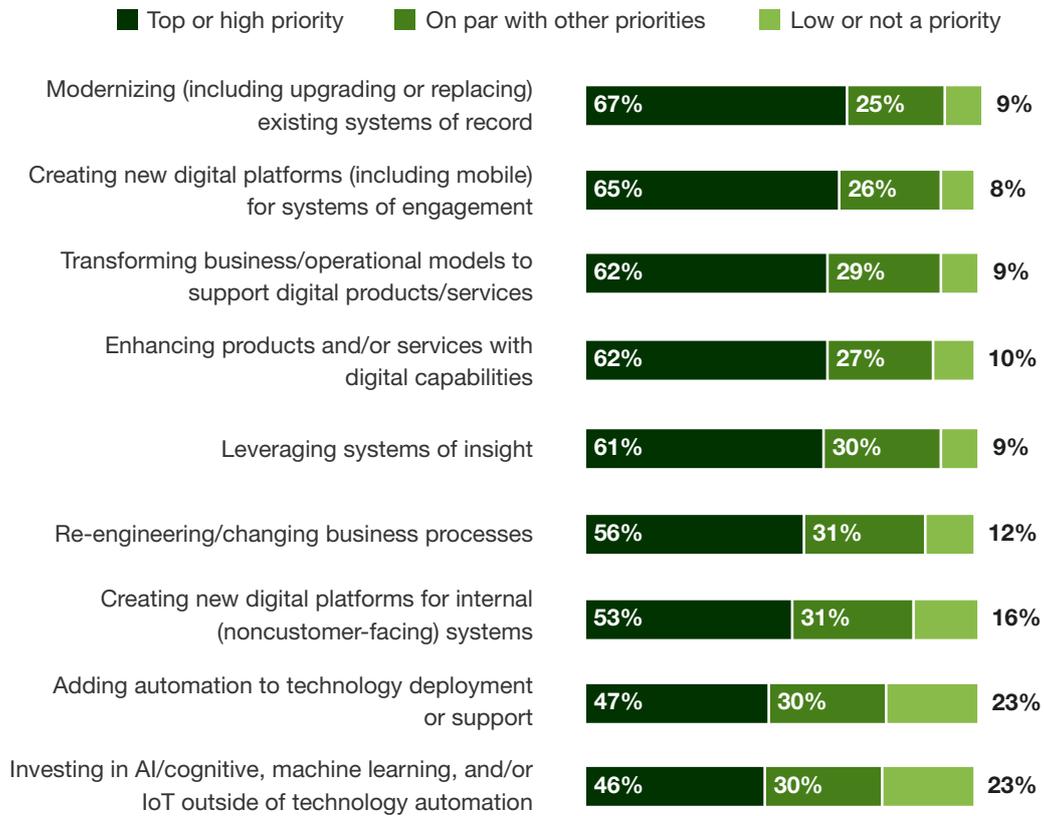


**Neglecting the systems that support enterprise operations poses a real risk for digital transformation efforts.**



**Figure 2**

**“What priority is your organization placing on the following as part of its digital transformation strategy?”**



Base: 475 global professionals with responsibility or influence over their organization’s digital transformation strategy

Note: Percentages may not total 100 because of rounding.

Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, September 2017



## NEGLECTING SoR MODERNIZATION INHIBITS DIGITAL SUCCESS

While most organizations are modernizing their SoR as part of their overall digital transformation strategy, the path to SoR modernization can be wrought with challenges.

- › **Conflicting priorities and perceived lack of strategic value can push SoR low on the priority list.** For some organizations, getting SoR on the to-do list is anything but a slam dunk. Roughly two-fifths of those not making SoR modernization a priority are putting it on the back burner in favor of focusing on SoI and SoE, while one-third don't view it as a strategic priority. It comes as little surprise, therefore, that many organizations struggle with a lack of integration between SoR and SoI, SoE, and other technologies. Firms that use a bolt-on method over true integration must recognize that this approach is tactical, not strategic.<sup>9</sup>
- › **There is a disconnect between digital transformation priorities and the order in which they are tackled.** Modernizing SoR is high on the priority list in digital transformation efforts — that's a good thing. However, many organizations are tackling “shiny” technologies like AI and IoT ahead of SoR. Organizations that do so are fooling themselves if they think they can make next-generation digital platforms and technologies work without laying the groundwork with SoR. In fact, our study found that 23% of those that have completed a major phase of their digital transformation strategy would move modernizing SoR up to an earlier phase.
- › **Current digital transformation budget allocations are insufficient for SoR projects.** Modernizing SoR demands significant investment. The cost of digital transformation is much higher than transformation for just digital customer experiences. As a rule of thumb, firms should spend four times as much on changes to the core systems and operations to support new systems.<sup>10</sup> In fact, Forrester forecasts that SoR will account for over 50% of 2018 global enterprise application spending.<sup>11</sup> Having a realistic budget at the outset is key to ensuring project success. Yet many organizations are allocating roughly the same amount of budget to SoR as SoE — setting themselves up for a budgetary shortfall. Indeed, many of our respondents are coming up short: “Unanticipated costs” was the No. 1 digital transformation challenge, cited by 41%.

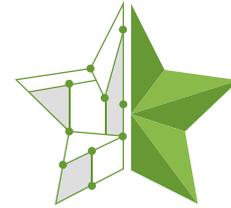
To have a **successful digital transformation**, organizations must first **adequately prepare and budget for the investment in SoR modernization.**



**Twenty-three percent of those that have completed a major phase of digital transformation strategy would move modernizing SoR up to an earlier phase.**

# Will You Be A Modernization Leader Or Laggard?

Our study found distinct differences between companies that are modernizing their SoR versus those that aren't. We call the former modernization leaders, or ones that have completed a major phase of their digital transformation strategy within the past 12 to 24 months and are making modernizing SoR a top or high priority. Conversely, modernization laggards have also completed a major phase of their digital transformation in this period, but have not made modernizing SoR a priority, keeping it on par with or lower than other digital transformation priorities.



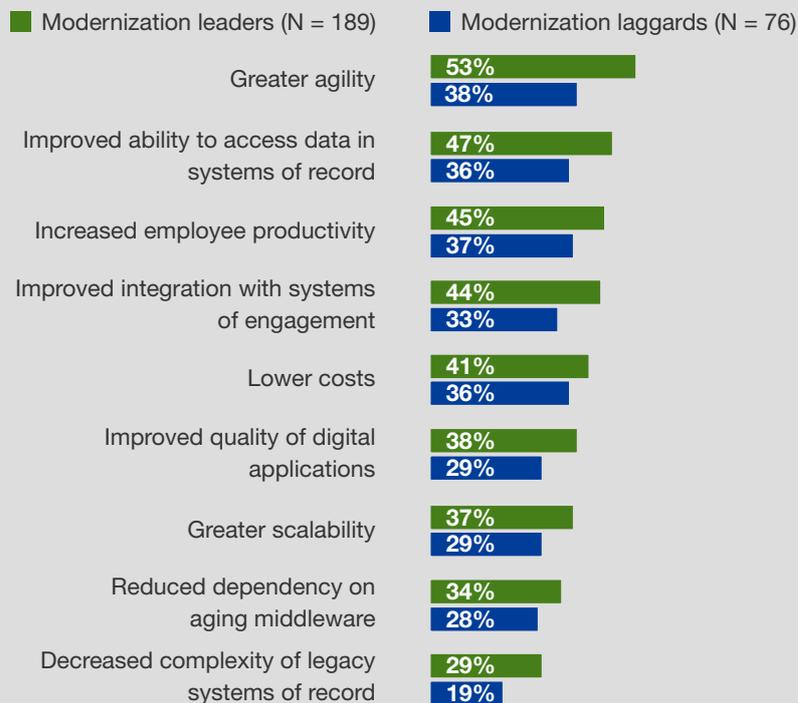
**Seventy-one percent** of leaders describe their digital transformation efforts as **completely or very successful.**

## LEADERS REAP THE BENEFITS OF SoR MODERNIZATION

Modernization leaders are reaping considerable rewards: 71% describe their overall digital transformation efforts as completely or very successful relative to just 42% of laggards. By taking steps to update SoR, leaders also enjoy greater agility, improved SoR data access, better SoE integration, and increased productivity, among other improvements, far outpacing modernization laggards (see Figure 3).

**Figure 3**

**“What benefits did you realize as a result of taking these steps to modernize your systems of record?”**  
(Select all that apply)



Base: 265 global professionals with responsibility or influence over their organization's digital transformation strategy completing a major phase of their digital transformation strategy within the past 12 to 24 months  
Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, September 2017

Organizations are measuring digital transformation success using metrics closely aligned with business objectives around customer, agility, productivity, financial, and product improvements (see Figure 4). Leaders realize greater returns across these metrics with margins ranging from +5 to +51 percentage points (see Figure 5). Differences across product quality (57% versus 6%) and cost reduction (40% versus 8%) were especially pronounced. Low costs, in particular, support a distinct advantage: By reducing digital debt, leaders can direct funds that would otherwise go to maintaining legacy systems to new technology investments that fuel innovation.

These measures of success underscore the real business value of a digital transformation strategy built on a foundation of modernized SoR.

## By reducing digital debt, leaders can direct funds to new technology investments that fuel innovation.

### FOLLOW THE MODERNIZATION LEADERS FOR DIGITAL TRANSFORMATION SUCCESS

Risk aversion is counterproductive. Firms must move aggressively to adopt modern solutions and processes that allow them to fail and succeed fast.<sup>12</sup> Modernization leaders in our study are doing just that, and laggards can learn a lot from them (see Figure 6):

- › **Real digital transformation is a big investment; leaders spend accordingly.** Modernization leaders are laying the foundation of a technology ecosystem that can flex with the requirements of the digital age by allocating more budget to SoR than laggards.
- › **Leaders make foundational changes to legacy SoR.** Modernization leaders in our study are more likely to have updated or improved legacy applications, to have migrated existing applications to the cloud (a move that enables more frequent software updates and the flexibility to adapt to new business models), and to have made wholesale legacy application replacements.<sup>13</sup>
- › **Leaders prioritize the three As of SoR change: APIs, Agile, and automation.** Leaders embrace tools that afford them greater flexibility. They're significantly more likely than laggards to add automation into SoR, to increase their adoption of DevOps processes, and to improve their APIs for existing apps. These tools empower them to personalize experiences at scale, to release software with great speed, and to link to partners that can extend and enhance their customers' journeys.<sup>14</sup>



**Leaders are more likely to have updated, improved, migrated, or replaced legacy SoR.**

Figure 4

### Top digital transformation business objectives



Base: 475 global professionals with responsibility or influence over their organization's digital transformation strategy  
Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, September 2017

**Figure 5**

**“How is your digital transformation strategy performing against these metrics?”** (Greater than 50% improvement)



Base: Varies; global professionals with responsibility or influence over their organization’s digital transformation strategy

\* Low bases; use with caution

Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, September 2017

- › **Leaders combine SoR with SoE to meet the needs of the digital consumer.** Superior customer experience correlates with superior revenue growth.<sup>15</sup> But making the CX improvements to achieve this growth doesn’t come easy: It requires wide-ranging changes to customer-facing interaction points as well as supporting systems. Organizations must have a holistic view of how SoR modernization and the design of SoE interfaces will work in conjunction to better win, serve, and retain customers.<sup>16</sup> Modernization leaders — which are integrating existing SoR with mobile- and/or web-enabled SoE at a greater rate than laggards — are better prepared to deliver the seamless digital experiences consumers demand.
- › **Leaders know the importance of partners in these times of fast, sweeping change.** The complexity and pace of digital transformation efforts need the support of long-term and strategic partnerships that can propel innovation efforts forward and fill internal competency gaps. Leaders in our study were twice as likely to consult with an outside technology or business service partner as part of their SoR modernization efforts than laggards. Additionally, 22% of laggards said that if they could change their approach, they would work with a services partner to gain better understanding of their SoR and its impact on digital strategy.



**Leaders are twice as likely than laggards to consult with an outside partner.**

Figure 6

**MODERNIZATION LEADERS** (N = 189): Those that have completed a major phase of their digital transformation strategy within the past 12 to 24 months and are prioritizing modernizing SoR (top or high priority)

**MODERNIZATION LAGGARDS** (N = 76): Those that have completed a major phase of their digital transformation strategy within the past 12 to 24 months and for which modernizing SoR is on par with other priorities, a lower priority, or not a priority



Base: 265 global professionals with responsibility or influence over their organization's digital transformation strategy completing a major phase of their digital transformation strategy within the past 12 to 24 months  
 Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, September 2017

# Key Recommendations

Real digital transformation requires sweeping change across the entire enterprise, including organizational structure, strategy, culture, technology, and business models. Business and technology executives in our study state that they are prioritizing a wide range of investments across the front and back office. However, the study uncovered a wide gap between those that invest heavily in enterprise applications and those that don't. To be on the right side this digital divide, technology and business executives must:



**Prioritize systems of record transformation.** Systems of record lack the sizzle of customer-facing interfaces such as mobile apps or wearables — but they are a determining factor in digital success. Our study showed clear differences in success between those that invested big in systems of record and those that didn't. Digital leaders should refuse to let archaic, slow-to-change systems in the core hold them back, and they must invest to replace and upgrade these systems with modern applications and architectures that enable ongoing business agility.



**Use cloud in the core.** Cloud models provide the right foundation to keep up with the fast pace of digital business. In this study, we saw a 10-percentage point difference between modernization leaders and laggards in terms of their propensity to move the core to the cloud. The cloud lets you take advantage of frequent, automatic updates, which means fast access to vendor-supplied innovation. Cloud also provides a more agile, flexible model, which is necessary for digital business. And cloud models empower business users and enable more self-service, which are also desirable traits because they let the business operate in a nimbler way.



**Invest in modern development approaches for long-term success.** Digital business requires ongoing business agility — and that means that development approaches must be flexible and fast. Modernization must be agile and nimble — for the long haul. Specific development areas to focus on include adopting DevOps, improving APIs, and creating microservices architectures.



**Co-innovate with partners.** In our study, we found that modernization leaders work with partners at more than double the rate of modernization laggards. Leading digital firms also think differently about how to work with partners, such as using digital studios, crowdsourcing, and using design thinking. To get the most value out of strategic partners, allow them to bring in ideas rather than prescribing work to them. And consider outcome-based engagement models that create a win-win, skin-in-the-game payment structure tied to your digital business goals.

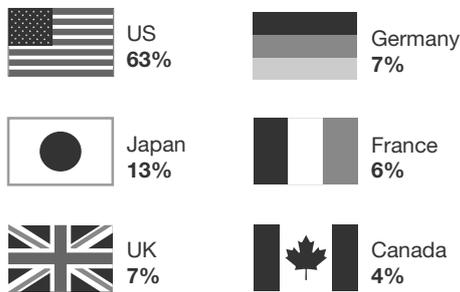
Following these recommendations can help organizations put customers first and contribute to success in their digital transformation.

## Appendix A: Methodology

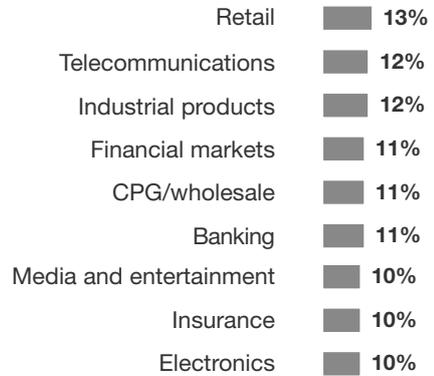
In this study, Forrester conducted an online survey of 475 business and IT leaders in banking, CPG (consumer packaged goods)/wholesale, electronics, financial markets (securities and investments), industrial products, insurance, media/entertainment, retail, and telecom organizations in the US, Japan, the UK, Germany, France, and Canada to evaluate their approach to digital transformation and the priority they are placing on modernizing systems of record. Survey participants included directors, vice presidents, and C-level executives with responsibility, or influence over, their organization’s digital transformation strategy. To qualify, respondents had to come from companies with 1,000 or more employees that are spending at least \$1 million on digital transformation initiatives. Questions provided to the participants asked about digital transformation investments and objectives, the priority they’re placing on various initiatives as part of their digital transformation efforts, and the results they have realized. Responses were weighted on a country-level basis based on each country’s projected share of market according to Forrester’s Global Technology Spending Forecast for 2018. Respondents were offered a small incentive as a thank you for time spent on the survey. The survey fielding began in August 2017 and was completed in September 2017.

## Appendix B: Firmographics

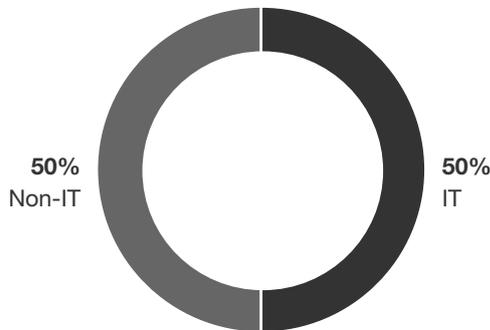
“In which country are you located?”



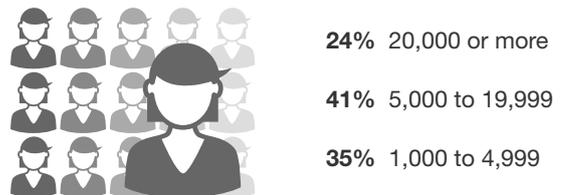
“Which of the following best describes the industry to which your company belongs?”



“Which of the following best describes your current position/department?”



“Using your best estimate, how many employees work for your firm/organization worldwide?”



Base: 475 global professionals with responsibility or influence over their organization’s digital transformation strategy  
Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, September 2017

# Appendix C: Supplemental Material

## RELATED FORRESTER RESEARCH

“Learn To Innovate From Digital Transformation Leaders,” Forrester Research, Inc., June 22, 2017.

“Your Digital Transformation Is Not Bold Enough — Five Signs Of Trouble And Key Fixes,” Forrester Research, Inc., May 9, 2017.

“Unleash Your Digital Predator,” Forrester Research, Inc., March 8, 2017.

“Digital Turns Technology Services On Its Head,” Forrester Research, Inc., February 25, 2016.

“Predictions 2017: In Digital Transformation, The Hard Work Of Operational Excellence Begins,” Forrester Research, Inc., November 1, 2016.

“Digital Innovation Reshapes The Future Of Business Applications,” Forrester Research, Inc., September 8, 2016.

## Appendix D: Endnotes

<sup>1</sup> Source: “The US Customer Experience Index, 2017,” Forrester Research, Inc., August 1, 2017.

<sup>2</sup> Source: “Unleash Your Digital Predator,” Forrester Research, Inc., March 8, 2017.

<sup>3</sup> Source: “Digital Turns Technology Services On Its Head,” Forrester Research, Inc., February 25, 2016.

<sup>4</sup> Source: “Build Your Digital Transformation Business Case Around The Customer And Revenue Growth,” Forrester Research, Inc., February 22, 2017.

<sup>5</sup> Source: “Brief: Systems Of Engagement Take Center Stage,” Forrester Research, Inc., May 16, 2014.

<sup>6</sup> Source: “The New Generation Of Embedded BI Will Close The Insights-To-Action Gap,” Forrester Research, Inc., April 11, 2017.

<sup>7</sup> Source: “Brief: Systems Of Engagement Take Center Stage,” Forrester Research, Inc., May 16, 2014.

<sup>8</sup> Source: “Brief: Systems Of Engagement Take Center Stage,” Forrester Research, Inc., May 16, 2014.

<sup>9</sup> Source: “Unleash Your Digital Predator,” Forrester Research, Inc., March 8, 2017.

<sup>10</sup> Source: “Predictions 2017: In Digital Transformation, The Hard Work Of Operational Excellence Begins,” Forrester Research, Inc., November 1, 2016.

<sup>11</sup> Source: “The Global Tech Market Outlook For 2017 to 2018,” Forrester Research, Inc., January 9, 2017.

<sup>12</sup> Source: “Your Digital Transformation Is Not Bold Enough — Five Signs Of Trouble And Key Fixes,” Forrester Research, Inc., May 9, 2017.

<sup>13</sup> Source: “Digital Innovation Reshapes The Future Of Business Applications,” Forrester Research, Inc., September 8, 2016.

<sup>14</sup> Source: “Learn To Innovate From Digital Transformation Leaders,” Forrester Research, Inc., June 22, 2017.

<sup>15</sup> Source: “Transforming Customer Experience Requires A Service Provider Ecosystem,” Forrester Research, Inc., March 11, 2016.

<sup>16</sup> Source: “Case Study: Logistics Firm Overhauls Systems Of Engagement And Record To Improve CX,” Forrester Research, Inc., July 21, 2016.