CONNECTING DIGITAL ISLANDS

Bridging the business transformation gap

2020 Enterprise Leadership Survey
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This year’s survey shows that while the leaders of today’s enterprises believe in the power of information technology to transform their organizations, many still face challenges with having the technology and culture in place for real change over the long term. There is a gap between the digital dream and the digital reality:

- 79% say they’re leveraging technology to become market leaders; however, a fairly large percentage — 66% — say their mission-critical systems are so complex they are wary of changing them. Further, 62% responded they lack a common set of tools and platforms across the organization. This creates digital islands: units working with the right technologies but independently of each other.

- 77% say the collection and use of data is now built into the way they innovate and compete, while 48% say their employees are becoming more analytical and making decisions based on data insights.

- 65% report that employee reluctance to change work habits is a barrier to technology-enabled organizational change, but only 14% rank improving employee engagement and empowerment as their No. 1 internal priority.

- 70% say more effective leadership is needed across the organization. This is a strong reminder that getting the right combination of people, culture and technology is essential for making effective, long-term change.

To close the gap, companies have to complete a lot of overdue homework — work that should have happened some time ago. This ranges from building effective leadership and internetworked teams, to modernizing IT and moving up the stack for data-driven insights, to establishing an ecosystem of partners and suppliers and instilling a culture of collaboration, learning and agility.

The survey report has six sections:
- The digital dividend looks at the strategic imperative for transformation and progress being made.
- The digital deficit lays bare the barriers — cultural, technological and market-oriented — that can derail transformation strategies and put organizations at risk.
- The digital future examines the emerging technologies, skills and culture needed to bridge the gap between the digital dream and the digital reality.
- The conclusion offers five priorities that organizations can begin acting on today.
- An appendix of charts contains the survey results.
- In executive insights industry leaders give firsthand accounts of their transformation progress — what’s working and how they are prioritizing.

Business transformation will gain momentum and become more successful as organizations create the internal conditions for change. The 2020s could be the decade in which the cultural, technological and market-oriented barriers finally come down. Let’s get going.

Dan Hushon
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Managing Director, Leading Edge Forum, and Vice President, DXC Technology
Executive summary

Although much has been written about digital transformation, businesses are finding that transformation is about more than just the application of technology or simply a drive to modernize the IT estate. It’s about a comprehensive business transformation, a whole new way of thinking, and everyone in the business has to be on board. It’s only through such a holistic business transformation that sustainable success and industry disruption are possible.

In this global survey of 1,186 executives, DXC Technology and Leading Edge Forum found that although leaders understand the benefits of transformation and are making progress, many continue to struggle with cultural, technological and market-oriented changes.

What’s working

Businesses are using new technologies to disrupt their industries and get ahead of the competition. They’re embracing technologies such as artificial intelligence (AI) and machine learning, and they’re seeing the benefits.

IT strategy is now an integral part of competitive strategy:
• 79% of executives say they’re leveraging technology to become market leaders.

Data is creating new revenue streams and helping to differentiate businesses:
• 77% say the collection and use of data is now built into the way they innovate and compete.

Organizations are investing in the tools and technologies for transformation:
• Just 6% say they need to play catch-up in digital IT to remain competitive.

New technologies are linked to brand equity and winning the talent war:
• 89% agree or strongly agree that being technically up-to-date is important for their brand and recruitment.
Executive summary (Cont.)

Challenges

Despite the progress, strategies can stall. Cultural, technological and market barriers make transformation difficult.

Low employee buy-in and engagement levels can hinder efforts; so can skills shortages:
- 65% agree or strongly agree that employee reluctance to change work habits is a barrier to technology-enabled organizational change, yet only 14% rank improving employee engagement and empowerment as their No. 1 internal priority.
- 62% say their organizations lack the necessary training and skills.

Cumbersome legacy systems continue to affect progress:
- 66% agree or strongly agree that their mission-critical systems are so complex they are wary of changing them.

Some business units are working in isolation as digital islands:
- 62% agree or strongly agree that they lack a common set of tools and platforms across the organization.

Organizations require the necessary leadership skills:
- 70% of respondents agree or strongly agree that more effective leadership across the organization is needed for successful digital transformation.

Competition from multiple sources is fierce:
- 64% cite challenges from platform giants (e.g., Amazon, Google, Alibaba, Apple and Facebook) as a top external challenge over the next 5 years; 59% cite new market entrants and startups.

Technology is part of the solution to today’s barriers — it helps meet the demand for continuous innovation, for example — but it is not a solution in its own right. For transformation to be successful, internal conditions and strategic goals need to be more closely aligned.
The digital dividend: Meeting business challenges through technology

What a difference a decade makes. From mobility to cloud to artificial intelligence (AI), the past 10 years have seen businesses make a fundamental shift in the way they acquire and use technology. What began with tentative steps — an app here, a cloud prototype there — has blossomed into full-scale adoption of advanced technologies such as virtual data centers, omnichannel integration throughout the supply chain and automated processes in every industry from manufacturing to robotic professional advisory services.

Much of the 2010 decade was about trial and error as companies experimented with different forms of infrastructure and unlocked data that had previously been isolated. They also moved much closer to customers, in the process becoming far more willing to accept innovation from the outside to help drive strategy inside the enterprise. Because of those investments and outside-in orientation, many companies have a much clearer sense of their information-driven direction. Among these leaders, there is no distinction between a company’s technology strategy and its business strategy.

But what will define the decade to come? Platforms will play a major role: platforms for reducing costs while improving scale, reliability and security, as well as platforms for rapidly entering new businesses and delivering innovative customer experiences. The other story line will be data: data for new customer insights plus data to fuel machine learning and power AI applications. Data will also play a key role in developing innovative new products and creating new customer experiences. And companies will spend more time answering concerns about data privacy and taking greater care to safeguard it.

Experimentation and exploration continue, and the occasional misstep still occurs. But the good news is that leaders are adapting to these challenges through the use of modern tools and technologies. These tools are now seen as core to competitive strategy; data assets are being mined for insights that lead to better, more customer-centric innovation.

Research methodology

An online survey of leaders was conducted in November 2019 in 18 countries: Australia, Brazil, Canada, China, France, Germany, India, Italy, Japan, Mexico, the Netherlands, Singapore, Spain, Sweden, Switzerland, the United Arab Emirates, the United Kingdom and the United States. The 1,186 respondents were CEOs (54%), CTOs (14%), CIOs (12%), COOs (7%), CFOs or equivalent (7%), VPs/directors (3%), CDOs (2%), CMOs (2%) and middle managers (<1%).* They represented the following industries: aerospace and defense; automotive; banking and capital markets; energy and utilities; healthcare and life sciences; insurance; manufacturing; media and telecommunications; retail; technology/IT; and travel, transportation and hospitality. The research was conducted for DXC Technology and Leading Edge Forum by Savanta, a London-based research firm.

* Percentages do not add to 100% due to rounding.
The next decade will present companies with an opportunity to reap a greater share of dividends from their digital investments and more chances to capitalize on the data they’ve worked so hard to collect and curate:

- 79% of leaders overall say they seek to leverage digital technologies to be market leaders.
- 77% say the collection and use of data is now built into the way they innovate and compete.

**Figure 1: Which of the following best describes your organization’s current digital strategy?**

- 79%: We seek to leverage digital technologies to be a market leader
- 15%: We need to be competitive with digital technologies, but they are not our key differentiator
- 6%: We need to catch up in digital technology to remain competitive in our industry
- <1%: We don’t rely heavily on digital technology

**Figure 2: Which of the following statements best describes your firm’s use of data and analytics?**

- 77%: The collection and use of digital data is now built into the way we innovate and compete
- 22%: Digital data and analytics are having a useful but not fundamental impact on our organization
- 1%: We don’t believe we are taking sufficient advantage of the data we have
- <1%: We don’t rely heavily on digital technology
New technology is not only driving innovation and creating new revenue streams, it’s enhancing reputations:

• 89% of leaders report that being technically up-to-date is important for their brand and recruitment.

In today’s high-pressure environment, where competitors can come from anywhere — from multiple countries and sectors — leaders are focused on continuous improvement and innovation:

• 57% say improving the customer journey and experience is one of their top three competitive strategies.
• 55% say developing smart products and services is in their top three.
• 55% rank becoming more innovative and willing to take more risks in their top three.

Moreover, technology is helping them implement these competitive strategies. Most have already made significant investments. In fact, only a small minority seem to be behind the curve:

• Just 6%, rising to 11% in healthcare and life sciences but falling to 2% in retail, say they’re having to play catch-up in digital technology to stay competitive.

The positives, though, are only part of the picture. In many cases, more needs to be done before true transformation can take place.
The digital deficit: Barriers to transformation

Cultural hurdles such as lack of effective leadership skills in organizations and employee resistance to change create barriers to transformation; so do legacy IT systems and digital islands, business units that work effectively but independently of each other.

Challenges are limiting return on investment (ROI) in new IT and preventing successful business transformation. They can be divided into cultural, technological and market barriers.

Cultural barriers

According to respondents, one challenge to technology-enabled change is the need for more effective leadership across the organization. In some cases leaders may have questions about modernization, such as where to start and how to do safe, large-scale change rapidly. Or, they may have heard many times how new rivals are destined to fundamentally disrupt their industry. These are reasonable concerns that contribute to sluggishness in some companies. But leadership isn’t wholly to blame. Employee resistance to change, time pressures and general skills shortages also affect progress:

• 70% of respondents agree or strongly agree that the need for more effective leadership across the organization is creating a barrier to technology-enabled organizational change.
• 65% agree or strongly agree that employees are reluctant to change their current work habits.
• 65% agree or strongly agree that their people are just too busy with their current workloads.
• 62% agree or strongly agree that their organizations lack the necessary training and skills.

Figure 4: Many organizations are finding digital transformation difficult. Please rate the following barriers to technology-enabled organizational change.
Cultural barriers like these suggest the full potential of new technologies has yet to be realized. Leaders indicate that organizations are not making full use of the technology available to them. This presents a large opportunity gap to be filled:

- 48% say their employees are becoming more analytical and making decisions based on data insights.
- 42% say there is greater collaboration from technology.
- 39% say there is greater transparency from technology.
- 38% say technology is allowing their staff to work more remotely and flexibly.
- 31% say technology has made their organizations more decentralized and less hierarchical.

Figure 5: How is technology changing your organizational culture? (Select the three options most applicable.)

<table>
<thead>
<tr>
<th>Change in Organizational Culture</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Our staff is becoming more analytical, making decisions based on data insights</td>
<td>48%</td>
</tr>
<tr>
<td>We are automating repetitive tasks to free up employees to do higher-value work</td>
<td>45%</td>
</tr>
<tr>
<td>There is greater collaboration across the business</td>
<td>42%</td>
</tr>
<tr>
<td>There is greater transparency across the business</td>
<td>39%</td>
</tr>
<tr>
<td>Our staff now works more remotely and flexibly</td>
<td>38%</td>
</tr>
<tr>
<td>Our organization is more decentralized and less hierarchical</td>
<td>31%</td>
</tr>
<tr>
<td>Actual cultural change has been modest so far</td>
<td>27%</td>
</tr>
</tbody>
</table>

One of the biggest challenges in the workplace is low levels of employee engagement — and it’s not being adequately addressed. While nearly two-thirds (65%) of leaders say employee reluctance to change work habits is a barrier to technology-enabled organizational change, only 14% rank improving employee engagement and empowerment as their number one internal priority, and less than half (46%) say it’s in their top three. Without employee buy-in, organizational change is difficult.
Technological barriers

Often, a wholesale review of IT systems and architecture needs to take place before implementation of a transformation strategy can begin. In some organizations, the technological environment is inhospitable to change:

- 76% of respondents agree or strongly agree they have a lot of older systems that need to be modernized, with the percentages particularly high in the energy and utilities (82%), insurance (86%), and aerospace and defense (89%) sectors.

- 66% agree or strongly agree that their mission-critical systems are so complex that they are wary of changing them, falling to 55% in manufacturing but rising to 78% in energy and utilities businesses.

- 62% of leaders agree or strongly agree that lack of a common set of tools and platforms is a barrier to technology-enabled organizational change.

Often, new technologies are introduced to meet the needs of a specific business unit rather than as part of an overarching strategy. This results in localized units or digital islands, operating well but independently of one another. When there are digital islands, the benefits of new technology are not always shared across the organization.

Market barriers

When asked to select the top three external challenges that will disrupt their organization over the next 5 years, respondents indicated that their top concerns relate to new forms of competition.

Platform businesses are a competitive vector that may represent the most significant challenge. Platforms may be the ultimate digital business, creating value by connecting two or more independent groups, often customers and businesses. They are systemically important to society, increasingly considered the sixth “utility” after water, electricity, gas, transportation and telecommunications.

Every sector has felt the impact of these new digital-first platform organizations, whether by joining one of their ecosystems as a producer, consuming one of their services or competing directly. But these same platforms may also create an opportunity for traditional, digital-second organizations (those whose genesis is in the physical goods and services world) in every sector. They, too, can benefit by finding a way to become a platform organization.
Figure 6: From the following list, select the top three external challenges most likely to disrupt your organization over the next 5 years.

- Challenges from consumer giants such as Amazon, Google, Alibaba, Apple and Facebook: 64%
- Privacy, GDPR, antitrust or other regulatory interventions: 63%
- Global competition: 62%
- New market entrants and start-ups: 59%
- Climate change or other environmental pressures: 51%
- Other: <1%
The digital future: Technology that transforms

Leaders’ confidence in the power of digital technology to add value to their organizations is growing. The challenge now is to bridge the gap between strategy and implementation, and overcome the barriers to change.

The future of enterprises is closely linked to the future of technology. In their quest to be market leaders, organizations are focusing on modernizing IT in several key ways. Respondents continue to identify moving to cloud computing and software as a service as a top priority. This is in keeping with their desire to increase operational efficiency and productivity. Leveraging data is also important. Many companies have flagged analytics and machine intelligence as areas for investment. And underscoring it all is a commitment to improving cyber security and IP protection, one of the top three internal priorities for a majority of companies.

Figure 7: Which of the following internal initiatives is your organization most focused on right now? (Select the top 3 in order of importance.)

<table>
<thead>
<tr>
<th>Initiative</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improving cyber security and IP protection</td>
<td>53%</td>
</tr>
<tr>
<td>Leveraging analytics and machine intelligence for actionable insights</td>
<td>53%</td>
</tr>
<tr>
<td>Increasing operational efficiency and productivity</td>
<td>52%</td>
</tr>
<tr>
<td>Moving to cloud computing and software as a service</td>
<td>51%</td>
</tr>
<tr>
<td>Enhancing employee engagement and empowerment</td>
<td>46%</td>
</tr>
<tr>
<td>Becoming more environmentally sustainable and energy efficient</td>
<td>45%</td>
</tr>
</tbody>
</table>

In addition, organizations are seeing the transformative potential of emerging technologies. High-speed 5G networks, a foundational technology, are ranked first for high-potential emerging technologies. 5G’s high data rates will enable another class of technologies, such as virtual and augmented reality that will transform the ability of companies to use remote experts to guide in-field personnel. 5G will be instrumental in creating a mesh of connectivity for devices that are part of the internet of things (IoT) and autonomous vehicles.
AI and machine learning will permeate data-intensive industries like insurance and finance, managing processes such as claims processing. Chatbots and virtual agents can be expected to appear in advanced applications, such as issuing financial advice. And companies can expect many more applications to be accessed through voice-driven personas like Apple’s Siri or Amazon’s Alexa.

Underlying many of these advances is blockchain technology. More than ever, companies will depend on distributed ledgers to collect and secure transactional data — and that’s “transactional” being used in its broadest sense, not just financial.

**Figure 8: Please rate the following emerging technologies in terms of their potential value to your organization. [Responses below are for “high potential.” *]**

- **High-speed 5G networks**: 60%
- **AI and machine learning**: 59%
- **Sensors and the internet of things**: 55%
- **Robots and robotic process automation**: 54%
- **Virtual and augmented reality**: 53%
- **Voice interfaces such as Alexa, Siri and Google Assist**: 52%
- **Blockchain and shared ledgers**: 52%
- **Chatbots and virtual agents**: 51%
- **Facial and image recognition**: 51%
- **Autonomous vehicles and systems**: 50%

* For each technology, respondents selected one of five ratings: high potential, medium potential, low potential, no potential and don’t know.
Conclusion: Creating conditions for change

Business transformation will gain momentum and become more successful as organizations create conditions for change. The 2020s could be the decade in which the cultural, technological and market barriers finally come down.

The following five steps can help organizations align their strategic, operational and technological goals.

1. **Develop 21st-century executives, leaders and employees.** Both C-level leaders and midlevel managers need to be tech-savvy — and need the skills to lead people effectively. These leaders will advocate for technologies that can make the enterprise more agile, productive and innovative, and they will secure buy-in across the organization. The ability to create high-performing, interconnected teams of employees with diverse and complementary skills is just as important — such teams can unlock the organization’s full potential.

2. **Review team performance and make sure skills and experience circulate.** Team reviews will help identify the strengths and weaknesses of individuals and enable resources to be deployed more efficiently and effectively. The remixing of teams — at both junior and more senior levels — will help strengthen the aggregate level of skills in the organization, cut across silos and spread knowledge.

3. **Build a modern technical foundation, and especially a modern data foundation.** Finding a path to modern infrastructures, freeing themselves from proprietary solutions and collecting data in ways that make it more available to AI-enabled applications are priorities for organizations in the 2020s. As companies move up the technology stack from cloud, security and applications to data and analytics, they will be able to harness data flows to drive new products, services, customer experiences and operational efficiencies.

4. **Embrace a strategic set of ecosystem partners and suppliers.** In a platform economy, there’s simply no reason for enterprises to go it alone. And, in fact, they can’t. Companies — in all industries — will grow stronger and faster, and develop greater resilience, when they build a set of strategic partners and suppliers who can help them identify and respond to market changes faster and with greater differentiation. These partner and supplier ecosystems will create data exchanges — with proper controls — to meet business goals previously unachievable.

5. **Plan to change course often and in midflight.** If the last 10 years have taught us anything, it’s that our future can change overnight with the introduction of a single technology or tool. The impact of smartphones alone alerts us to the fact that out there, somewhere, a new idea is brewing that will change the way we do business and serve customers. In this environment, it’s vital to have the confidence to be flexible and dynamic, to experiment, to “fail fast” and learn.

Competitive threats mean the need for business transformation is becoming more urgent. Time and again, though, strategic change efforts flounder. The steps outlined above can help provide a unifying vision, employee buy-in and the required IT architecture to make a real difference to the future of organizations.
Appendix
Q1. In which country are you physically located?

- United States: 13%
- China: 9%
- United Kingdom: 9%
- France: 7%
- Germany: 7%
- Singapore: 6%
- Spain: 6%
- Italy: 6%
- India: 6%
- Canada: 5%
- Australia: 5%
- Brazil: 4%
- Mexico: 3%
- Netherlands: 3%
- Sweden: 3%
- United Arab Emirates: 3%
- Japan: 3%
- Switzerland: 3%
- None of these: 0%

Percentages may not add to 100% due to rounding or the ability of respondents to choose multiple responses.

Q2. What is your organization’s primary industry?

- Technology/IT: 26%
- Retail: 11%
- Banking & Capital Markets: 11%
- Media & Telecommunications: 11%
- Manufacturing: 10%
- Healthcare & Life Sciences: 7%
- Automotive: 6%
- Insurance: 5%
- Energy & Utilities: 5%
- Travel, Transportation & Hospitality: 5%
- Aerospace & Defense: 3%
- Public Sector: 1%
- Other: 2%

Q3a. What is your organization’s annual global revenue in U.S. dollars?

- US$500 million to less than US$1 billion: 43%
- US$1 billion to less than US$5 billion: 32%
- US$5 billion or more: 25%

Q3b. Approximately how many employees work for the organization you are working for?

- 500 - 1,000: 30%
- 1,001 - 5,000: 37%
- > 5,000: 33%

Q4. Which of the following best describes your title?

- CEO: 84%
- CTO: 19%
- CIO: 12%
- COO: 7%
- CFO or equivalent: 7%
- VP/ Director: 3%
- CDO: 2%
- CMO: 2%
- Middle management: <1%
**Q5. Which of the following best describes your organization’s current digital strategy?**

- **We seek to leverage digital technologies to be a market leader.**
- **We need to be competitive with digital technologies, but they are not our key differentiator.**
- **We need to catch up in digital technology to remain competitive in our industry.**

**Q5a. Industry breakdown of those who responded in Q5:**

```
<table>
<thead>
<tr>
<th>Industry</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerospace &amp; Defense</td>
<td>89%</td>
</tr>
<tr>
<td>Automotive</td>
<td>76%</td>
</tr>
<tr>
<td>Banking &amp; Capital Markets</td>
<td>86%</td>
</tr>
<tr>
<td>Energy &amp; Utilities</td>
<td>87%</td>
</tr>
<tr>
<td>Healthcare &amp; Life Sciences</td>
<td>68%</td>
</tr>
<tr>
<td>Insurance</td>
<td>85%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>80%</td>
</tr>
<tr>
<td>Media &amp; Telecommunications</td>
<td>69%</td>
</tr>
<tr>
<td>Public Sector</td>
<td>76%</td>
</tr>
<tr>
<td>Retail</td>
<td>82%</td>
</tr>
<tr>
<td>Technology/IT</td>
<td>82%</td>
</tr>
<tr>
<td>Travel, Transportation &amp; Hospitality</td>
<td>65%</td>
</tr>
<tr>
<td>Other</td>
<td>70%</td>
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**Q5b. Industry breakdown of those who responded in Q5:**

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<thead>
<tr>
<th>Industry</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerospace &amp; Defense</td>
<td>8%</td>
</tr>
<tr>
<td>Automotive</td>
<td>13%</td>
</tr>
<tr>
<td>Banking &amp; Capital Markets</td>
<td>7%</td>
</tr>
<tr>
<td>Energy &amp; Utilities</td>
<td>5%</td>
</tr>
<tr>
<td>Healthcare &amp; Life Sciences</td>
<td>20%</td>
</tr>
<tr>
<td>Insurance</td>
<td>12%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>9%</td>
</tr>
<tr>
<td>Media &amp; Telecommunications</td>
<td>26%</td>
</tr>
<tr>
<td>Public Sector</td>
<td>19%</td>
</tr>
<tr>
<td>Retail</td>
<td>16%</td>
</tr>
<tr>
<td>Technology/IT</td>
<td>16%</td>
</tr>
<tr>
<td>Travel, Transportation &amp; Hospitality</td>
<td>19%</td>
</tr>
<tr>
<td>Other</td>
<td>10%</td>
</tr>
</tbody>
</table>
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**Q5c. Industry breakdown of those who responded in Q5:**

```
<table>
<thead>
<tr>
<th>Industry</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerospace &amp; Defense</td>
<td>3%</td>
</tr>
<tr>
<td>Automotive</td>
<td>11%</td>
</tr>
<tr>
<td>Banking &amp; Capital Markets</td>
<td>5%</td>
</tr>
<tr>
<td>Energy &amp; Utilities</td>
<td>7%</td>
</tr>
<tr>
<td>Healthcare &amp; Life Sciences</td>
<td>11%</td>
</tr>
<tr>
<td>Insurance</td>
<td>3%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>11%</td>
</tr>
<tr>
<td>Media &amp; Telecommunications</td>
<td>5%</td>
</tr>
<tr>
<td>Public Sector</td>
<td>6%</td>
</tr>
<tr>
<td>Retail</td>
<td>2%</td>
</tr>
<tr>
<td>Technology/IT</td>
<td>3%</td>
</tr>
<tr>
<td>Travel, Transportation &amp; Hospitality</td>
<td>17%</td>
</tr>
<tr>
<td>Other</td>
<td>20%</td>
</tr>
</tbody>
</table>

*“Industry breakdown” refers to the percent in an industry sector who responded to the question.*
Q6. Which of the following competitive strategies is your organization most focused on right now? (Select the top 3 in order of importance.)

- Improving the customer journey and experience: 57%
- Developing smart products and services: 55%
- Becoming more innovative and willing to take more risks: 56%
- Creating significant new revenue streams: 49%
- Assuring customer privacy and trust: 48%
- Pursuing mergers, acquisitions, and alliances: 36%

Q6a. Which of the following competitive strategies is your organization most focused on right now? [Rated as the top 1.]

- Improving the customer journey and experience: 21%
- Developing smart products and services: 20%
- Becoming more innovative and willing to take more risks: 19%
- Creating significant new revenue streams: 15%
- Assuring customer privacy and trust: 13%
- Pursuing mergers, acquisitions, and alliances: 12%

Q7. Which of the following internal initiatives is your organization most focused on right now? (Select the top 3 in order of importance.)

- Improving cyber security and IP protection: 53%
- Leveraging analytics and machine intelligence for actionable insights: 53%
- Increasing operational efficiency and productivity: 52%
- Moving to cloud computing and software as a service: 51%
- Enhancing employee engagement and empowerment: 46%
- Becoming more environmentally sustainable and energy efficient: 45%

Q7a. Which of the following internal initiatives is your organization most focused on right now? [Rated as the top 1.]

- Moving to cloud computing and software as a service: 19%
- Improving cyber security and IP protection: 19%
- Increasing operational efficiency and productivity: 18%
- Leveraging analytics and machine intelligence for actionable insights: 17%
- Enhancing employee engagement and empowerment: 14%
- Becoming more environmentally sustainable and energy efficient: 9%
Q8. From the following list, select the top three external challenges most likely to disrupt your organization over the next 5 years.

<table>
<thead>
<tr>
<th>Challenges from consumer giants such as Amazon, Google, Alibaba, Apple and Facebook</th>
<th>Privacy, GDPR, antitrust or other regulatory interventions</th>
<th>Global competition</th>
<th>New market entrants and start-ups</th>
<th>Climate change or other environmental pressures</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>64%</td>
<td>63%</td>
<td>62%</td>
<td>59%</td>
<td>61%</td>
<td>&lt;1%</td>
</tr>
</tbody>
</table>

Q8a. Industry breakdown of responses to Q8: From the following list, select the top three external challenges most likely to disrupt your organization over the next 5 years.

<table>
<thead>
<tr>
<th>Industry</th>
<th>Challenges from consumer giants e.g., Amazon, Google, Alibaba, Apple and Facebook</th>
<th>Privacy, GDPR, antitrust or other regulatory interventions</th>
<th>Global competition</th>
<th>New market entrants &amp; start-ups</th>
<th>Climate change or other environmental pressures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology/IT</td>
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<td>64%</td>
<td>63%</td>
<td>62%</td>
<td>49%</td>
</tr>
<tr>
<td>Retail</td>
<td>75%</td>
<td>63%</td>
<td>62%</td>
<td>55%</td>
<td>45%</td>
</tr>
<tr>
<td>Banking &amp; Capital Markets</td>
<td>70%</td>
<td>63%</td>
<td>59%</td>
<td>58%</td>
<td>48%</td>
</tr>
<tr>
<td>Media &amp; Telecommunications</td>
<td>64%</td>
<td>64%</td>
<td>56%</td>
<td>58%</td>
<td>58%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>63%</td>
<td>63%</td>
<td>65%</td>
<td>56%</td>
<td>52%</td>
</tr>
<tr>
<td>Healthcare &amp; Life Sciences</td>
<td>62%</td>
<td>71%</td>
<td>59%</td>
<td>57%</td>
<td>51%</td>
</tr>
<tr>
<td>Automotive</td>
<td>69%</td>
<td>52%</td>
<td>61%</td>
<td>61%</td>
<td>57%</td>
</tr>
<tr>
<td>Insurance</td>
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<td>63%</td>
<td>71%</td>
<td>47%</td>
</tr>
<tr>
<td>Energy &amp; Utilities</td>
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<td>60%</td>
<td>55%</td>
</tr>
<tr>
<td>Travel, Transportation &amp; Hospitality</td>
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<td>67%</td>
<td>65%</td>
<td>56%</td>
<td>52%</td>
</tr>
<tr>
<td>Aerospace &amp; Defense</td>
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<td>44%</td>
<td>78%</td>
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<td>69%</td>
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<tr>
<td>Public Sector</td>
<td>38%</td>
<td>56%</td>
<td>88%</td>
<td>44%</td>
<td>75%</td>
</tr>
<tr>
<td>Other</td>
<td>65%</td>
<td>50%</td>
<td>75%</td>
<td>60%</td>
<td>50%</td>
</tr>
</tbody>
</table>
Q8b. And which of the three challenges [from the ones selected in Q8] is most likely to disrupt your organization over the next 5 years?

<table>
<thead>
<tr>
<th>Challenges from consumer giants such as Amazon, Google, Alibaba, Apple and Facebook</th>
<th>Privacy, GDPR, antitrust or other regulatory interventions</th>
<th>Global competition</th>
<th>New market entrants and start-ups</th>
<th>Climate change or other environmental pressures</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>27%</td>
<td>24%</td>
<td>19%</td>
<td>16%</td>
<td>14%</td>
<td>&lt;1%</td>
</tr>
</tbody>
</table>

Q9. Please rate the following emerging technologies in terms of their potential value to your organization. [Responses below are for “high potential.”*]

- High-speed 5G networks: 60%
- AI and machine learning: 59%
- Sensors and the internet of things: 55%
- Robots and robotic process automation: 54%
- Virtual and augmented reality: 53%
- Voice interfaces such as Alexa, Siri and Google Assist: 52%
- Blockchain and shared ledgers: 52%
- Chatbots and virtual agents: 51%
- Facial and image recognition: 51%
- Autonomous vehicles and systems: 50%

* For each technology, respondents selected one of five ratings: high potential, medium potential, low potential, no potential and don’t know.
Q10. To what extent do you agree with each of the following statements regarding your organization’s overall technology environment?

- We have a lot of older systems that urgently need to be modernized
- Our employees find our internal systems effective and easy to use
- Our internal IT organization is seen as modern and responsive
- Being technically up-to-date is important for our brand and recruitment
- We believe our internal systems are as good or better than our key competitors

Q10a. Industry breakdown of those who responded in Q10: We have a lot of older systems that urgently need to be modernized.

<table>
<thead>
<tr>
<th>Industry</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neither agree nor disagree</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerospace &amp; Defense</td>
<td>61%</td>
<td>28%</td>
<td>3%</td>
<td>6%</td>
<td>3%</td>
</tr>
<tr>
<td>Automotive</td>
<td>41%</td>
<td>39%</td>
<td>13%</td>
<td>3%</td>
<td>3%</td>
</tr>
<tr>
<td>Banking &amp; Capital Markets</td>
<td>40%</td>
<td>26%</td>
<td>14%</td>
<td>15%</td>
<td>5%</td>
</tr>
<tr>
<td>Energy &amp; Utilities</td>
<td>40%</td>
<td>42%</td>
<td>11%</td>
<td>5%</td>
<td>2%</td>
</tr>
<tr>
<td>Healthcare &amp; Life Sciences</td>
<td>29%</td>
<td>41%</td>
<td>16%</td>
<td>14%</td>
<td>0%</td>
</tr>
<tr>
<td>Insurance</td>
<td>49%</td>
<td>37%</td>
<td>8%</td>
<td>2%</td>
<td>3%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>43%</td>
<td>35%</td>
<td>15%</td>
<td>4%</td>
<td>3%</td>
</tr>
<tr>
<td>Media &amp; Telecommunications</td>
<td>27%</td>
<td>41%</td>
<td>26%</td>
<td>6%</td>
<td>0%</td>
</tr>
<tr>
<td>Public Sector</td>
<td>25%</td>
<td>31%</td>
<td>25%</td>
<td>19%</td>
<td>0%</td>
</tr>
<tr>
<td>Retail</td>
<td>41%</td>
<td>33%</td>
<td>10%</td>
<td>10%</td>
<td>5%</td>
</tr>
<tr>
<td>Technology/IT</td>
<td>51%</td>
<td>30%</td>
<td>10%</td>
<td>7%</td>
<td>3%</td>
</tr>
<tr>
<td>Travel, Transportation &amp; Hospitality</td>
<td>37%</td>
<td>41%</td>
<td>11%</td>
<td>9%</td>
<td>2%</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>45%</td>
<td>20%</td>
<td>0%</td>
<td>35%</td>
<td>0%</td>
</tr>
</tbody>
</table>
Q11. Which of the following statements best describes your firm’s use of data and analytics?

- **77%**: The collection and use of digital data is now built into the way we innovate and compete.
- **22%**: Digital data and analytics are having a useful but not fundamental impact on our organization.
- **1%**: We don’t believe we are taking sufficient advantage of the data we have.

Q11a. Industry breakdown of those who responded in Q11: The collection and use of digital data is now built into the way we innovate and compete.

<table>
<thead>
<tr>
<th>Industry</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
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</tr>
<tr>
<td>Automotive</td>
<td>72%</td>
</tr>
<tr>
<td>Banking &amp; Capital Markets</td>
<td>82%</td>
</tr>
<tr>
<td>Energy &amp; Utilities</td>
<td>82%</td>
</tr>
<tr>
<td>Healthcare &amp; Life Sciences</td>
<td>68%</td>
</tr>
<tr>
<td>Insurance</td>
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</tr>
<tr>
<td>Manufacturing</td>
<td>79%</td>
</tr>
<tr>
<td>Media &amp; Telecommunications</td>
<td>66%</td>
</tr>
<tr>
<td>Public Sector</td>
<td>76%</td>
</tr>
<tr>
<td>Retail</td>
<td>76%</td>
</tr>
<tr>
<td>Technology/IT</td>
<td>80%</td>
</tr>
<tr>
<td>Travel, Transportation &amp; Hospitality</td>
<td>69%</td>
</tr>
</tbody>
</table>
Q12. How is technology changing your organizational culture? (Select the three options most applicable.)

<table>
<thead>
<tr>
<th>Option</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Our staff is becoming more analytical, making decisions based on data insights</td>
<td>48%</td>
</tr>
<tr>
<td>We are automating repetitive tasks to free up employees to do higher-value work</td>
<td>45%</td>
</tr>
<tr>
<td>There is greater collaboration across the business</td>
<td>42%</td>
</tr>
<tr>
<td>There is greater transparency across the business</td>
<td>39%</td>
</tr>
<tr>
<td>Our staff now works more remotely and flexibly</td>
<td>38%</td>
</tr>
<tr>
<td>Our organization is more decentralized and less hierarchical</td>
<td>31%</td>
</tr>
<tr>
<td>Actual cultural change has been modest so far</td>
<td>27%</td>
</tr>
</tbody>
</table>

Q13. Which of the following best describes your organization’s experience with business process automation?

- We successfully automate routine work in order to free up our people for other tasks: 71%
- We see process automation as primarily a means of reducing errors and cutting costs: 26%
- We are finding it difficult to automate processes much more than they already are: 2%
Q14. Many organizations are finding digital transformation difficult. Please rate the following barriers to technology-enabled organizational change.

- Our people are just too busy with their current workloads
- The short-term return on investment is often insufficient
- Our mission-critical systems are so complex that we are wary of changing them
- We lack a common set of tools and platforms across the organization
- We lack the necessary skills and training
- Employees are reluctant to change their current work habits
- We need more effective leadership across the organization

Q14a. Industry breakdown of those who responded in Q14: Our mission-critical systems are so complex that we are wary of changing them.

<table>
<thead>
<tr>
<th>Industry</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neither agree nor disagree</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerospace &amp; Defense</td>
<td>36%</td>
<td>33%</td>
<td>8%</td>
<td>11%</td>
<td>11%</td>
</tr>
<tr>
<td>Automotive</td>
<td>33%</td>
<td>33%</td>
<td>11%</td>
<td>20%</td>
<td>3%</td>
</tr>
<tr>
<td>Banking &amp; Capital Markets</td>
<td>34%</td>
<td>24%</td>
<td>15%</td>
<td>16%</td>
<td>10%</td>
</tr>
<tr>
<td>Energy &amp; Utilities</td>
<td>36%</td>
<td>42%</td>
<td>13%</td>
<td>4%</td>
<td>5%</td>
</tr>
<tr>
<td>Healthcare &amp; Life Sciences</td>
<td>22%</td>
<td>39%</td>
<td>15%</td>
<td>18%</td>
<td>6%</td>
</tr>
<tr>
<td>Insurance</td>
<td>29%</td>
<td>41%</td>
<td>15%</td>
<td>5%</td>
<td>10%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>24%</td>
<td>31%</td>
<td>16%</td>
<td>16%</td>
<td>13%</td>
</tr>
<tr>
<td>Media &amp; Telecommunications</td>
<td>30%</td>
<td>32%</td>
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<td>17%</td>
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<tr>
<td>Public Sector</td>
<td>25%</td>
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<tr>
<td>Retail</td>
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<td>11%</td>
</tr>
<tr>
<td>Technology/IT</td>
<td>45%</td>
<td>30%</td>
<td>10%</td>
<td>9%</td>
<td>6%</td>
</tr>
<tr>
<td>Travel, Transportation &amp; Hospitality</td>
<td>26%</td>
<td>41%</td>
<td>11%</td>
<td>17%</td>
<td>6%</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>15%</td>
<td>20%</td>
<td>15%</td>
<td>20%</td>
<td>30%</td>
</tr>
</tbody>
</table>
Q15. Compared with competitors, how would you rate your organization in each of the following areas?

- **Financial performance**
  - Far ahead of competitors: 41%
  - Ahead of competitors: 15%
  - Neither ahead nor behind competitors: 15%
  - Behind competitors: 3%
  - Far behind competitors: 3%

- **Degree of digital transformation**
  - Far ahead of competitors: 40%
  - Ahead of competitors: 15%
  - Neither ahead nor behind competitors: 15%
  - Behind competitors: 3%
  - Far behind competitors: 3%

- **Ability to meet our customers’ digital expectations**
  - Far ahead of competitors: 42%
  - Ahead of competitors: 4%
  - Neither ahead nor behind competitors: 14%
  - Behind competitors: 1%

- **Ability to make use of data to create business insights**
  - Far ahead of competitors: 43%
  - Ahead of competitors: 40%
  - Neither ahead nor behind competitors: 14%
  - Behind competitors: 2%
  - Far behind competitors: 1%
Executive insights
Raúl Rivero
CIO
Acciona
acciona.com

“We’re betting on hybridization to transform the way we do things.”

“Going green” isn’t just a good idea at Acciona, it’s a new way of doing business. The Madrid-based company has been carbon-neutral since 2016. Today, nearly 40 percent of Acciona’s revenue and 70 percent of its earnings are related to renewable energy, water and other environmental activities. This has earned the company the “greenest utility in the world” title for the last 5 years, as ranked by consultants Energy Intelligence.

Acciona is a global group that develops and manages sustainable infrastructure solutions, with particular focus on renewable energy. Its activity spans the entire value chain of design, construction, operations and maintenance. Acciona’s aim is to lead the transition toward a low-carbon economy by providing all projects with technical excellence and innovation to create a better planet. The company reached a sales revenue of €7.5 billion in 2018, is present in over 40 countries, boasts more than 38,000 employees and carries out its business activity with a commitment to contributing to the economic and social development of the communities it operates in. The Acciona group also contains other business divisions dedicated to real estate, asset management and wine production, as well as a company dedicated to museography and organizing large-scale events.

Raúl Rivero has been Acciona’s CIO since early 2018. Previously, he was the company’s director of IT architecture. Before that, Rivero held the position of digital development manager for the media group PRISA.

What are some of Acciona’s top priorities today?
Our goal at Acciona is to successfully respond to the planet’s biggest challenges, including global warming, overpopulation and water scarcity. Right now, we’re facing a crucial stage in the company’s trajectory, starting with three major digital transformation projects.

The first initiative focuses on our cloud strategy and operating model. We’re betting on hybridization to transform the way we do things. Second is our DevOps approach to streamline all projects and capture demand from the development and implementation side. This will give us a new agile working methodology. And the third big project is a major initiative focused on cyber security, which needs to be a fundamental pillar of any company exposed to the internet and the cloud. With this, we’re aiming to get as close as possible to a Zero Trust model.
Overall, is Acciona’s approach to IT centralized, decentralized or some combination of the two?
IT here is a cross-cutting function. Like our corporate organization, IT is divided into two major divisions: infrastructure and energy. We also have a smaller division to handle our other businesses. On top of that, we also have our international business lines, through which we are able to operate in over 40 countries.

Acciona’s business is diverse, so IT not only plays different roles but also faces different moments of maturity and specific challenges in each business or country. Each business develops differently, so it’s necessary to closely study their respective realities.

How does IT support Acciona’s green environmental efforts?
In several ways. We take our corporate carbon footprint very seriously and we’re working to reduce it dramatically. For example, we attach great importance to our cloud suppliers’ environmental footprint. Also, all our PCs have green policies, meaning they shut down at certain times to consume much less energy than they would if left running all the time.

Acciona operates a group, the Advanced and Digital Innovation Hub, to develop advanced technology projects. Can you tell us more about the Hub?
There are six technology areas that we want to focus on: 3D printing, mixed reality, internet of things (IoT), data science, robotics/artificial intelligence (AI) and blockchain.

For example, in printing, we’ve used a 3D printer to make bridges. In construction, we’re using virtual reality to intervene in projects where human action is impossible. We’re applying data science to motorcycle maintenance and servicing. We’re also testing robotics in the context of larger trucks with 5G-connected remote control in places that human drivers could find dangerous. Blockchain technology can help us to demonstrate that our energy is truly clean.

What are some of your biggest concerns and worries?
Cyber security worries me because it’s largely out of our control. Attacks now tend to be planned over a long time, and they can be a lot more sophisticated and dangerous.

We’re also concerned about recruiting and retaining talent. For IT, that’s a complicated issue. Attracting the right people can be challenging, in part because of how the company is perceived. Compared to, say, Google or Facebook, Acciona is not known for being very technologically sophisticated.

The goal is to make our work more digitized, more mobile. And to give our professionals the tools they need to reconcile more at work. This also fits in with our green strategy of reducing employee travel.

Your top priorities for the next 12 to 18 months?
One big project involves our transition towards a paperless model. Or, to be more accurate, paper-light. The goal is to make our work more digitized, more mobile. And to give our professionals the tools they need to have a balanced work-home life. This also fits in with our green strategy of reducing employee travel.

We also have started a project around jobs. It will transform how we face the challenge of the employee of the future. The project will be global, and we expect it to have a great impact on our users.
Jose Ferrari Careto  
Digital and IT Officer, and Head of the Digital Global Unit  
EDP  
edp.com

“How far along is EDP on its digital journey?
We started a project in late 2017, known internally as EDP-X, to foster the group’s digital adoption. We discussed this with all the business units, collected roadmaps and coordinated a digital strategy for the group. Then we defined three categories of enablers that we believe are fundamental to succeeding in this digital journey. First is what we call technological enablers — areas such as data lakes, cloud migration and APIs. Second, an ecosystem of partners. Right now we have around 40 partners in this digital area. And third, culture and people, as we need to increase our organization’s awareness of the opportunities that digital presents and to be aware that technology is useful provided that it is properly adopted by people.

An important part of our framework is a concept we call “Intelligent Power.” We’re working to increase intelligence in the systems we use to serve our customers, work with our collaborators, and manage our assets and operations. We need to leverage the opportunities we have using different digital tools and technologies.

EDP is moving aggressively into renewable and sustainable forms of energy. How does IT support this strategy?
In digital we are working directly with all business units, assisting them in implementing business roadmaps. For example, in the retail business, we helped create tools that assist consumers making the transition from traditional internal combustion cars and trucks to vehicles powered by electricity. We’re also working on digital tools to make it easier to charge these vehicles’ batteries in shared communities. And we are working with different business units in the implementation of data models. We are helping the human resources department and shared services to implement the right tools to improve EDP’s collaboration and productivity.

Founded in 1976, Energias de Portugal’s original mission was completely based on producing and distributing conventional electricity. Over the ensuing decades, EDP has greatly expanded its charter. Today, the company operates in 16 countries across four continents, serving electricity to 10 million customers and gas to another 1.2 million. To do this work, the company employs more than 12,000 people.

In addition, EDP is increasingly going green. The company now produces nearly 70 percent of its energy from renewable sources. And it’s been ranked the world’s fourth largest producer of wind-powered energy.

Jose Ferrari Careto has worked at EDP since 2012, mainly in marketing and sales. He assumed his current role in 2018.
We’re also preparing ourselves to compete with the energy industry’s digital natives. These companies can be extremely agile. So we’re trying to anticipate and even preempt their moves.

During 2019 we were dealing with about 150 MVPs. And by year’s end, nearly 80 of them were ready to be delivered to the business. We’ve developed this high-speed approach as a way to spur digital adoption by our business units.

Sounds as if the organization is also trying to become agile?
Yes. In fact, one area of focus for us is creating minimum viable products [MVPs, a basic concept of agile development]. In a sense, we’re acting as a digital factory that produces products for our business units. During 2019 we were dealing with about 150 MVPs. And by year’s end, nearly 80 of them were ready to be delivered to the business. We’ve developed this high-speed approach as a way to spur digital adoption by our business units.

We are also progressively adopting agile, assuring that all new collaborators in the Digital Global Unit have been trained in this methodology. Same goes for design thinking — that has become a very important tool for the success of digital within the group.

Some organizations feel tension between the drive for digital transformation on the one hand and the need to keep core IT systems running on the other. Is this an issue at EDP?
We anticipated that we could have had some initial friction between what we call core IT and digital. To deal with that, it was decided to put them together under the same department — the Digital Global Unit — and that has made the coordination much easier. We understand that digital and core IT run at different speeds, but they should be seen as complementary, and therefore they should run together. Otherwise, we’d be at a risk: Core IT could be left behind, or digital could move so fast, we’d lose perspective on cyber security, architecture and other important factors.

So, when we help the business units, we do so in both of these dimensions. For example, we’re talking with a major business unit about smart meters. Many of their questions have to do with gathering data and then dealing with huge data logs. I’d call that core IT. But at the same time, we’re helping them to use analytics to explore the data collected by the smart meters. So that’s digital.

For each of these two dimensions, we use different methodologies. For digital, we often use the MVP concept. These projects are relatively small and very focused. By contrast, for core IT, we support the business with what I’d call heavier tools, applications and infrastructure. However, we are using agile in both areas to assure that we can also go fast in core IT.

You haven’t mentioned cloud. But there’s probably a cloud somewhere.
Yes, and cloud is the one area that bridges across both digital and core IT. We’re helping our business units use the cloud more and more. Because these cloud initiatives are being used by core IT and digital, we’re also helping the business units deal with both sets of challenges, with a common approach to maximize synergies.

EDP has in place a very important initiative around cloud migration, called project Clear Sky. The goal is to have 85 percent of our applications in the cloud by 2022 [currently we have around 40 percent]. We’re already cloud-ready in the sense that we’re able to choose whether to put an application in our own data center or in the cloud. From a technical point of view, we can do either.

In 2019, one important decision was to pick Microsoft Azure as our main cloud provider, despite adopting a multi-cloud provider approach. Looking ahead to 2020, we’ll be migrating our applications there, which will be one of our most important projects.

We’ll also focus on optimizing our applications. We have a specific project, called Terminator, to kill our obsolete applications. We want to get rid of any applications that are vulnerable regarding security or that can represent a duplication of efforts. We are saving a significant amount of money with this initiative, which is integrated into a broader objective of improving synergies among different business units while keeping them as autonomous as possible to leverage digital and achieve business goals.
“The industrial IoT is at an inflection point driven by private wireless demand.”

Anyone past a certain age may still think of Nokia as the world’s leading maker of mobile phones. But in fact, the company sold that business to Microsoft in 2014. Today, Nokia specializes in providing data-networking equipment, software and services to enterprises and service providers.

The Espoo, Finland-based company’s growth strategy centers on acquisitions. Nokia in recent years acquired Motorola wireless networks, Comptel, Gainspeed, Unium, SpaceTime Insight and Alcatel-Lucent (including Bell Labs). New investment areas include 5G, the internet of things (IoT) and expansion into key vertical industries.

It’s a big business. For Nokia’s latest fiscal year, net sales totaled €22.56 billion (approximately $25 billion). And the company employs more than 100,000 people worldwide.

Karl Bream joined Nokia in 2015 as part of the company’s acquisition of Alcatel-Lucent. At the latter, he held senior leadership positions in corporate strategy, marketing, sales and business development.

Tell us about Nokia’s new Enterprise Group and its charter.
We launched the Nokia Enterprise business group in January 2019 as part of our growth mission. We’ve been investing in enterprise for probably a decade or two, building mission-critical networks primarily in the transportation, energy and public sector verticals. We felt the business had grown materially, and we saw additional opportunity in private wireless networks and Industrial IoT, so we decided to create this new business group.

My own workday is centered on where we want to take Nokia in Industrial IoT, and what portfolio of products and services we need to build for our enterprise and service-provider clients.

Which key technologies are you working with?
The industrial IoT is at an inflection point driven by private wireless demand. Companies — especially heavy-asset companies — are looking to digitalize their businesses functions, operations and processes, and create digital twins of their equipment. This has proved to be an opportunity, because existing WiFi networks won’t support many of the industrial use cases that require new levels of latency and performance. While WiFi can support many office use cases, now we’re seeing more and more industrial areas where LTE or a 5G network is going to properly serve those companies.

And this is where we, as Nokia Enterprise, have an insertion point, to expand and support industrial clients who need private wireless. In addition, we have built
expertise on the manufacturing and logistics segments, where we think private wireless will provide significant value. That’s really our focus.

Nokia Enterprise has been growing quickly, and the Industrial IoT opportunity can help us accelerate that growth as we move forward.

You also oversee Nokia’s IoT strategy, right?
That’s right, I wear two hats at Nokia as our IoT strategy spans both our CSP (communications service provider)-focused business and our enterprise-focused business. Our CSP customers ask us to help them create high-performance, highly secure connectivity and applications platforms that help them address the needs of their consumer and enterprise end customers. We do that with our network solutions such as Narrow Band IoT and 5G, our IoT Platform for subscriber and device management, and our WING (Worldwide IoT Network Grid) platform.

Our enterprise clients rely on us to solve their business challenges with private networking solutions and Industrial IoT automation.

Likewise, our enterprise clients rely on us to solve their business challenges with private networking solutions and Industrial IoT automation. We address networking through our private LTE now and will address private 5G next. We also address digitization and industrial automation opportunities through our Nokia Digital Automation Cloud (NDAC) and Analytics and IoT portfolios. These capabilities help enterprises address their operational optimization, operations security, digitization and mirroring/twinning, and condition-based maintenance challenges.

What can you tell us about WING (Worldwide IoT Network Grid), Nokia’s managed service for global IoT deployments?
WING is a platform that supports our CSP customers to create value for their enterprise customers, particularly multi-national enterprises. While several CSPs have significant global presence, the WING pay-as-you-grow service built on a globally distributed cloud native core is attractive to many because they can quickly deliver an IoT solution that includes connectivity and applications. This turns out to be faster and more agile than building pairwise agreements with tens or hundreds of other CSPs to gain the coverage that multi-national enterprises require. We have WING customers of various sizes and footprints, but all can serve their clients globally with WING.

In addition to global connectivity, WING also delivers IoT applications on a global scale. These include services such as logistics, asset management, smart agriculture and livestock management, all as a service.

We recently announced a partnership with Microsoft that included the WING service. We believe that partnership will help make IoT applications and the associated global connectivity more easily consumed on a global scale.

Expansion into new vertical industries is another part of Nokia’s growth strategy. What are the main areas of focus for you?
We have strong, long-standing relationships in the transportation, energy and public sector industries. These industries began transitioning their mission-critical networks back in 2000. These customers trust the reliability and performance of the networks we have built and continue to build with them now as they deploy private wireless networks and industrial automation and analytics solutions. Today, we are one of the leaders in sub-segments like ports, mines and electric utilities, where our solutions are delivering great return on investment.

Extending from those verticals, we began serving web players with technology that supports the transition to hyperscale, hybrid cloud networks. We have a key set of customers in this segment today.

We now have started serving manufacturing and logistics customers who are front-runners in adopting industrial automation and Industrial IoT. These are the types of customers who are investing in private wireless for the security, latency, mobility, performance and lower total cost of ownership the new networks can bring.
“I’d rather shoot for the moon and maybe not quite get there than settle for a 3- to 5-year vision.”

Tobacco is an industry in transition, and the Reynolds American Group is among the leaders of that change. Acquired in 2017 by British American Tobacco Plc. (better known as BAT) for a reported $49.4 billion, today Reynolds is the U.S. parent of several brands.

Reynolds also has a research and development unit, Kentucky BioProcessing, that’s developing a method to extract protein from tobacco plants.

This diverse set of operations serves a vital purpose. Winston-Salem, North Carolina-based Reynolds, facing strict new government controls, is transforming its business.

Aaron Gwinner joined Reynolds in mid-2019. Previously, he held senior IT roles at The Coca-Cola Co., where he worked for more than two decades.

Moving from Coca-Cola to Reynolds seems like a big leap. Was it?
The two organizations have a lot of similarities but also a lot of differences. From an IT perspective, the tobacco industry is more heavily regulated than anything I’ve ever been part of. And now there’s a huge focus on moving adult tobacco consumers from combustible cigarettes to alternative tobacco products that may pose less risk. After a hundred years of being focused on combustible cigarettes, that’s a fundamental change.

Is that part of why you were brought in to Reynolds?
That’s the reason I was brought in. The organization now has three top areas where we need to build capability: e-commerce, digital marketing and data analytics.

All the other things we want to do — such as selling next-generation products — require a technology infrastructure. We also need the right people with the right technical skills and experience. And, the right technology platforms and data platforms to help manage it.

Why is digital marketing so important at Reynolds?
There’s an overlap here with the CPGs [consumer packaged goods companies]. We all want to leverage digital technology and data analytics to get the right message to the right person at the right place and time. The tobacco industry is far behind the rest of the CPG industry, but I believe we can leapfrog from where we are today to a more advanced state, especially in data analytics. We need to figure out how to leverage those technologies to change the industry and change our organization’s footprint.
We’re also working to enable business-to-business e-commerce with our retailers, rather than just [using] traditional feet on the street. Here, we’re trying to leverage digital marketing in a responsible way. We want to leverage digital marketing to the right segmentation model, making sure the right content goes to the right people. That’s something we do not have a lot of experience with. On the other hand, leveraging technology to help drive that change provides a huge opportunity for growth.

**How does e-commerce play into the overall transformation?**

We do have a few e-commerce sites, but I wouldn’t say we’re proud of them. Looking ahead, we’re figuring out what the next generation looks like. We’re also asking how we create a digital-marketing ecosystem that includes consumer segmentation, digital-asset management, custom messaging and more. That’s for our existing adult combustible consumers, who may want to migrate over to these new product categories.

At the same time, we’re working to empower our small to midsize business customers with data-driven insights into their consumers. We want to enable them to purchase their own inventory online, versus having to wait for a sales rep to come out to the store. We’re revisiting what that model looks like, and how technology can better enable that process.

**You mentioned data analytics. What’s the Reynolds plan?**

When we think about analytics, it’s still mostly traditional BI [business intelligence]. It’s data-analysis reporting, looking back 1 or 2 months to see what we sold, where we sold it and why. But where we want to go next is into cognitive computing and AI [artificial intelligence] capabilities. So it’s no longer just, “Which products should I put into the store?” but instead, “Should I put this product in the store for this consumer, this time of day, at this point on the shelf and at this price?” When we think about analytics now, I want it to be about generating insights and driving the speed of business decisions. Fortunately, we’ve already got the data to do that.

When we think about analytics now, I want it to be about generating insights and driving the speed of business decisions. Fortunately, we’ve already got the data to do that.

It extends to marketing and sales, too. In manufacturing, I want to look at opportunities to improve the factory lines based on the vast amounts of data we have. I want to look at HR [human resources] data to improve employee engagement. I also want to use analytics for better consumer segmentation, better pricing models, better e-commerce flow, even online A/B testing, which we don’t do yet.

I don’t think any of this is rocket science. Plenty of companies have been doing this for years. So the question is: How can I apply the best practices to leapfrog our competitors? What other companies did in 10 years, I need to do in just 2. So we’ve got to figure out ways to accelerate.

One way is to choose best-in-class capabilities that are already out there, and then figure out how fast I can get them up and running.

**2 years is your target?**

Yes. I want to set a 2-year target for what we can achieve. If you set a 5-year target, you lose focus on the endgame. With 2 years, it puts a lot more pressure on changing the organization, the way we work and where we invest. I’d rather shoot for the moon and maybe not quite get there than settle for a 3- to 5-year vision.

This organization is willing to do what’s needed. The organization wants to transform, and for that, technology and the IT organization are key enablers. We’re committed to digital.
Peter Claus
Vice President and Chief Technology Officer
Textron Inc.
textron.com

“...will succeed long-term will be the ones that use smart technology — both emerging and proven — to positively impact the bottom line for their business.”

Maybe you’ve never heard of Textron, but you’ve almost certainly heard of some of its best-known brands and products such as Beechcraft and Cessna airplanes, Bell helicopters and Arctic Cat snowmobiles.

Providence, Rhode Island-based Textron is a multi-industry company whose many product lines include jet engines and aircraft, drones, armored military vehicles, advanced marine craft, flight simulators, fuel systems, off-road vehicles, golf carts and commercial lawnmowers. Textron also provides financing for purchasers of its aircraft and helicopters.

It’s a big business. With a global workforce of nearly 35,000 employees, Textron’s revenue for its latest fiscal year totaled $13.6 billion. Of that, 66 percent came from the United States, although Textron has a presence in more than 25 countries.

Peter Claus has held IT positions with Textron and its businesses since 2011, and he became the company’s CTO in early 2019. Previously, Claus led The Walt Disney Company’s international IT infrastructure and projects for over a decade.

Your CTO title can mean different things at different organizations. What does it mean at Textron?

I’m the VP and CTO of Textron. As both a vice president and the CTO, I am responsible for making sure technology positively impacts the bottom line of the company.

Primarily, I focus on infrastructure and operations, but I also evaluate emerging and future technologies, especially if they can be leveraged across multiple businesses and functions. So, if a technology solution is unique to only one of our businesses or functions, it may not be provided by my organization. It may be supported, but my team’s main focus is on large-scale technology trends that can meet our needs throughout the Textron enterprise.

Although Textron’s Corporate Office provides oversight, direction and assistance to its businesses, each one is responsible for its own day-to-day operations and profitability. Each business unit has its own IT organization and CIO who report to their own business unit’s president. Corporate IT is a shared service function that is an umbrella over this structure. The business units drive the demand and Corporate supports them.

You came up through Textron’s ranks, working at several businesses. Does that experience help you now?

The valuable experience I’ve gained at these different businesses has helped me understand the different needs throughout Textron from their perspective. And having worked under different leaders at each one of those business units has given me a broader view than I would have had by staying in infrastructure my whole career.
That said, the career path at Textron is less like a ladder, where you keep climbing the rungs of a single function, and more like a diamond with many facets. We jokingly call it the “jungle-gym career.” You can stretch sideways as you move through the ranks. It’s something we do to encourage folks to broaden their horizons.

For example, our employees can move between different business units as well as different IT functions. I started with Textron Specialized Vehicles within an infrastructure function. Then I moved to Kautex, our automotive supplier business unit, and had responsibility for all aspects of IT, including but not limited to ERP, PLM product life-cycle management, infrastructure and applications in the Americas. From there I joined TRU Simulation + Training, our flight-simulator business, as the CIO.

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Before that, you worked at Disney, which seems like a very different kind of industry. Was the change as big as it seems?

Although it’s a completely different industry, there are actually similarities. People may not realize how diverse Disney’s business is. Not only is it a media company that makes movies and owns ESPN and ABC, but it also has consumer products, cruise lines and parks. Each of these businesses works completely differently from the others.

Textron is also a diverse multi-industry company. Our segments include Textron Aviation, Bell, Textron Systems, Industrial — which includes Kautex and Textron Specialized Vehicles — and Finance. Each has different needs from one another, and even different needs within the segments. For example, our businesses manufacture vertical lift and fixed-wing aircraft; provide products and services for the defense, aerospace and automotive markets; and produce golf cars, off-road utility vehicles, recreational side-by-side and all-terrain vehicles, snowmobiles, light transportation vehicles, aviation ground support equipment, professional turf-maintenance equipment and specialized turf-care vehicles.

It all boils down to understanding what IT can do for the business. Having worked at Disney, which had such vastly different needs at their different functions, certainly helped me when I came to Textron. Sure, there are functions at Textron that didn’t exist at Disney, and vice versa, but as an IT professional and executive, you need to be flexible and willing to learn the business’s needs, no matter what they are.

IT talent is in high demand. How are you ensuring that Textron has a sufficient number of skilled IT workers?

Talent development is a key pillar among my objectives. The talent war is real. Plus, the folks who work for us are our most important resource. Fortunately, Textron does a fabulous job of leveraging, developing and providing career development opportunities for our people.

Coaching people in the technology space is important. We want our IT employees to exit the hamster wheel, where they only execute non-value-added technical tasks without a clear understanding of how they can positively impact the business. Our first step to move them beyond that mindset is to define our 3- to 5-year goals in the technology space. Then we will develop action items for the next 12 to 18 months that relate to those strategies and goals. Getting our employees to perform the actions that relate to our goals will take a lot of coaching — we realize it won’t happen overnight.

Your top priorities for the coming year?

Understanding what makes good business sense when we review a technology. We have to determine whether that dollar spend will translate into revenue dollars and ultimately into profits. If you keep implementing new technology for technology’s sake, you’re going to spend a lot of money and human capital on things that won’t provide value to your business. The companies that will succeed long-term will be the ones that use smart technology — both emerging and proven — to positively impact the top and bottom lines for their business.
“I’m forced to do things that most other CIOs can only dream of.”

Uniper, formed in 2016 as a spinoff from Germany utilities provider E.ON, is today an international energy company with some 12,000 employees in four main business lines: power generation, energy sales and trading, energy storage and energy services.

The last year has been a dynamic one for Düesseldorf-based Uniper. The company, publicly traded since its founding, reported a net loss for its fiscal 2017 of €538 million (approximately $593 million) and then became a takeover target of Fortum, a Finnish clean-energy company. Today, Fortum holds nearly half of Uniper’s public stock.

Damian Bunyan has been CIO of Uniper since the company’s formation. He was previously with E.ON, where he held senior IT positions for nearly a decade.

How have the recent changes at Uniper affected you and your IT group?
Our life is still dominated by the opportunity we got by breaking away from our previous largest shareholder, E.ON. We’re coming to the successful end of our activities to separate ourselves from E.ON. And rather than telling people I’m depressed because we were carved out, I tell them all the time that I’m a really lucky CIO. Because I’m forced to do things that most other CIOs can only dream of.

Such as?
Historically, we were part of the E.ON group, and we sat in an E.ON data center. That data center is well over 10 years old; it’s no longer able to meet the demands of our applications, so we’re exiting that data center. And when you exit a data center in 2020, you don’t think about building yourself a new one, you just go fully into the cloud. Where other CIOs are worrying about whether the cloud is appropriate, safe and really cheaper, I don’t need to worry about that. I just go fully into the cloud.

Therefore, we’re working with DXC to also move all our applications to the cloud. We have a Windows 7 environment with a messy Active Directory and old-fashioned identity management. Rather than cutting and pasting, we decided to go for a modern Windows 10 workplace with Office 365 in the cloud. As part of that, we’re getting a brand-new, Uniper-style Active Directory and identity management that’s state of the art. So, I get to do things that other CIOs don’t have the time to focus on.

Sounds massive. Your Windows users must number in the thousands.
Yes, we’re talking about roughly 8,000 people. Plus, we found that in our old data center we were not as structured and orderly as you might expect. I didn’t know exactly how many applications I had, or how many servers I had. Once we move to the cloud, I’ll know.
One nice piece is that along the way, we’re losing 30 percent of our applications. These applications aren’t actually needed. Before moving to the cloud, we didn’t know that.

Moving to a modern Windows 10 environment, you not only get to clean up your client base, but you also start getting reports that show how many clients you have, how many have their security patches updated, how many run software that’s noncompliant. With this, we’ll have a more modern IT setup than the organization potentially acquiring us. It’s the digitization of the CIO’s job.

How does IT get treated by Uniper’s other functions?
In our world, one thing you get judged by is whether you provide cost savings. So, at the same time I’m looking at a beautiful, future-oriented picture, I’m also under constant cost pressure. To gain credibility with senior leadership, I also need to deliver the desired efficiencies, which end up in shareholder value. That then allows us to do more things. So, we’re maneuvering IT into a place where it gets more recognition.

Our current board of directors sees the future of the energy industry in what it calls the three Ds: decentralization, decarbonization and digitalization. We have a new CEO, and he’s very digitally minded.

Further, our current board of directors sees the future of the energy industry in what it calls the three Ds: decentralization, decarbonization and digitalization. We have a new CEO, and he’s very digitally minded.

How about data analytics?
Absolutely. In fact, when I recently visited one of our major partners, I told them about my vision: to have the best IT in the energy industry. But they laughed at me. They said, “We think your target’s wrong. You already have the best IT in the energy business.” They also said that, in terms of data analytics, Uniper is 3 – 4 years ahead of its competition.

That’s principally driven by the fact that we’ve had to separate ourselves from E.ON. Going into the cloud has allowed us to create a data lake in Microsoft Azure. Suddenly, we have all the basics needed to start driving analytics. When you combine that with our electrical engineers, who aren’t afraid of programming in Python, suddenly you’re delivering some very powerful use cases.

Looking ahead, what do you expect to be your biggest challenges?
Security, security and security. If I wake up at 3 a.m., it’s because I’m worrying about a power station being hacked. Are my IT assets up to date? Do I have state-of-the art firewalls, etc.? That’s why getting into the cloud is so important for us. The opportunity and the threat both merge around security.

Also, we still struggle in the area of digital transformation. Sometimes I’d like the business to say, “Damian, lead us into the digital world.” But other times, I wish they’d say instead, “This is anything but an IT job.”

Though we can give the business the technology, their processes still need to be structured and designed to get the most from digital. That’s not necessarily a task for IT. So today, digital transformation is a worry; tomorrow, I hope, it will become an opportunity.
Sajeev Nair
Head of Global Application Development & Maintenance (ADM)
Zurich Insurance Group
zurich.com

“In the end, we’re an insights-based business.”

Is the insurance business stodgy and staid? Not at Zurich Insurance Group (“Zurich”). The nearly 150-year-old provider of life, property and casualty, and commercial insurance is undergoing a radical transformation. Zurich’s CEO recently told shareholders that the Zurich is “embracing a customer-led, technology-enabled transformation that will redefine how we create value for our customers, shareholders, employees and society more broadly.”

This means Zurich is renewing its focus on customers, simplification and innovation. Zurich has some 55,000 employees working in more than 215 countries and territories. Total revenues (excluding net investment result on unit-linked investments) for Zurich’s most recent fiscal year totaled $52.3 billion, more than the gross national product of some midsize countries.

Sajeev Nair has worked at Zurich since 2009. Previously he was the company’s sourcing executive for IT.

How are you supporting the three cornerstones of Zurich’s transformation strategy?
When we started our 2017 – 2019 strategy cycle, the major thrust was on greater customer centricity and simplification. We had made a specific commitment to reduce our expenses by $1.5 billion. IT was a material driver of the simplification effort. We have consolidated from more than 70 data centers to 13 and replaced more than 140 IT network providers with a single one. We have simplified our application landscape by decommissioning over 550 applications during this strategic cycle. We have also enhanced our IT capabilities through insourcing and selective crowdsourcing. On the innovation front, we have focused on embedding an innovation culture in the organization.

For our next strategic cycle, we’ll make some tweaks, but at the core we will continue our journey toward creating the leading customer-oriented insurer. Our focus will be on converting transactional buyers into long-term Zurich customers. We will focus more on product and process simplification, as well as accelerating innovation of products and delivery models.

How do you handle such a massive data center consolidation?
We’ve been at it for a few years now. Of course, the more data centers we have, the bigger the target we need to protect. So, security by design is now embedded in the organization’s DNA.

Our consolidation program is massive, and it’s at its tail end. In fact, our target is to get down to about eight strategic data centers, and we’re well on track. For example, we’ve moved large parts of our data center in Switzerland to London, and it’s a much more modern
and sustainable facility from an environmental perspective. This was our biggest move. We had to move mainframes and large parts of our infrastructure. But it also included consolidating a number of other data centers. Overall, it was quite a substantial exercise.

**To what extent does Zurich’s new data center strategy take advantage of the cloud?**

Our cloud strategy is twofold: (1) looking at a private cloud with DXC Technology; and (2) considering the public cloud. Over the last 24 months, there has been a significant increase in usage of public cloud. Right now, about 35 percent of our applications are on either the public or a private cloud.

Some of this was also part of our simplification program portfolio, which included nearly 75 programs. One of these programs involved a data lake in North America that we moved to Azure.

In addition, we’ve set up a cloud-control plane, making sure we have guide rails so that when an application is hosted on one cloud, it’s also portable across other clouds, should the need arise. And, we’re making sure that all applications we put in the cloud are secure by design.

**You’ve eliminated ~600 apps. How?**

It’s been an ongoing journey. Many of our major business units have been on this journey for a few years, demonstrating discipline and a structured approach toward decommissioning. To target some of the harder-to-get applications, we set up a simplification program with targeted funding to enable decommissioning of applications or movement to the cloud, thus reducing technical debt. We have to make sure that all our old and unused applications are eliminated. We don’t want any zombies in our landscape.

We’re down to about 2,300 applications, but that’s still a large number. Even as we continue to simplify that, we’ll need to introduce new applications as we go into more and more digital propositions. Zurich has also made some acquisitions, and those added applications, too. So, our aspiration as we move forward is of course to reduce applications in our landscape, but on an ongoing basis we want to ensure that the number of new, modern applications that we add is below or equal to the number of decommissioned legacy apps.

**In 2018 Zurich created a group, called Customer Active Management (CAM), to do data analytics. How’s that work going?**

Actually, we already had an ongoing data and analytics program since 2015. We have an enterprise-level data organization in Europe and another one to do analytics for the North American region. On top of that, our local country business units have their own data organizations. That’s important, because the insurance business tends to be very local. It’s subject to local regulations, and to date the customers tend to have a local focus as well. So a data analytics capability is required at the local level.

We then established a company in Ljubljana, Slovenia, that we call Zurich Customer Active Management (ZCAM). It has a simple, flexible, proprietary customer analytics platform. This enables our distribution network and underwriters to better understand customers’ needs and create personalized propositions.

The real-time platform takes advantage of advances in technology to make it easier to use data from structured or unstructured sources and legacy systems. This means we can create tailored, forward-looking and simple coverage solutions. In the end, we’re an insights-based business.

**Innovation is a key pillar of Zurich’s new strategy. But how do you foster innovation in such a large organization?**

It’s challenging. We’ve gone after the most difficult element, which is culture. In the past, innovation was something that would happen in a corner office somewhere. Now we’ve enabled the growth of innovation, focusing on horizontal connections within the organization. For example, there are innovation champions in each business unit — people who drive innovation and champion the cause and, most importantly, are connected to one another. We also have a program called Make the Difference, which brings together employees from across the globe to cocreate and implement innovative ideas. Thus far we’ve had 2,000+ nominees and 1,250+ employees engaged from 28 countries across four regions. Over 700 ideas have been submitted, and 60 initiatives have been spawned across the group.

Looking forward, we’re asking ourselves: How do we scale innovation even further? How can we streamline, accelerate innovation and take innovations to market at speed? How do we incentivize people to innovate more, and how do we fund them sustainably? Those are the processes we’re looking to lock down.
“We now have all the technology we need to build the most modern enterprise.”

Dan Hushon, senior vice president and chief technology officer at DXC Technology, drives innovation strategy and growth for DXC’s solutions and ensures technology excellence. He is responsible for defining DXC’s technology vision and advocating for it with clients. He also serves as DXC’s executive sponsor of AT&T and Microsoft. Dan has more than 20 years of experience delivering technology-differentiated solutions, including leadership positions at EMC and Sun Microsystems.

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We’re now a couple of years into business transformation. What do you see as your customers’ biggest challenges today?

Experienced talent is one I’d put near the top of the list. Although all of our customers want to make progress, in IT they’ve got a huge amount of what I call overdue homework. As a result, there’s a backlog of business projects that have been gated by two main problems. The first is acquiring both the senior talent who can lead from experience and the full-stack developers who can collaborate around the transformation journey. The second is creating an IT environment which gives that talent the productivity tools and culture they need.

To some extent, it’s a Catch-22. Good people want to work in a hyper-productive environment, yet many companies don’t have that environment to offer recruits. So, the lack of a fully modern IT environment can create a gap, leaving a company unable to hire top talent to accelerate.

What’s more important: retraining current staff or attracting and hiring new employees with more advanced skills?

It’s really both, because the talent market has shifted. The skills in demand now include understanding how to work with APIs and information services and how to produce deeper analytics. There’s another set of talents, too: the ability to take prototypes and pilots and settle those into production in the enterprise. People with this “settler” skill set are the ones who actually drive enterprise adoption.

Part of what’s driving this is the shift from an IT approach that’s largely product-based to one that’s focused on services and platforms. This shift also calls for new skills around enterprise architecture, organizational navigation, cyber security and risk.

How are your customers handling this talent challenge?

There are lots of experiments. For example, some of our customers have begun to invest in what I call practical or applied innovation. You ask the staff, “If you had this problem, what would you do?” This naturally attracts the problem solvers, or at least helps you to identify them.
Here at DXC, we’ve begun to build agile squads, and at the end of a sprint ask them, “Who would you want to work with again?” Once you get an update on this, you can build a better team. So, we see a lot of team remixing, at both the senior and junior levels.

Another thing that’s really powerful is running hackathons and buildathons. They’re a great way to bring talent out of the woodwork. You might have 10 or 20 small teams each working on a problem, each coming with its own background. The members are learning to work as a team, and they’re also winning or losing as a team.

The competitive element is important. In the end, there’s a grand prize winner. Still, I think almost everybody wins. The business learns a lot. And the backlog of good ideas really grows.

One of our customers, a train operator, ran one of these competitions, and the challenge was: “Can you create an environment that fundamentally changes the rider experience?” One team came up with what was called a universal WiFi ticket. It turns out that most commuters don’t take just one train; instead, they take a train to a train, or they switch from a train to a bus. So, the idea was to give passengers a token that grants them WiFi access on their entire way home.

Earlier you mentioned IT’s “overdue homework.”
What’s included?
A whole bunch of things. One is having a suitable implementation strategy for the cloud. Lots of companies have cloud strategies, but how many have been able to maximize the benefits or even deal with complex or hybrid workloads that span cloud and traditional environments? We’ve seen grandiose expectations, followed by fairly suboptimal performance.

For me, a great way to envision modern IT for developers is to look at the tooling that open source communities naturally use for continuous integration/continuous delivery in a distributed community. For more traditional knowledge workers, look at how the hyperscalers like Google and Microsoft are operating their collaboration environments.

Sometimes, though, it’s as simple as asking, “Do I actually understand where I have assets that have not been upgraded or updated in a long time?” Other times, it’s thinking about software patching. How many companies really have patching under control? Their IT estates have grown, but their patching and operational budgets have shrunk. There can be a tremendous amount of modernization that should be taking place.

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How can IT benefit from its own digitization?
If you look at the hyperscalers in the cloud, you realize they run IT very differently from most enterprises. These companies — for example, Airbnb, Netflix and Spotify — run sprints for both functions and technical debt. They normally run functional sprints. But when their technical debt accumulates, they put a pause on functions and instead take down that debt.

For example, a company might say that every fourth sprint should be aimed at handling all those to-do’s still in their code. This way, they’re modernizing their IT environment on a continual basis. By contrast, many enterprises tend to say: “If it runs, don’t touch it.”

I believe we now have all the technology we need to build the most modern enterprise. Sure, it will constantly get better, but we have just about everything we need now. The real question is: Do you have the teams and the operating model to at least be a fast follower? You may not need to be first — but you certainly don’t want to be last.
About DXC Technology

DXC Technology (NYSE: DXC) helps global companies run their mission critical systems and operations while modernizing IT, optimizing data architectures, and ensuring security and scalability across public, private and hybrid clouds. With decades of driving innovation, the world’s largest companies trust DXC to deploy our enterprise technology stack to deliver new levels of performance, competitiveness and customer experiences. Learn more about the DXC story and our focus on people, customers and operational execution at www.dxc.technology.

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