Across the business landscape, digital transformation is underway as organizations fundamentally change from the inside out. In order to improve operations, build the best workforce, establish competitive advantage and improve customer experiences, businesses across industries have embraced technology.

The shift of IT from a support-only function to helping achieve business outcomes is well-established. In this new normal, the decisions of IT professionals are challenged more than ever by the increasingly complex relationship between IT and the business.
Each year, Insight Enterprises releases the Insight Intelligent Technology™ Index to help IT decision-makers navigate this strategic role within their organizations. As we illuminate the challenges and priorities of IT professionals in a rapidly evolving digital environment, we hope readers feel more equipped to tackle their responsibilities and embrace new opportunities.

The 2019 index

This year’s index identifies and contextualizes four paradigm shifts impacting the way IT professionals and their organizations operate. In particular, it explores new realities surrounding the cloud and data center, IT supply chain management, the modern workplace and digital innovation.

With a clearer picture of the central challenges facing IT — such as security, upgrading and innovating IT infrastructure, and optimizing IT operations — IT decision-makers and their organizations will be more prepared to realize value from IT investments and drive business outcomes through technology.

Methodology

This year’s findings come from an online survey of 400 IT professionals in the U.S. and Canada working at enterprise companies ranging from at least 1,000 employees to more than 5,000 employees. To qualify for the survey, respondents had to be involved in the management and supervision of IT systems, determining IT needs for their company, and/or approving or selecting IT consultants.

M/A/R/C Research fielded the survey between Feb. 13, 2019, and Feb. 26, 2019. For the purposes of this report, small enterprise companies are defined as having 1,000 to 1,999 employees, medium enterprise companies as having 2,000 to 4,999 employees, and large enterprise companies as having 5,000 or more employees.
All companies are becoming data-driven.

*Today, organizations are becoming more dependent on data to define and support their products and processes.*
Data is powerful, and there is more of it than ever, with no end in sight. Universal predictions of data growth agree the size of the digital universe nearly doubles every couple of years. Likewise, almost every industry is moving toward a world of connected devices — whether a company is producing those devices or leveraging them to run the core of the business.

In this environment, data is generated by all kinds of users — employees, consumers, business partners, third parties — as well as across the IT ecosystem in clouds, on-premises and at the edge.

Making things even more complex is the fact that organizations must contend with data that lives outside their four walls, as well as data with which they interact but do not own or control. All of these variables converge to produce a massive amount of data and raise concerns about where it lives, how to secure it, how to back it up, and when and where to move it.

IT professionals are devoting a lot of energy to deciding where data should live and how to allocate funds accordingly to this end. When it comes to cloud platforms, half (50%) say the top challenge related to managing cloud spending is determining best-fit workloads for public, private and hybrid clouds (see Figure 1). Some of this can be attributed to the lack of assessment and analysis of workloads, including inventory, system interdependencies, prioritizing sensitive versus non-sensitive, and compliance requirements.

Organizations also fail to plan for the economics by using cost modeling, comparisons and other projections. These overlooked considerations make it harder to assess which cloud options are the most viable from both an operational and financial standpoint.

Furthermore, confusion around monitoring and managing cloud consumption inhibits IT professionals’ ability to accurately forecast cloud spending. Given these challenges, IT decision-makers are already looking for help to develop the right cloud and data center strategies, processes and skill sets. Nearly one in five (18%) agree systems integrators that can prescribe a logical methodology for building a hybrid data environment will provide one of the most impactful advancements to the future of IT.

### Top Challenges for Managing Cloud Spending

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Difficulty determining best-fit workloads for public, private and hybrid clouds</td>
<td>50%</td>
</tr>
<tr>
<td>Difficulty planning and allocating budget for cloud consumption</td>
<td>42%</td>
</tr>
<tr>
<td>Lack of visibility of used services at the cost center, workload and application level</td>
<td>40%</td>
</tr>
<tr>
<td>Lack of clarity around pricing models</td>
<td>33%</td>
</tr>
<tr>
<td>Dealing with shadow IT</td>
<td>32%</td>
</tr>
</tbody>
</table>

Figure 1
Perhaps even more pressing are the challenges of securing data from breaches and making sure it is backed up and easily recoverable. In fact, \textbf{43\%} of IT decision-makers report that ensuring the security of data in dispersed environments is the top challenge related to accelerated data growth they will face in the next three to five years. Modernizing data protection and recovery follows close behind at \textbf{41\%}.

Data security and protection becomes even more complicated for global organizations. It is the top challenge, by far, for IT professionals when it comes to managing global data center needs. Data traversal across geographical, as well as digital, boundaries introduces higher degrees of risks and governance issues organizations must consider and account for.

Although data vexes IT decision-makers, they agree it has great potential to transform business. Half say that advanced analytics — enabled by Artificial Intelligence (AI), big data, machine learning and deep learning — have been critical to their innovation initiatives over the past two years (see Figure 2).

Looking ahead, \textbf{44\%} of IT professionals believe AI and machine learning will most significantly impact the future of IT. With the ability to leverage insights to predict failures, increase safety in the field, promote business continuity and improve customer service, AI and machine learning are poised to revolutionize industries from transportation to healthcare to energy.

Today, organizations are becoming more dependent on data to define and support their products and processes. The proliferation of data and the growing ability to translate it into actionable intelligence — such as hospitals improving patient experiences through AI or railroad networks monitoring track maintenance with the Internet of Things (IoT) edge and drone technology — means many organizations are becoming data-driven, whether they originally intended to or not.

The growing complexity of the data environment across hybrid cloud, on-premises and at the edge will only make this imperative more urgent. Within this new normal, IT professionals must ensure they can properly store, secure, protect and manage data, as well as leverage new technologies so that their analytics teams and data scientists can surface meaningful insights that will advance the business.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure2.png}
\caption{Technologies Critical to Digital Innovation Initiatives}
\end{figure}
Digital innovation is driving the future of business.

89% of IT decision-makers feel their digital innovation investments have been “moderately or very successful” by improving their standing in the market and/or their financial performance.
In today’s ever-shifting technology landscape, companies are growing more dependent on digital innovation initiatives to achieve internal and external business outcomes. At the top of the list, 52% of IT decision-makers report the primary objectives for digital innovation within their organizations are improving operations and business procedures.

Enhancing the customer experience and customer relationships is a close second, according to 47% of IT professionals (see Figure 3).

The relationship between the two may explain why IT professionals have identified them as the top objectives: Every customer interaction is a critical opportunity to deepen (or damage) loyalty, and the company must deliver that experience from the inside out, through efficient and effective internal operations. In essence, in order to get it right for the customer, organizations first need to get it right internally. It seems organizations have embraced this responsibility — with encouraging results. An overwhelming majority (89%) of IT decision-makers feel their digital innovation investments have been “moderately or very successful” by improving their standing in the market and/or their financial performance.

This finding suggests definitions of success and attitudes toward failure may be evolving. As organizations have learned to embrace digital innovation to future-proof the business, they are learning to experiment and accept failure as part of the process. As a result, they are simultaneously expanding their concept of what success looks like and how they may achieve it.

In order to capitalize on this momentum, IT decision-makers must navigate key pain points associated with digital innovation. Unsurprisingly, the combination of security and data privacy is the top digital innovation challenge for 48% of IT professionals (see Figure 4).

### Ranking of Digital Innovation Objectives

<table>
<thead>
<tr>
<th>Objective</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improve our operations and business processes</td>
<td>52%</td>
</tr>
<tr>
<td>Improve customer experience and customer relationships</td>
<td>47%</td>
</tr>
<tr>
<td>Make our employees more productive</td>
<td>39%</td>
</tr>
<tr>
<td>Develop new products and/or services</td>
<td>38%</td>
</tr>
<tr>
<td>Develop or improve relationships with partners</td>
<td>34%</td>
</tr>
</tbody>
</table>
Developing new products and services — especially those that produce and rely on end-user or customer data — creates security gaps, widens an organization’s exposure footprint and demands new ways of securing that information.

After security, upfront costs represent the greatest challenge for digital innovation initiatives (see Figure 4). This challenge may stem from the fact that only one-third of organizations are currently funding digital innovation efforts from a dedicated innovation budget. In some organizations, IT departments are being asked to fund proof-of-concept or prototype development first, with another business line picking up the cost when the project reaches the production stage.

Regardless of where the money comes from, however, the upfront costs associated with deploying, enabling and building new technology are high — because the return is (potentially) high — and organizations need a plan to maximize the value of those investments.

Considering digital innovation’s ability to improve business outcomes, business leaders must be willing to invest in these initiatives. Nearly one in three (32%) IT decision-makers deem expertise in new technology a top digital innovation challenge, so they must be prepared to acquire the knowledge and skills to ensure stronger return on investment.

Whether that knowledge and expertise is located within or outside the company is an ongoing question for IT decision-makers and one that will persist as the need for transformative solutions intensifies.

<table>
<thead>
<tr>
<th>Ranking of Digital Innovation Challenges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Security and/or data privacy</td>
</tr>
<tr>
<td>Upfront costs</td>
</tr>
<tr>
<td>Expertise in new technology</td>
</tr>
<tr>
<td>Infrastructure delays</td>
</tr>
<tr>
<td>Standards/integration or enterprise architecture</td>
</tr>
<tr>
<td>Monthly costs</td>
</tr>
<tr>
<td>Insufficient budget</td>
</tr>
</tbody>
</table>

Figure 4
Streamlining IT supply chain management opens doors to opportunity.

47% of IT decision-makers report they need to improve the e-procurement process, with only 16% having fully automated IT procurement.
As organizations strive to leverage technology to accelerate existing processes and drive down costs, the importance of a modern IT supply chain cannot be overlooked. In particular, organizations that simplify the processes of procuring, maintaining and replacing technology can reduce the time devoted to operations and redirect resources to future growth.

Today’s IT professionals seem to understand this relationship; however, many have yet to fully realize the promise of a streamlined IT supply chain.

Interestingly, when considering the IT supply chain as a whole, 52% of IT decision-makers deem it “very or extremely optimized.” Yet, when asked to evaluate specific areas of the IT supply chain, they report room for improvement — particularly with respect to consolidation, automation, and other methods for standardizing and simplifying IT supply chain management.

Nearly half (47%) of IT decision-makers want to improve the way they use providers to streamline hardware lifecycles. Likewise, 47% report they need to improve the e-procurement process, with only 16% having fully automated IT procurement.

IT professionals are also looking to adopt practices that will give them more control: 46% want to see improvement in using a self-service e-commerce platform, while 45% want to better implement software asset management tools and services. Finally, 45% of IT professionals are looking for resources, such as purchasing analytics, that will give them greater visibility and insight into IT supply chain management (see Figure 5).

Concerns about the legwork involved in overhauling the IT supply chain and loyalty to legacy technology and systems may be exacerbating the struggle to adopt new IT supply chain processes.

**IT Supply Chain – Opportunities for Improvement**

- **E-procurement systems**: 47%
- **Using providers to streamline the hardware lifecycle**: 47%
- **Using a self-service e-commerce platform**: 46%
- **Access to purchasing analytics**: 45%

Figure 5
Additionally, a persistent focus on product acquisition costs, rather than deployment costs, may impede the implementation of modern solutions — even though they will actually reduce costs in the long run. Either way, failing to evolve IT supply chain management has negative consequences for the business, as IT decision-makers have discovered.

According to those IT professionals who feel their IT supply chain is not adequately optimized, the business suffers. Among this group, 63% say a better optimized IT supply chain would allow their workforce to be more efficient.

A majority (59%) report it would free employees to focus on innovation projects that move the business forward, and 54% believe it would decrease the time their teams spend on troubleshooting and break/fix work (see Figure 6). These findings suggest IT teams are overly preoccupied with managing daily operations at the expense of growth and innovation.

IT professionals who are not satisfied with their IT supply chain understand improved optimization leads to improved operations. However, even a well-optimized IT supply chain needs to keep evolving to promote business continuity and growth. Increasingly, IT decision-makers must embrace consolidation, automation, and e-procurement processes that simplify and streamline IT supply chain management to keep their organizations moving forward.

### How Companies Would Benefit From an Optimized IT Supply Chain

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Total (n=193)</th>
<th>Enterprise-Small (n=78)</th>
<th>Enterprise-Medium (n=55)</th>
<th>Enterprise-Large (n=60)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allow IT staff to be more efficient</td>
<td>63%</td>
<td>63%</td>
<td>53%</td>
<td>72%</td>
</tr>
<tr>
<td>More time to focus on innovation projects that move the business forward</td>
<td>59%</td>
<td>50%</td>
<td>62%</td>
<td>68%</td>
</tr>
<tr>
<td>Less of their time would go toward troubleshooting</td>
<td>54%</td>
<td>47%</td>
<td>55%</td>
<td>62%</td>
</tr>
</tbody>
</table>

Figure 6
Creating a modern workplace means embracing subscription-based models and managed services.

77% of IT decision-makers believe it is “very or extremely important” for corporate IT to resemble consumer experiences.
Digital transformation enables organizations to improve and personalize the external customer experience by delivering a better digital product or leveraging technology to enhance customer service, for instance. However, inside the company, organizations are also taking steps to deploy transformative solutions that increase efficiency, boost employee productivity and engagement, and elevate end-user experiences.

This commitment to building a modern workplace is reflected in the way IT professionals are acquiring and deploying workforce technology. In particular, they are looking for strategies, such as investing in managed services, to get the latest products, tools and services to employees more easily and quickly.

Nearly three-quarters (74%) indicate their organizations consume at least some bundled products and services, and the vast majority plan to continue or increase their bundled consumption.

A compelling 77% of IT decision-makers agree leasing models that designate IT as an operating expense, rather than a capital expenditure, would help them better equip the workforce with modern solutions. In the next year, 42% of IT professionals plan to invest in more self-service and automation features to make the end-user experience more agile and independent.

Organizations are also turning to cloud solutions to modernize the end-user experience and plan to continue that practice in the future. In the past year, 52% of organizations have migrated services and workloads to cloud-based platforms. Looking ahead to the next 12 months, 45% of IT professionals plan to switch to cloud architectures for improved identity and access management.

IT professionals report their organizations are pursuing solutions to facilitate modern, seamless and mobile workforce experiences because employees now expect them. More than three-quarters (77%) of IT decision-makers believe it is “very or extremely important” for corporate IT to resemble consumer experiences.
More specifically, companies are providing ready-to-go devices out of the box, implementing device choice programs and allowing workers to bring their own devices to ensure the options for technology at work mirror employees’ options as consumers (see Figure 7).

Organizations also understand modern technology is vital to building the right workforce to move the business forward. A notable 84% of IT decision-makers say their organizations have linked solutions, tools and devices that enable the ability to work anywhere and from any device to attract and retain talent.

As companies build modern workplaces, they are seeking strategies to equip their employees with the most up-to-date technologies quickly and often. Managed services, Anything as a Service (XaaS) models and cloud solutions are increasingly attractive to IT decision-makers because they make it easier to forecast demand and predict refresh cycles, and they are more cost-effective.

In terms of the employee experience, these options facilitate near-real-time installation, deployment and updates. Therefore, to truly deliver on their organizations’ workforce needs, IT professionals must be well-versed in the newest, most convenient, and most cost-effective acquisition and deployment models, in addition to the latest tools and devices.

**Approach to Device as a Service (DaaS) Models**

<table>
<thead>
<tr>
<th></th>
<th>Companies that currently consume DaaS</th>
<th>Companies that expect to consume DaaS in the future</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>72%</strong></td>
<td><strong>89%</strong></td>
<td></td>
</tr>
</tbody>
</table>

Figure 7
When it comes to IT, there are more products, tools, services and vendors than ever. Emerging and new technology that was once reserved for elite IT companies is becoming more readily available to organizations of all shapes and levels of maturity.

What’s more, organizations are clearly seeing positive outcomes in this era of digital proliferation. Two-thirds (66%) of IT decision-makers say their organizations have been “very or extremely effective” at using technology to improve business operations. Nearly three-quarters (72%) say the same about using technology to improve the customer experience.

Yet, even with multiplying options and benefits, IT professionals and business leaders no doubt feel the urgency generated by the paradigm shifts outlined in this year’s Insight Intelligent Technology™ Index. Although the impulse may be to act now simply because the technology is becoming more accessible, there is inherent risk in moving too quickly.

Without the proper roadmap to achieve their transformation goals or knowledge of how these paradigm shifts impact one another, organizations may be doomed to fail before they start.

For example, as many companies are finding out, security is a top challenge that spans the IT ecosystem. Indeed, more than half of IT professionals identify security as the primary challenge IT is tasked with solving and the top pain point keeping them up at night. Since it can make or break a company, security requires deep expertise to manage holistically.

Thus, organizations are faced with determining how to acquire and integrate the knowledge and expertise they need to successfully pursue digital transformation. While some may be able to build and leverage in-house capabilities to service their objectives, others may need to look outside the organization for help.

In fact, almost a quarter (22%) of IT decision-makers report they need a partner that can unify IT operations and systems across the cloud and data center, employee experience, IT supply chain and digital innovation initiatives.

Collaborating with a systems integrator that is intimately familiar with changing paradigms across the entire landscape and has experience navigating end-to-end digital transformation can help organizations realize greater value from IT investments and initiatives. With an extra set of hands and minds focused on continuity, agility and insights, IT professionals and their teams are free to focus on growth and the future of the business.
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