BLACK & WHITE PAPER

451 Research® | Advisory

Enterprise Digital Transformation Strategies Turning Disruption into Differentiation

MAY 2017

PREPARED FOR

CenturyLink®

About this paper

A Black & White paper is a study based on primary research survey data that assesses the market dynamics of a key enterprise technology segment through the lens of the "on the ground" experience and opinions of real practitioners – what they are doing, and why they are doing it.

About 451 Research

451 Research is a preeminent information technology research and advisory company. With a core focus on technology innovation and market disruption, we provide essential insight for leaders of the digital economy. More than 100 analysts and consultants deliver that insight via syndicated research, advisory services and live events to over 1,000 client organizations in North America, Europe and around the world. Founded in 2000 and headquartered in New York, 451 Research is a division of The 451 Group.

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Introduction

This report stems from a global study designed to explore the extent of enterprise digital transformation across three major territories, identifying four key business pillars as drivers to assess how efforts are playing out in organizations planning or actively applying digitization to strengthen competitive differentiation.

451 Research defines digital transformation as the result of IT innovation that is aligned with and driven by a well-planned business strategy, with the goal of transforming how organizations serve customers, employees and partners; support continuous improvement in business operations; disrupt existing businesses and markets; and devise new businesses and business models.

The objective of this report is to highlight some of the shared learnings of enterprise strategists and practitioners with a working knowledge of digital transformation. It provides insights, directional indicators and recommendations about the state and status of digital transformation in the modern organization today.

The issues we address are important to business and public sector agencies alike.

We explore the maturity, timelines and plans of digital transformation strategies, correlate business drivers, barriers and technology-led imperatives, and identify IT investment patterns and preferences in service provider support.

The variables we considered in this study help provide proof points of the impact of digital transformation on innovation, operational agility and customer service, as well as other business aspects that will ultimately provide sought-after competitive differentiation.

We interviewed more than 1,400 decision-makers in 12 geographies. Overall, 60% of respondents work as senior IT executives, and 40% head line-of-business departments at leading companies in financial services, healthcare and retail, as well as US federal and state government and European public sector agencies.

We thank each and every one for their participation.

1. Executive Summary

There is a growing concern among business leaders in every vertical sector about staying competitive. Companies that are unlike any that have gone before are appearing in markets: retail banks with no branches, hospitality chains without hotels, media companies that do not author content. By investing in modern infrastructure and operating wholly digitally, they can leverage massive scale to transform markets on a global basis. By amplifying the power of digital, they disturb the market equilibrium, challenge operating norms and transform accepted business models.

This digital transformation of business represents both a competitive threat and a market opportunity.

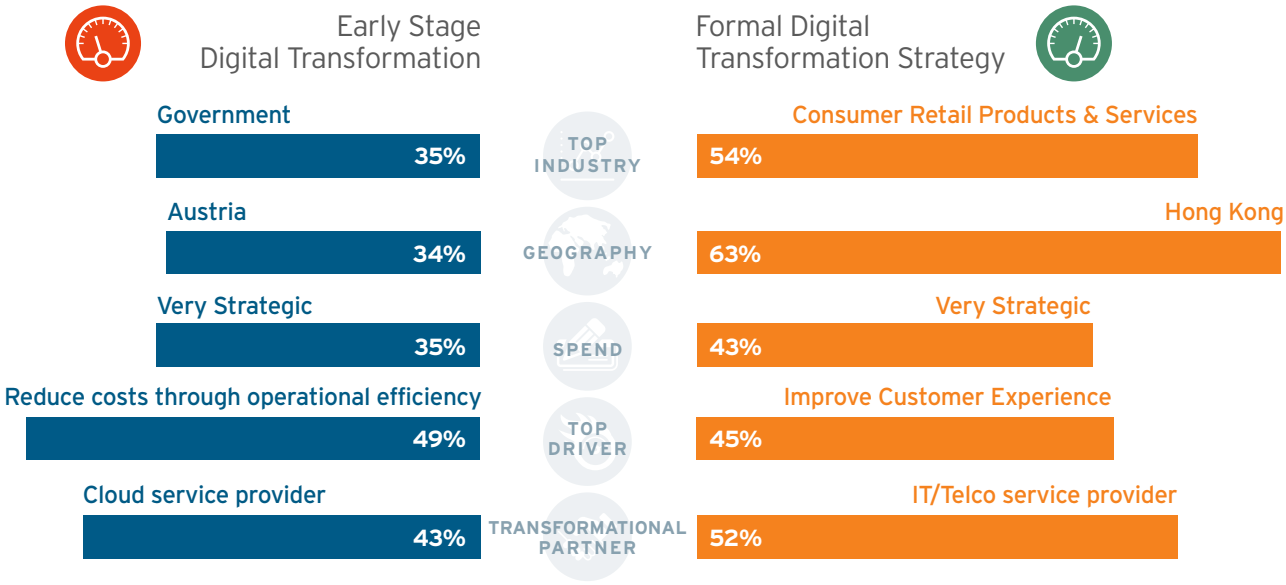
As reference points for their own digital transformation strategies, executives at organizations worldwide commonly identify with four key pillars of competitive differentiation to target with internal digital transformation initiatives. These four pillars are:

- Improving customer experience (or employee or citizen experience, depending on the use case)
- Improving operational efficiency
- Increasing the level of agility of the organization
- Better managing business risk

In exploring executive sentiment toward digital transformation, as well as the extent, focus and maturity of digital transformation strategies among organizations that are representative of the modern enterprise, this major study reveals some interesting leading-edge indicators of current status. Figure 1 shows experiences of companies with an early-stage or formal strategy for digital transformation, and among these indicators some highlights are shown in Figure 1.

Figure 1: Strategic vision: comparison of study highlights

(We have grouped companies that are presently formulating plans or have started without an overarching strategy into 'Early-Stage Digital Transformation' to compare them more easily with companies that have a 'Formal Digital Transformation Strategy.')
Source: 451 Research



With reference to Figure 1, some of the key takeaways of this study are:

- The principal business driver for those with a formal digital transformation strategy is to improve customer service, while those still in the formative stages are more focused on reducing costs through operational efficiency.
- Almost 60% of businesses with formal digital transformation strategies expect to obtain much more strategic value from their IT investments, envisioning continued infrastructural and business process improvements and new cloud-based capabilities to provide them with gains.
- Among those with a formal strategy, the standout industry is retail services, with 54% having a formal strategy. Among those that are still in the early stages, the government sector was the largest (35%).
- In addition to long-term commitment and executive planning, the study identified that choosing the right partner is a critical factor for success. IT services and telecommunications service providers, in particular, featured strongly as preferred partners, enabling and accelerating digital transformation programs for 52% of companies with a formal strategy.

- Of the four pillars providing the platform for digital transformations, the one given the highest priority – regardless of whether organizations were in the pre-planning or formal stages of digital transformation – was improving operational efficiency. Improving customer experience was followed by plans to boost agility and better manage risk.
- Businesses with formal digital transformation strategies target greater levels of improvement in agility than do their counterparts, with 59% also believing they are quicker to innovate as one consequence of their transformational moves.

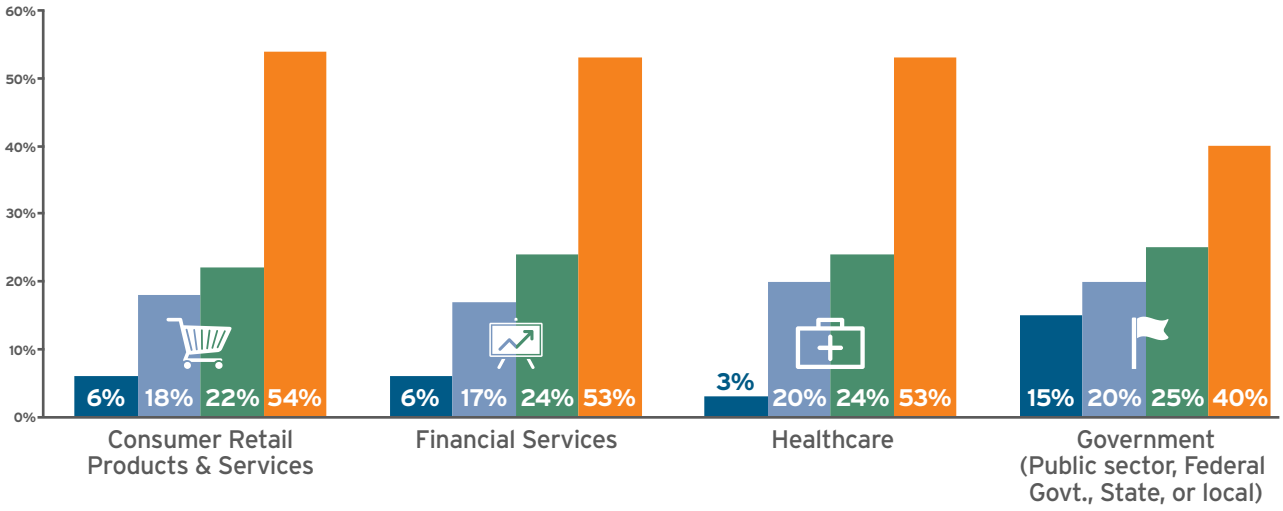
2. State of Digital Transformation Maturation

2.1 TRANSFORMATION PLAYS OUT IN ALL INDUSTRIES AND GEOGRAPHIES, IN ALMOST EVERY ORGANIZATION

We have entered an era of digital revolution, where competitive advantage depends on how well organizations use the enterprise digital infrastructure, and utilize the business applications and massive amounts of data flowing across it.

Our global survey clearly demonstrates that digital transformation is real and is happening now, and while some organizations, geographies and industries may trail others in their transformational maturity, less than 10% don't have any plans for digital transformation at all. In fact, companies that have a formal strategy for digital transformation and are actively digitizing business processes and operations actually now form the majority (51%), and most others polled for the study are starting projects in specific siloes of their business, or are actively planning their way ahead.

Figure 2: Vertical sector drivers of strategic maturity



- Businesses in the retail sector are further along with their formal strategies for digital transformation (54%) that any other vertical; the government sector is slower to plan (35% have not started or are still planning).

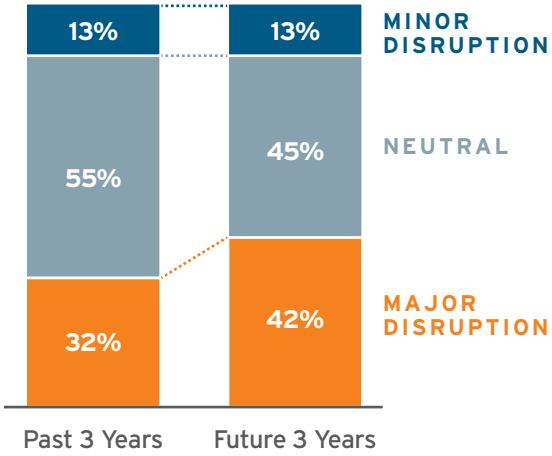
In geographical terms, Hong Kong was the leading territory for companies with a formal strategy, with 63% of those polled there, claiming they were already progressing their digital transformation. This appears part of an overall peak in data transformation activity towards Asia Pacific markets. Asia-Pacific countries occupied five of the top eight places for companies that regard themselves as being in the vanguard of those with formal transformational strategies.

2.2 MARKET DISRUPTION - PERSISTENT AND MORE INTENSE

This burst of activity is with good reason. We can expect massive and continued disruption in every vertical market for the foreseeable future. Consider what a range of digital disruptors has already done: from Amazon to XYZE in retail; from Apple Pay to Venmo in financial services; and from CrowdMed to ZocDoc in healthcare. These companies have changed for good what were once considered to be the acceptable operating norms of their sectors.

Mindful of the impact that such market disruption has had in their sectors, executives polled for this study perceive the overall level of digital disruption to be industry-wide and pronounced. There is also the expectation that disruption will not simply prevail but is likely to intensify in the coming few years.

Figure 3: Perceived Level of Digital Disruption: Prominent, Getting Greater



Source: 451 Research

Asked to rate the impact of digital technologies such as cloud, smartphone apps, IoT automation and intelligent software on their industries over the last three years, 32% of executives reported the level of disruption as 'major.' Looking forward three years, the sense is that disruption will continue to ramp up, with 42% expecting major disruption (see Figure 3) as the deployment of new digital technologies continues to play out in their respective fields, changing the competitive dynamics of their markets in the process.

From Borders Books and BlackBerry to MySpace and Yahoo, there are many examples of companies that have failed to change along with the business climate. Against such a backdrop, it is encouraging to see that the majority of enterprises are well underway with their digital transformation strategies. Competitive advantage depends on how effectively companies are able to deploy digital infrastructure, as well as how impactful new engagement channels are with customers, and how the massive amounts of data flowing across the organization can be harnessed, mined for intelligence and put to work. Businesses large and small will want to leverage their digital assets to the fullest – to jump-start refinements of their business operations or remodel processes entirely to reach new areas of latent customer demand.

The stakes are high, and the way ahead is not straightforward. Resources need to be delicately balanced between the competing demands of supporting day-to-day 'sustain the business' operations and 'change the business' strategic efforts. In what are still uncertain economic times, the one certainty is that digital transformation presents significant challenges and opportunities that will surely separate market leaders from market laggards in 2017 and beyond.

3. Four Pillars of Digital Transformation Strategy

As noted earlier, organizations identify with four main organizational goals for their digital transformation projects, which are centered around:

- Improving customer experience
- Improving operational efficiency
- Increasing the level of agility of the organization
- Better managing business risk

When asked to allocate 100 points across these four organizational goals as they relate to digital transformation, our global respondents overall put more emphasis on improving operational efficiency, followed by enhancement of customer experience, agility and better managing risk (see Figure 4). This held true regardless of which stage of the digital transformation the companies were in – early, mid-stage or well-along – with their strategies.

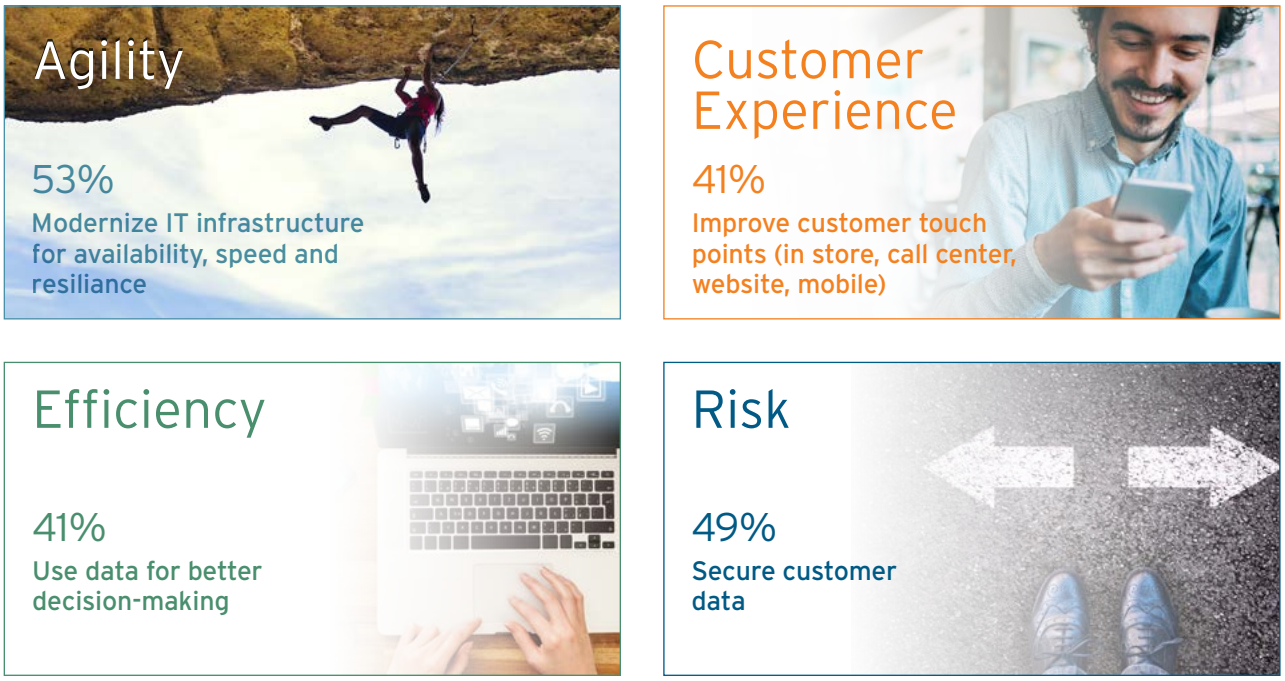
Figure 4: Organizational goals of digital transformation

Source: 451 Research

As a means of driving improvements in these four pillars, different organizations will target different priorities with different initiatives. What Figure 5 shows is that when addressing agility, 53% of respondents worldwide see 'modernizing their IT infrastructure' as one of the most effective ways to strengthen that pillar. Similarly, 49% of respondents believe better security around customer data is one of the top ways to improve their overall posture to risk.

We will look at how organizations are striving for improvements in each of these pillars in more detail.

Figure 5: How organizations are seeking to transform in the four key pillars for digital transformation



Source: 451 Research

3.1 IMPROVING CUSTOMER EXPERIENCE

The desire to improve customer experience overall is a principal driver of many digital transformation projects, and it ranks highly in overall importance here. Improving customer service in the store or branch, call center, website or mobile channel was the top pick overall (41%). This was the case among 43% of IT professionals, while 40% line-of-business executives opted for reducing customer friction points (i.e., making it easier for customers to do business with them) as their top objective when looking to improve on the customer experience. Only 31% of IT professionals picked this as one of their top three objectives.

Offering better self-service options to their customers ranked highly (34% picked it overall). Many companies are embracing the idea of customer self-serve options. Although it may sound counterintuitive, anyone who has been bounced between call center agents can perhaps understand that asking a question to a human doesn't always provide the best service outcome. Numerous organizations are now busy trying to automate as much of the customer experience as possible, right from the initial signup or onboarding process. They may still retain better-trained customer service representatives to deal with specific customer problems on a customized basis. But generally speaking, self-service does lead to better customer experience, and at lower cost.

Another key factor in improving customer service is generating a unified view of customer data to build deeper connections with customers. Here, companies are conducting analytics-based marketing initiatives based on customer behavior for product or service offers that are personalized to the individual customer. For example, using data to dynamically adjust product prices on offers in response to demand, weather, inventory levels and proximity to closing time. This is especially relevant for the financial services and retail industries, which have an abundance of customer data, but insight-driven experiences are difficult without a clear understanding of the target customer. The problem is not a lack of data; it's making sense of this data and being able to act on it, using analytics to support decisions about what to do and when to do it. Interestingly, analytics-based marketing ranked relatively low among business respondents (29% of them picked it), but 35% of IT professionals opted for it. But this isn't just about deployment of advanced software or digitization of an operation; as with any element of digital transformation, it requires changing processes and the way people work.

3.2 BOOSTING OPERATIONAL EFFICIENCY

Making operations more efficient encompasses myriad factors and ranked as the highest priority of the four most common business outcomes for a digital transformation project. Almost half (49%) of line-of-business executives rated serving customers better (using data for better decision-making) as a primary objective for transforming operational efficiency. This signals a desire for proof points and decisions based on data and analytics, rather than hunches. There is more of an emphasis in the US and Europe on better serving customers as part of operational efficiency improvements then there is in Asia, where using IT as a strategic differentiator ranks higher (43% put it in the top three, compared to 35% in the US). In this light, operational efficiency has more to do with innovation than streamlining. That said, optimizing the use of resources (be they human, infrastructure, or goods and materials) still ranks pretty high as a factor in improving operational efficiency.

3.3 BUSINESS AGILITY ANGLES

Business agility can be difficult to define, although survey respondents clearly see a modernized infrastructure as the top factor in an organization becoming more agile. More than half of all respondents (53%) picked this among the top three objectives, and in the US, it was even higher at 56%. Business agility is viewed as enabling delivery of products and services more quickly while being more resilient. The ambition to better harness the power of data analytics for better insight ranked as a secondary objective in the poll, ahead of some other factors that may be considered more common examples of agility. Harnessing data analytics was ranked particularly high in the UK, where 56% of respondents put it in their top three. It is seen as a way of making business more responsive to a changing need, and hence more agile. That makes sense when considered as the ability to anticipate changes to current customer demands. Respondents in Europe (43%) talked up embracing new business models more than the global average (38%), which may be an indicator of a pent-up demand to change the way business is done in many parts of Europe.

3.4 MANAGING BUSINESS RISK

Risk is a constantly moving target, and in the digital age, that target is moving faster than ever. One surefire way to alienate customers is to lose their data or have it fall into the wrong hands, so it's no surprise that securing customer data is a top three objective for almost half (49%) of all respondents, and was top in each of the three regions. Where privacy regulation could once be dismissed as a continental European obsession, it is now of global importance as people start to understand they are leaving an increasingly rich data trail everywhere they go online. They are placing a higher value on their personal data, and adherence to privacy requirements is being seen more as a key part of managing risk. About 38% of global respondents put it in their top three. Adherence to regulatory obligations differs by region, however, with 28% of Asian businesses making it a top-three objective, compared to 38% and 35% in the US and Europe, respectively. No enterprise IT operating environment is completely secure, so multiple layers of security and a more proactive approach is needed. Avoiding denial-of-service and similar attacks ranked quite low among respondents (29% overall put it in the top three), but that's probably because they know that there's only so much they can do to avoid them. As we have seen with the recent rash of ransomware attacks, the key is to be prepared to deal with them if/when they happen, and many choose to rely on service providers for help with this.

4. Digital Transformation in Practice

Digital transformation requires much more than the implementation of new technologies. The real gains are delivered when an organization is transformed in such a way that it is able to fully realize the potential that digitization offers. Major digital transformation strategies are centered on re-envisioning the customer experience, reinvigorating operational processes and rethinking business models. Organizations that are succeeding with digital transformation are changing how functions work, they are redefining how employees interact, and they are evolving the boundaries of the organization in a bid to remove any barriers between them and their suppliers and partners. And all the while, there is a steadfast fixation on the customer.

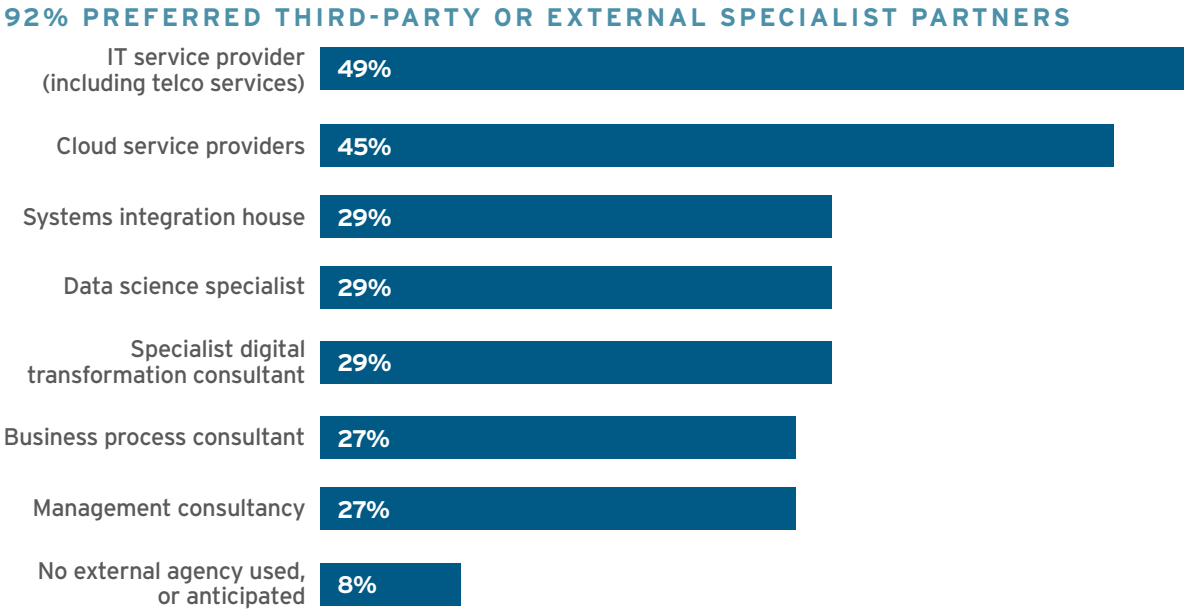
Given the intense market pressures that are being felt in every organization, enterprises need to transform the way they do business quickly, securely and methodically, and knowing where to start – and how to maintain momentum – is critical.

Traditionally, organizations have worked with various external partners such as IT and business process services suppliers, telecommunications services providers and systems integrators to deliver IT infrastructure services, maintain business services and drive operational efficiency at scale. There is no difference with digital transformation projects (see Figure 6).

In addition to long-term commitment and planning, the study found that a range of partners will be required to deliver the full value of a transformational effort, and choosing the right partner could be deemed a critical factor for success. IT service providers and telecommunications service providers, in particular, featured strongly as preferred partners, enabling and accelerating digital transformation programs, and ultimately helping bring controlled order to the process of change.

Figure 6: A majority of enterprises see a need to use a variety of partners

Q1: Do you use or expect a need for any of the following third-party or external specialist partners in support of digital transformation? (Base size; n=1402)



Source: 451 Research

Service provider partner choices are important because new options such as public cloud, hybrid cloud and multi-cloud services are starting to play an increasingly important role amid this upheaval. In addition, the emergence of other macro IT trends, including big data and advanced analytics, intelligent automation software, and IoT are steadily propelling the IT infrastructure and the business applications they carry to a point where they will play an even bigger role. And because of the enormous requirements for data speed, network reliability and processing power these modern applications demand, the core digital infrastructure warrants special attention.

Not all of the talent and resources needed to navigate these waters will be on tap internally: advanced analytics skills, data scientists, application workload management, fog network, cybersecurity, remote edge computing support, the list goes on – these are areas where organizations will often call for specialist third-party support. Critical milestones on the transformation roadmap could well be the points at which some of the transformational fundamentals are entrusted to third-party service providers. Assured service delivery via a third-party provider partner allows an organization's internal IT to put more muscle behind sorting out the big business issues and driving innovation.

For well-informed strategic decisions that will help organizations stay ahead of the curve, business leaders need to fully assess these issues. So let's see how some of these factors play out in the field currently, and how progressive organizations are being in pressing ahead with their transformational programs.

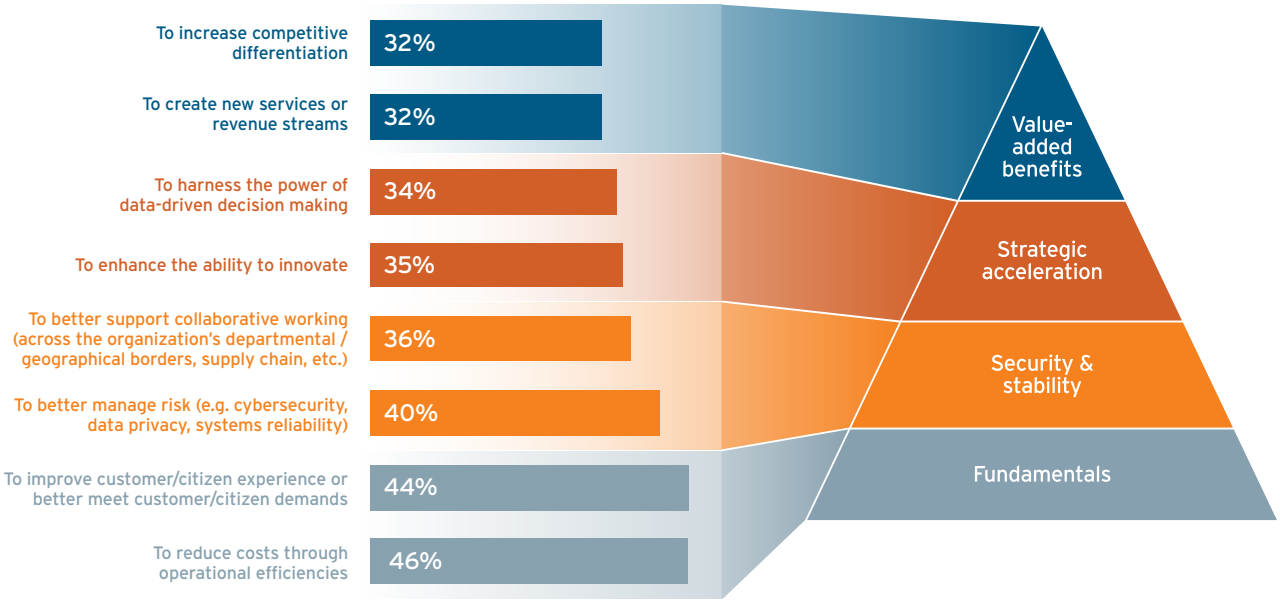
4.1 BUSINESS DRIVERS OF TRANSFORMATION

Public sector and commercial organizations alike face some common pressures from customers, employees and competitors to start or speed up their digital transformation plans. In practice, though, our study shows that digital transformation is playing out differently, depending on the geography and vertical sector in which an organization operates, the quality of its infrastructure services and its ability to innovate. Not only are organizations transforming at different paces, but they often have different aims and objectives. The study reveals that in Europe, organizations place a much higher importance on new revenue streams than do peers in other regions. Across Asian businesses, the intention is to strive for increased competitive differentiation.

An overriding primary driver for digital transformation that holds true for IT and line-of-business leaders around the world is the perennial need to reduce costs. This appears to be top-of-mind among 46% of executives, who are resolute in their application of digital technologies to see through initiatives targeted at cost-saving operational efficiencies. Beyond the focal point of operating costs, almost as many organizations (44%) strive to address one other big fundamental imperative: for them, the key transformational driver is to improve overall customer experience (or citizen experience in government and public sector circles) in order to better meet customer demands.

Figure 7: Assessment of needs analysis and business drivers for digital transformation

Q5: In your opinion, what are the three main drivers for digital transformation? (n=1402)



Source: 451 Research

Every digital strategy is shaped and motivated by business need. As Figure 7 illustrates, in the context of enterprise digital transformation strategies, these needs arrange into a classic Maslow's 'hierarchy of needs' format, with cost efficiency and customer satisfaction as the foundational elements needed for an organization to survive and thrive. In addition to these two fundamentals are a raft of specific objectives that can be identified as drivers for digital transformation projects, and that offer layers of additional value to the payback of transformational efforts.

The better management of risk is one (in myriad forms, but here principally addressing those that are associated with cybersecurity, data privacy and systems reliability). Risk management features on many corporate agendas, and 40% of organizations rate this as a key driver of desired digital transformation outcomes. Improved support of collaborative working practices (36%) is seen as another, where workflows are better coordinated across the organization and without the confines that so often are imposed by departmental boundaries and office walls (and that ultimately need to extend beyond an organization's geographical borders and across the supply chain).

With solid foundational steps, and with the lower-order needs of organizational security and stability satisfied, respondents recognize that digital transformation programs will then begin to deliver the more strategic and value-added benefits that provide competitive differentiation. These take all shapes and can exhibit a variety of forms.

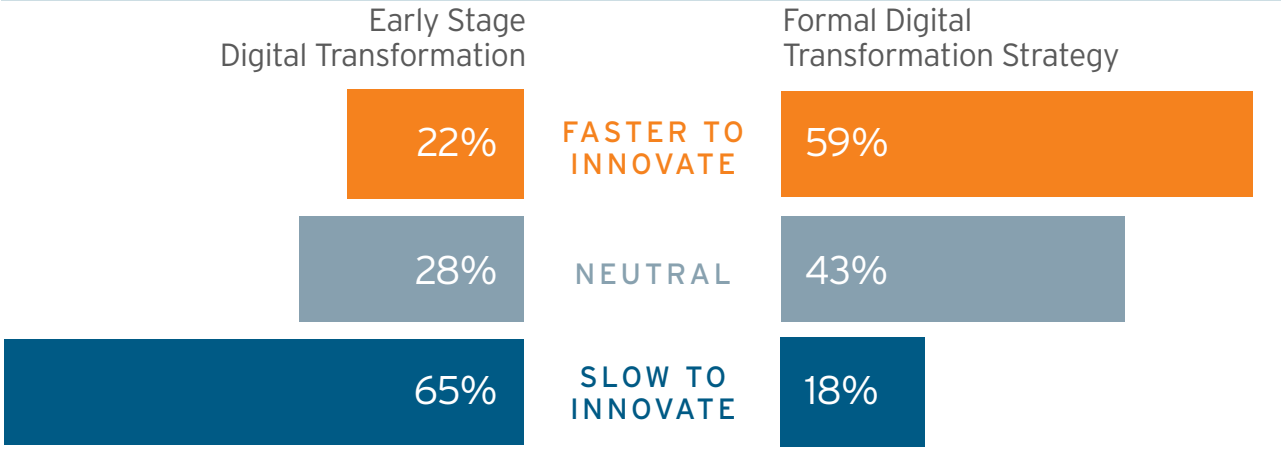
In our study, 34% of respondents said they would particularly seek to better harness the power of data to empower data-driven decision-making, and to enhance their ability to innovate (35%). Specifically, 42% of companies operating in the retail and consumer goods sector said that real-time and predictive analytics is the most positively disruptive technology they could potentially adopt as part of their digital transformation. They could improve competitive differentiation by using advanced analytics to provide the unique insights about markets and customers that are so often needed to shape new product developments or service enhancements. This is one of the end games of digital transformation, but there are scores of applications and platforms that can help enterprises capitalize on their data in other ways, by allowing them to:

- Speedily introduce infrastructure for on-demand services.
- Gain real-time insight into business process and performance.
- Reach customers in real time across multiple platforms.
- Secure platforms and data flows in a highly dynamic threat landscape.
- Deliver an exceptional personalized user experience.

Again, these play out differently across different sectors, according to need and priorities. Collectively, they could help resolve some seemingly intractable industry problems. For example, a financial services firm gathering detailed information on online account-holder behavior, click by click, uses big data to truly understand the insights buried in that customer data to interact in real time. Elsewhere, a healthcare provider that is conducting experiments in mobile health education marketing in the cloud, and building digitally enhanced hosted customer service applications in another cloud, applies multi-channel software tools to monitor the end-to-end experience. Meanwhile, an insurance firm that is looking to improve the balance of its automobile portfolios can reassess its policy cost structures through analytics-based underwriting and pricing based on driver telemetry data.

What is common across all these use cases is that with the latest digital technologies such as cloud and managed services, IoT and machine learning, and big-data and advanced analytics applications, businesses can start to interact, interoperate and collaborate more easily and more securely across all internal and external channels in search of new opportunities.

Figure 8: Digital transformation leads to faster innovation



Source: 451 Research

The ability for an organization to be innovative with new digital technologies – such as biometrics or voice interfaces in consumer markets, or location-based sensors and Wi-Fi-enabled smart cities in the public sector – seems to have a direct correlation with digital transformation maturity. When asked to rate their organization's ability to innovate, 59% of those with a formal digital transformation strategy already in place rated their organization as more capable and faster to innovate; 18% in that group said they believed that their organization was slow to innovate. Looking at those in the early stages of

planning, the numbers are flipped; 65% of respondents said that their organization was slow to innovate, and only 22% said they believed their organization to be quick and capable (see Figure 8). The overarching intention of digital transformation is to enable innovation. The influx of new technologies and more finely tuned practices and processes will help the business transform – but only if the organization has fully embraced the idea that the 'old way of doing things' will no longer work.

4.2 BUSINESS BARRIERS TO DIGITAL TRANSFORMATION

Figure 9: Biggest transformational barriers identified

Q5: In your opinion, what are the three main barriers to digital transformation? (Base size; n=1402)

Source: 451 Research

The inherent complexity of digital transformation interventions does appear to introduce some significant hurdles; this is true even for organizations making good progress with the execution of their digital strategy. The inflexibility of legacy infrastructure, aging applications that are tightly coupled to older operating systems and databases, and inadequate network bandwidth or resilience are a few of the issues that organizations have to address. They also have to contend with 'softer' issues, most notably those created by outdated work practices and organizational silos, as well as the prevailing concern that modification of any existing infrastructure asset or business operation could potentially impact the safeguards already in place to defend against data loss, vulnerabilities and breaches.

Among the verticals, there is some differentiation regarding the biggest barriers to change. For example, respondents in government and public sector agencies cited organizational silos and a lack of funding as being significantly higher hurdles than did respondents in the commercial sectors. While the vast majority of organizations are looking to embrace digital, Figure 9 reveals that inflexible legacy IT systems, unreliable infrastructure and rigid operations are the major barriers to digitization and transformation projects that they need to overcome:

- **Need for agility.** About 35% of surveyed respondents identified inflexible IT systems and lack of operational agility in their current environment as their top barrier to digital transformation. Business agility is vital to rapidly adapt to changes in market and customer demand in productive and cost-effective ways.
- **Need to uncouple legacy practices.** About 33% of the respondents said they believed the challenge of overcoming organizational silos and outdated work practices remains a hindrance. Many organizations are using multiple and unique applications and platforms across different lines of business. The challenge is to modify these diverse and traditionally divided ecosystems into a cohesive whole. Seamless application performance and user experience are aspects that many of the web-native digital disruptors have worked to perfect.

- **Need to ensure the safe custody of data**. Security threats are intensifying, and data-protection requirements are continually changing as regulatory pressures shift and new compliance obligations crystallize. Without assurance that all forms of enterprise data are secure, the level of corporate anxiety builds about potential exposure at a time when more data is being collected, used and shared within multiple platforms, and the risk of data management mishap and reputational damage is rising. As many as 31% of the respondents remain unconvinced that their security regimes are adequate. They see that the potential for failure will intensify as the business becomes more digitized.

Whatever the vertical, if the IT infrastructure underperforms or lacks flexibility, then it is sure to jeopardize multiple areas of operation for any modern organization. As such, there is tremendous benefit to be gained by combining the latest technologies with a highly reliable and dynamic network. Enterprises require scale and elasticity for applications or services to be spun up quickly, and managed efficiently and securely with limited resources. These are all aspects of IT systems that can have the greatest impact on making business more agile.

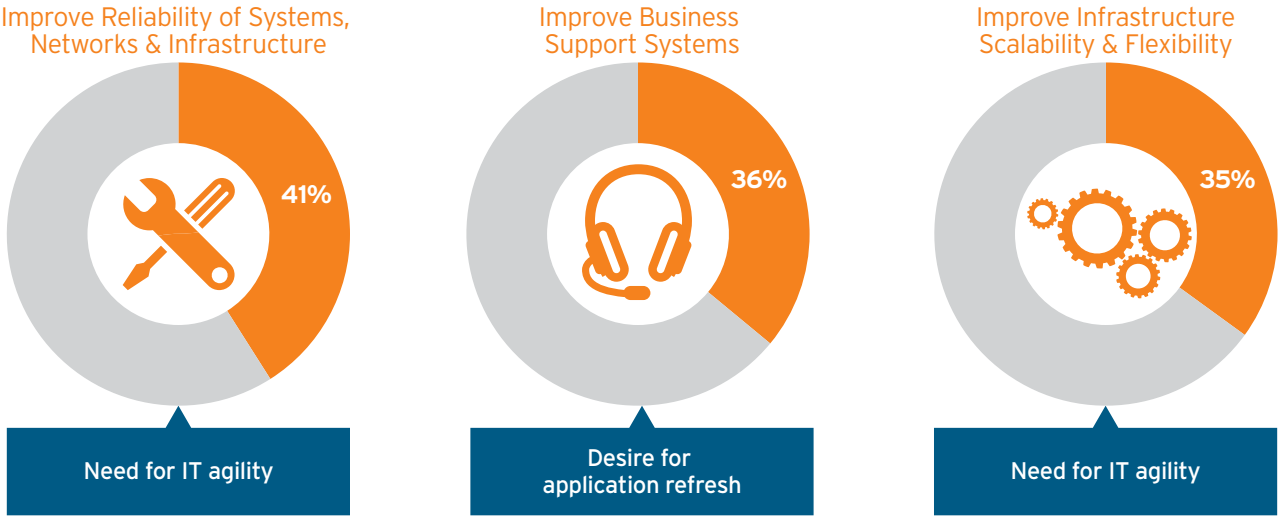
Equally, moving commodity technology infrastructure to a managed environment, for example, can help simplify the foundational steps of digital transformation. Its adoption can also help free up scarce internal IT resources, which can be diverted from mundane issues of maintenance and operations toward the strategic acceleration and delivery of value-added business benefits. Of course, when considering the use of any IT infrastructure sourced outside the enterprise walls, security remains of paramount importance. Largely, infrastructure service providers do have core security practices and operations that exceed most enterprise standards, however. The automated security practices of a service provider's threat-detection procedures, and the response and mitigation systems that run on and around its infrastructure are more sophisticated than even the most hardened enterprise environments.

4.3 IT-LED PRIORITIES FOR DIGITAL TRANSFORMATION

With the need for improved infrastructural and organizational agility an absolute, the IT-led priorities in digital transformation quickly become apparent.

Figure 10: Top three IT-led priorities for digital transformation

Q5: In your opinion, what are the three main IT-ed priorities in digital transformation? (Base size; n=1402)



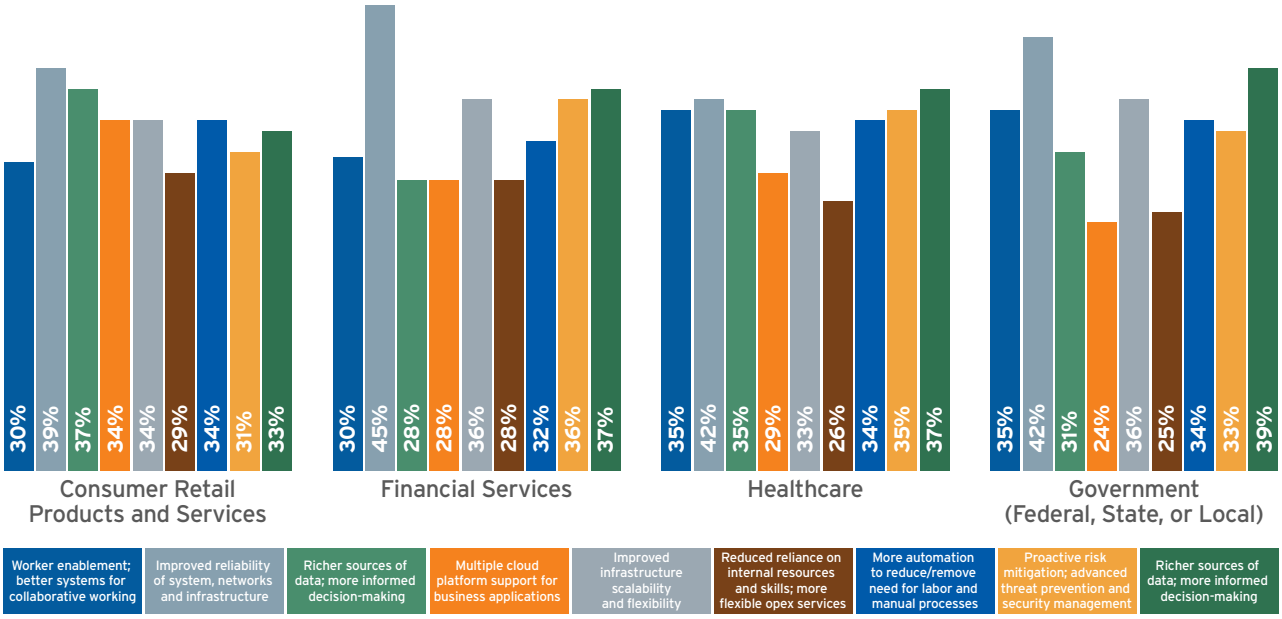
Source: 451 Research

As seen in Figure 10, a majority (41%) of all respondents expressed an overriding need to improve the reliability of systems, networks and infrastructure, while 35% viewed improved infrastructure scalability and flexibility as their main IT-led imperative in regard to digital transformation. These surpassed other priorities, such as increasing the level of automation to reduce or remove the need for expensive labor and manual processes. This is something organizations in the US and Europe prioritized more than peers in other locations. For example, a 10-point differential was evident compared to their peers in Asia-Pacific, with that region's accessibility to lower-cost labor markets.

Nuanced differences appeared among verticals here as well, with 37% of retailers putting greater emphasis on finding richer sources of data for more informed decision-making, which was almost 10 points higher even than financial services firms (28%). Within government agencies and healthcare markets (both 35%), worker enablement and better systems for collaborative working were flagged as one priority area, and improved business support systems (with a nod toward the need for legacy technology/applications refresh) was also high on the agenda (39% and 37%, respectively).

All of the verticals prioritized IT reliability of systems as a top IT-led priority (ranging from 45% in financial services to 36% in healthcare – see Figure 11).

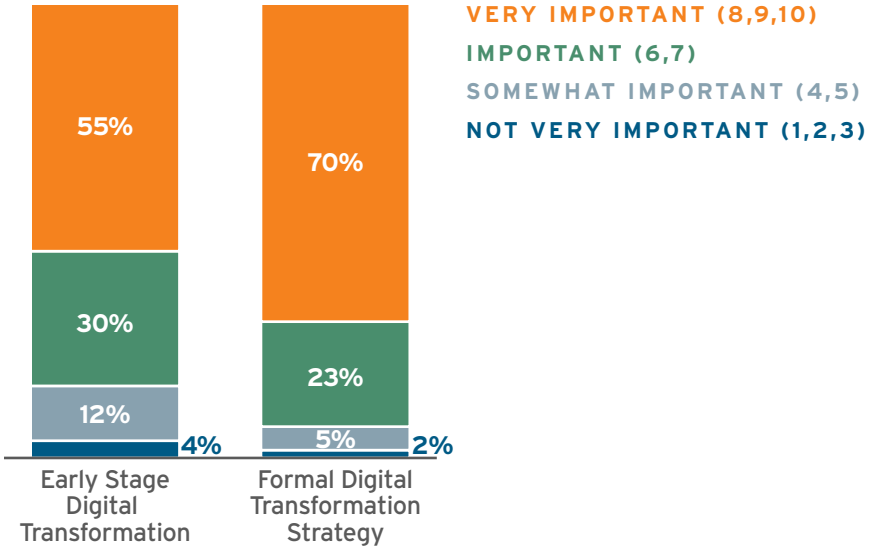
Figure 11: IT-Led priorities in digital transformation



- Each of the verticals studied has IT systems as a top priority (ranging from 45% in financial services to 36% in healthcare).
- More than one-third of organizations in financial services and healthcare (37%) are seeking ways to improve their business support systems for more informed decision-making.
- Use of real-time and predictive analytics is viewed by 42% of retailers as the most positively disruptive technology to adopt as they search for richer sources of data (37%).
- Prioritization of worker enablement and better systems for collaborative working (35%) prevails in healthcare, as it does in government agencies.

It is a given that a highly reliable IT environment is the basis for better operational agility. And for an increasing number of organizations, this can manifest in the form of cloud. Enterprise adoption of cloud is causing a major rethink of how IT services are best delivered and a gradual change in how IT is consumed. Enterprises are increasing their use of third-party service providers to host their business services, using both private and public tenant options to complement or replace their on-premises systems. The adoption of IaaS and SaaS are approaches that can make an enterprise more efficient and agile in responding to change. However, as an increasing number of enterprise executives have realized, the cloud is only as useful as the manner in which it is applied.

Figure 12: Shift to cloud services critically important to digital transformation initiatives



Source: 451 Research

Cloud services are viewed by 63% of all companies in the study as being very important as an enabler of digital transformation, and this proportion increases to 70% among enterprises that are currently executing on their strategic transformational plans (see Figure 12). That said, although the adoption of cloud services is a necessary consideration for digital transformation, it is not sufficient on its own.

Progressive enterprises are seeking service provider partners that not only can cost-effectively host platforms on their behalf, but that can take part in managing them to ensure that their business goals are met. The advantage of partnering in this way is that enterprises can source a reliable hosted business service, but can also gain access to the process knowledge and the tried-and-tested operations of the service provider. Enterprises are seeking service partners that can bring expertise to the routine task of running specific workloads or application tasks, whether as SaaS or as a hosted business process. And, as an extension of this, they are seeking IT outcomes such as application modernization and transformation (such as moving enterprise applications onto the public cloud, or into a private hosted or hybrid cloud setup). This trend is validated in the study. Among the vanguard of companies with a formal digital transformation strategy, 52% are working with their preferred IT or telecommunications service provider partners, and consider workload migration as a priority for outsourcing.

Of the 92% of all companies (see Figure 6) that stated a willingness to use a third-party transformation partner, 45% said they see a need for a cloud service provider to assist them in their project. This signals that enterprise attitudes have undergone a sea change in the last year, with retail banks and insurance firms, pharmaceutical companies and healthcare organizations seemingly learning they can operate with agility and more securely in the cloud than they can out of their own datacenters. Indeed, companies left outside of these on-demand environments may well find it progressively more difficult to change as quickly as business requires. We could quickly be reaching a tipping point when the convergence of multiple clouds across the enterprise – data, applications, infrastructure and personal clouds – will fundamentally change the way businesses operate. And disruptive IT delivery models, most particularly the cloud, require rethinking not only infrastructure and operations, but also processes and roles of employees, both in IT and lines of business.

REGIONAL PRIORITIES SHAPE STRATEGIES

- Increasing the level of automation to reduce manual processes is prioritized in the US (38%) and Europe (35%), with a 10-point differential over Asia-Pacific and its lower-cost labor markets, where improved reliability (42%) takes precedence.
- Emphasis for 37% of European commercial and public sector organizations is on the creation of new services and revenue streams compared to 27% in North America, whereas Asian businesses see increased competitive differentiation as the principal driver of transformation (35%).
- Hong Kong is the leading territory (63%), with five Asia-Pacific countries in the vanguard of those already following a formal digital transformational strategy (Germany, India, Japan and China show most strategic maturity, in that order).
- North American (49%) and European (42%) organizations put greater emphasis on better serving customers as part of operational efficiency improvements than is seen in Asia (35%), where using IT as a strategic differentiator ranks higher (43% put it as a top three objective compared to 35% in US).
- Respondents in Europe (43%) want to embrace new business models more than the global average (38%), an indicator of a pent-up demand to change the way business is done.
- Adherence to privacy requirements is key to managing risk for US organizations (42%), as is adherence to regulatory obligations (38%), which is similar to Europe (35%).

5. Transformational Impact on IT Investments

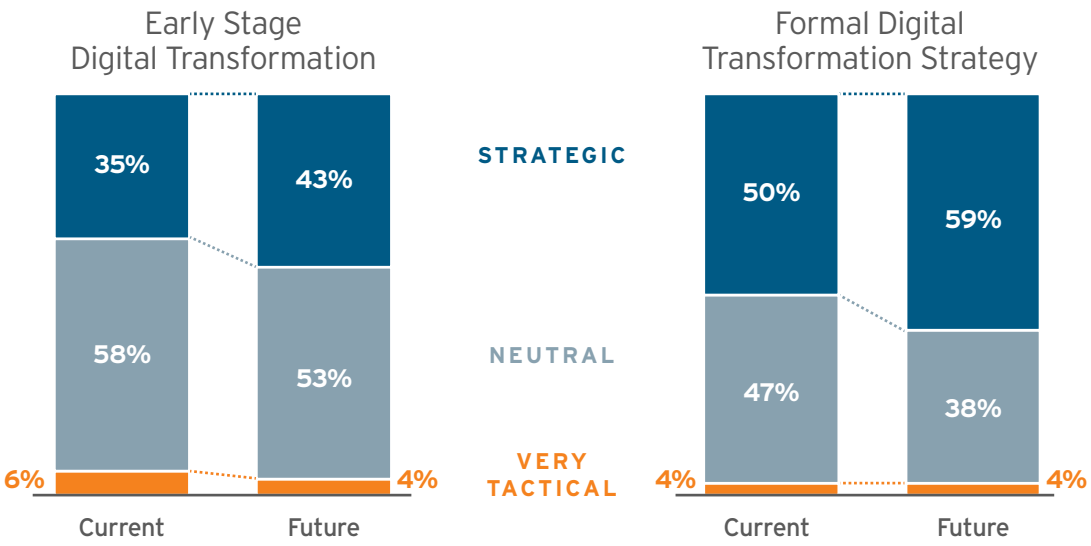
We have seen how digital transformation mandates are almost inextricably linked with enterprise endeavors to search for the operational efficiencies that digitization promises. But the reality is that most organizations still devote the majority of their resources to keeping their legacy environments up and running. Despite the internal fiscal expectations and external market pressures to deliver ROI, very few businesses are gaining the full value of technologically enabled change, even with the technologies they have already deployed. Many companies already took on significant effort and expense in implementing ERP, CRM and other technology-enabled change programs, but have obtained only basic levels of value from their investments. However, some evidence obtained in this study suggests a level of improvement on this position in the context of strategic digital transformation.

Asked to rate their competing IT budget allocation priorities as they relate to current or planned digital transformation initiatives, true to form, the lion's share of investments were apportioned to maintaining existing infrastructure. This was to the detriment of funding a shift to newer types of on-demand, flexible alternatives such as cloud-based infrastructure, moving toward the adoption of applications delivered as a service, or creating new strategic applications that are cloud-native.

Over time, however, as companies progress with their digital transformation programs, the expectation among respondents is that cumulative cloud adoption and the like will gradually move the IT investment needle away from sustain-the-business spending toward more strategic change-the-business investments and competitive differentiation. Some early evidence of businesses breaking this cycle of 'maintain and sustain' was captured in the study and illustrated in Figure 13.

Figure 13: Shift to digital critically important to strategic spending

Q16: On a scale of 1–10, how do you expect digital transformation to shift your IT spending over the next 5 years?



Source: 451 Research

Roughly 59% of businesses with formal digital transformation strategies expect to realize more strategic value from their upcoming IT investments, up from 43% today. By envisioning infrastructural and business process improvements and new cloud-based capabilities, they expect to reap bigger returns from their foundational investments for digital transformation.

While new application deployment is currently the most common type of adoption scenario for cloud computing, over time, cloud adoption will extend as the extent to which it becomes possible to modernize, migrate, integrate or 'lift and shift' applications or workloads into the cloud broadens. As reliable third-party workload-migration services come online, modernization and the creation of SaaS-like versions of applications will become a more viable choice for organizations wanting to put more applications and business logic into the cloud. And in the context of digital transformation, this is where there is greatest opportunity for innovation.

5.1 KEY PERFORMANCE INDICATORS TO MEASURE TRANSFORMATIONAL OUTCOMES

Business leaders who head successful transformation programs understand the outcomes they are looking to achieve. They adopt key performance indicators (KPIs) to provide the visibility needed by colleagues throughout the enterprise to check the status of digital transformation and gauge whether it is meeting its objectives. They take pragmatic steps to measure what can be measured to prove the value and progress of their transformational efforts. These KPIs might include employee-satisfaction scores; customer-satisfaction measures; churn rates; time to market, or the frequency or speed of new services/products launches; throughput, stock or inventory levels; and order-to-cash cycles. There are numerous options and combinations, and they are all important indicators of competitiveness.

The study shows that organizations are emphasizing cost-saving operational efficiencies, so improvement in the time to respond to stock inquiries, process sales orders and manage customer requests is understandably viewed as one vital statistic. This is one of three top metrics favored by organizations as a proof point of the impact of digital transformation on revenue and costs.

As illustrated in Figure 14, 35% of organizations count response times (to inquiries, sales orders and change requests) as one of their overall top three metrics. To give another perspective on changes in operational efficiency, just as many organizations (35%) gauge changes in employee productivity, while others prefer measures such as throughput (22%) as one of their top three leading indicators. Different measures are needed to assess impact across each of the four pillars, and the different KPI preferences of study respondents for each pillar are illustrated in Figure 14.

Figure 14: Key Performance Indicators to measure changes across four key pillars

Source: 451 Research

5.2 MEASURING THE PACE OF TRANSFORMATIONAL CHANGE

The rate at which any of these preferred KPIs change will depend on the focus of the digitization initiative and the quality of its execution, and there may be some unrealistic expectations about how long digital transformation programs will take.

Organizations that have a formal strategy in place are perhaps (understandably) more realistic about the timeline than those in the early stages. For example, among those in the early stages, about 41% believe transformation can be achieved in one to two years, while only 29% of those with a formal strategy believe that is possible. When asked whether they believe three to five years is a more appropriate time frame, however, both groups were in close agreement, at 41% and 42%, respectively.

6. Lessons Learned

Very few organizations have yet to begin their digital transformation projects, and we have found that the majority are gaining some value from transforming parts of their operation, and are only part of the way toward achieving the fuller potential of digital transformation. Work is in progress. In this context, this study has revealed trends that identify four guiding principles of the enterprise digital transformation strategy.

6.1 FIXATE ON THE CUSTOMER

Customer experience continues to be a center of gravity for business competitiveness. From modernizing back-end customer database infrastructures and streamlining fulfillment processes to providing persona-based marketing, the way to win the hearts and minds (and wallets) of customers is through enhanced technology-enabled customer experience. Excellence in customer service remains the mantra, and digital initiatives help remove friction points and provide channels for personalized engagement, as well as new ways to enhance customer satisfaction.

6.2 BE WILLING TO USE A VARIETY OF PARTNERS

We see three aspects of business being transformed most often, namely: the way an organization uses data and business information, how it organizes and runs its business processes, and the technology platforms it uses to underpin its operations. Entrusting some of the IT fundamentals to a partner and leveraging the cost/benefits of such a move stands as a critical element of the transformation roadmap. Data shows that enterprises are increasingly turning to third-party providers – managed IT partners and cloud specialists in particular – for services to support their digital transformation programs.

6.3 BUILD IN SECURITY, LAYER BY LAYER

There's no silver bullet for security; it can't be bolted onto fundamentally insecure infrastructure. There needs to be multiple layers of network-based security. Security is not just about privacy concerns or protection against cyber threats, but about fundamentally securing company data throughout its lifecycle. Key to meeting this challenge is prioritizing assets and segmenting according to risk, with appropriate controls and safeguards applied to each.

6.4 ENGINEER A CLOUD-ENABLED ENTERPRISE NETWORK

Enterprises are increasingly relying on cloud infrastructure to improve scalability and utilization, and to maximize these gains, organizations need to build industrial strength into the underlying connectivity. Improved reliability of networks, systems and infrastructure is the single biggest IT-led priority. As multiple clouds come into use, the need to connect at speed and without failure with more diverse and traditionally divided ecosystems becomes paramount.

7. Appendix

7.1 METHODOLOGY

The survey data cited in this report was collected in March and April 2017 by 451 Research as part of an independent global study of enterprise digital transformation, conducted in 12 countries across North America, Europe and Asia-Pacific. Using a combination of web-based surveys and telephone-based interviews comprising more 30 questions, we interviewed 1,402 decision-makers.

The study was commissioned by CenturyLink.

7.2 STUDY DEMOGRAPHICS

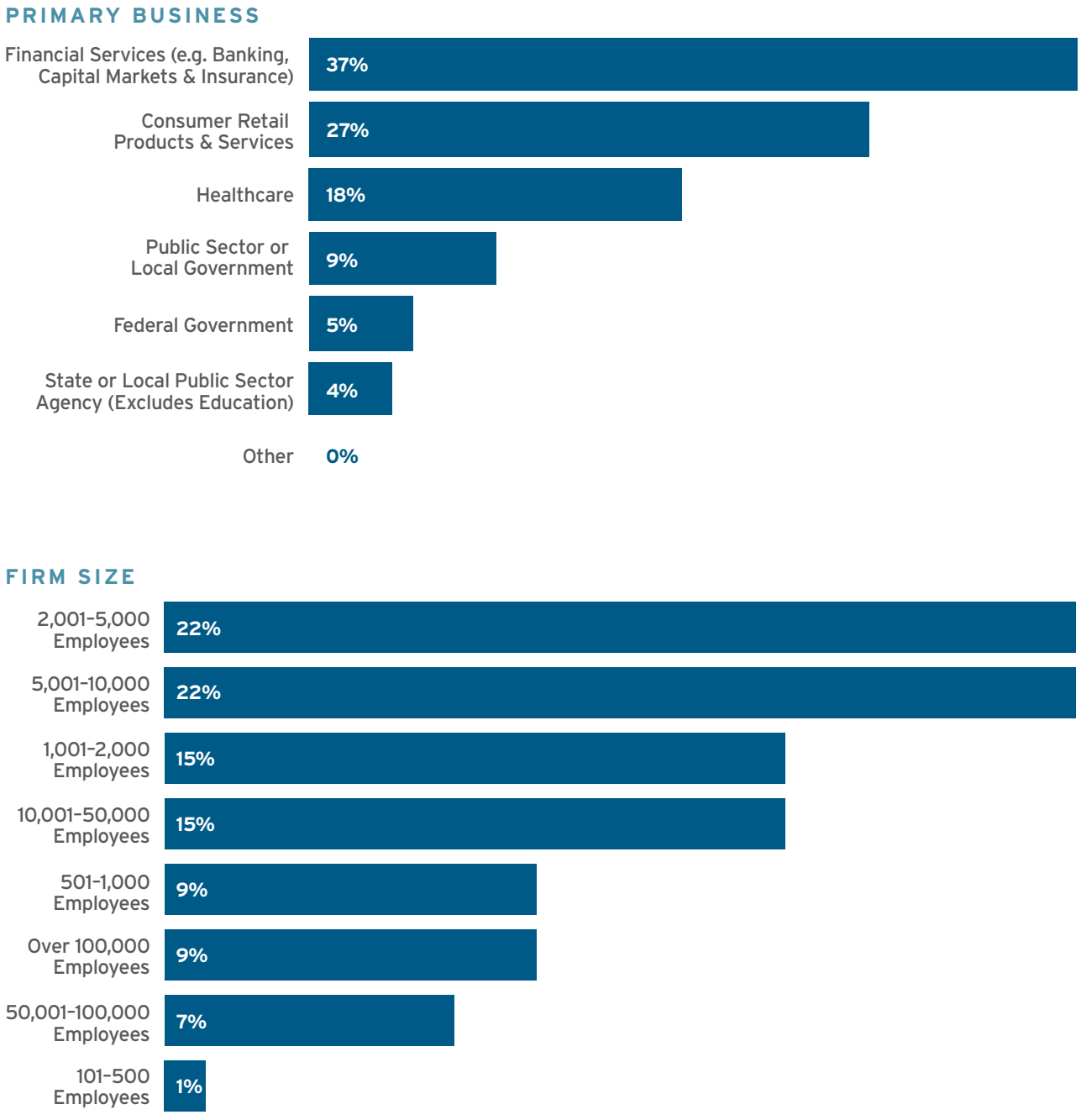
For the purposes of this report, we reviewed and analyzed data derived from a sample of companies in financial services, retail and consumer goods, healthcare, European public sector and US federal and local and state government agencies based in three strategic geographical markets: North America, Europe and Asia-Pacific.

We polled executives at companies with 501-100,000+ employees in the US, Canada, Germany, UK, Switzerland, Austria, Australia, China, Hong Kong, India, Japan and Singapore.

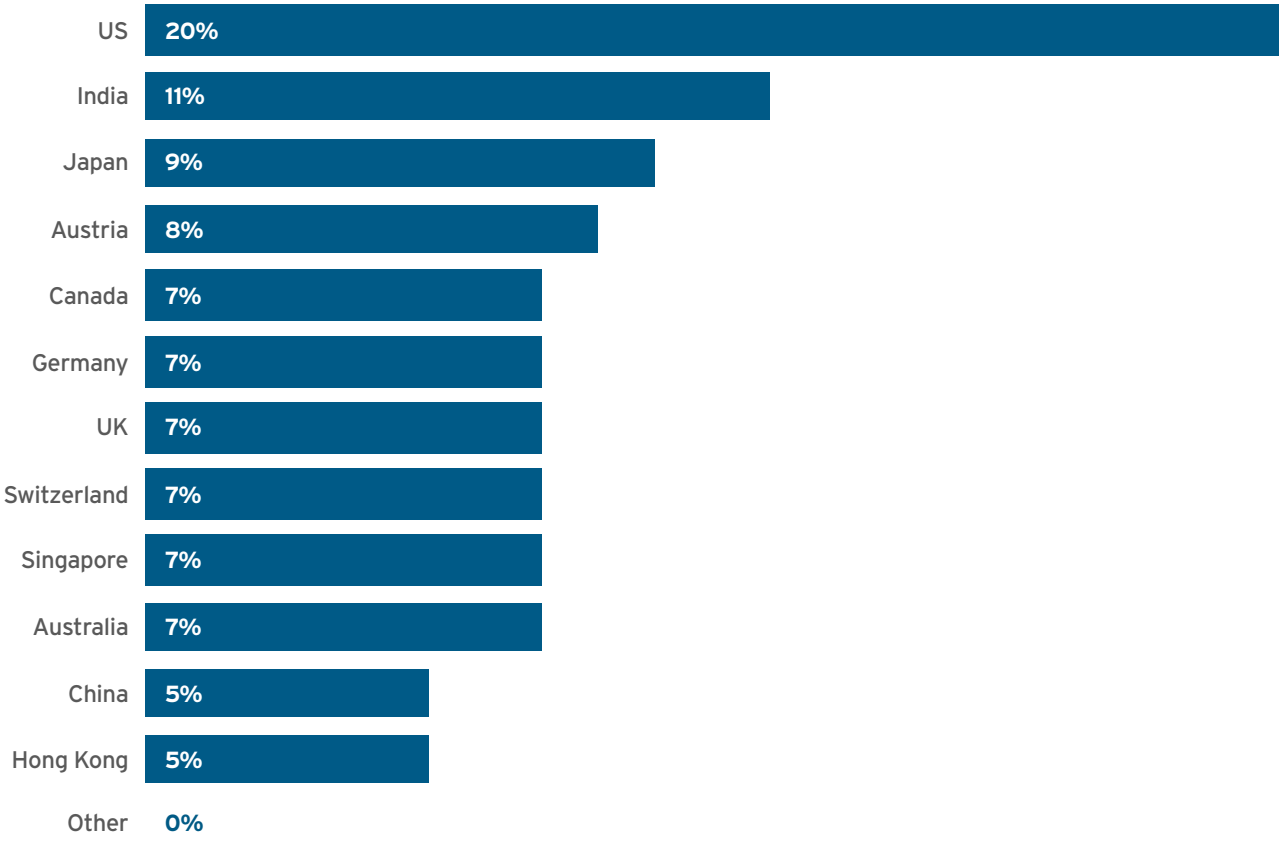
All respondents have primary responsibility for making purchasing recommendations and influencing decisions and strategy about digital transformation initiatives, or have significant decision-making authority. Roughly 53% of respondents have direct responsibility for decisions about their company's digital transformation strategy, with a further 47% providing input.

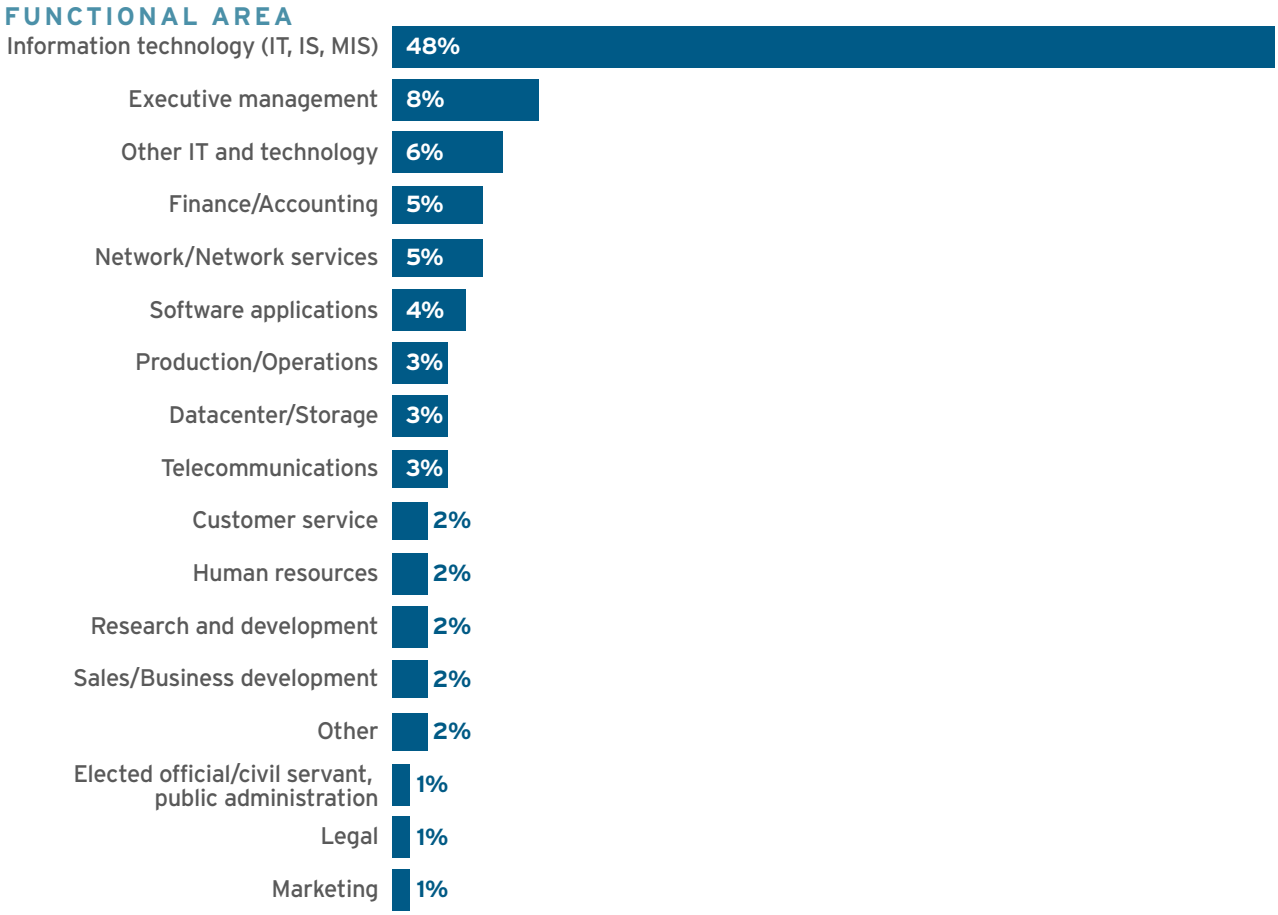
Overall, 60% of respondents work as senior IT executives, and 40% lead line-of-business departments for their companies. Our business segmentation corresponds with the categories typically used by service providers to identify sales opportunities in the midmarket and large enterprise segment (see Figure 15).

Figure 15: Survey demographics: Enterprise Digital Transformation Strategies study



COUNTRY


US
20%
India
11%
Japan
9%
Austria
8%
Canada
7%
Germany
7%
UK
7%
Switzerland
7%
Singapore
7%
Australia
7%
China
5%
Hong Kong
5%
Other
0%



Source: 451 Research

7.3 FURTHER INFORMATION

This report is one in a series to explore the maturity of enterprise digital transformation strategies representative of organizations in key commercial sectors and government agencies in North America, Europe and Asia-Pacific.

The series comprises a set of reports addressing the analysis of global status, as well as three summary regional reports that assess some of the variations identified across geographies. There are also four vertical-market-focused reports that will help navigate IT and line-of-business executives in financial services, healthcare, retail and also US government agencies, through some of the key issues and considerations specific to digital transformation themes in these sectors.

ABOUT CENTURYLINK

CenturyLink is a global communications and IT services company focused on connecting its customers to the power of the digital world. CenturyLink offers network and data systems management, big data analytics, managed security services, hosting, cloud, and IT consulting services. The company provides broadband, voice, video, advanced data and managed network services over a robust 265,000-route-mile U.S. fiber network and a 360,000-route-mile international transport network. Learn more about how CenturyLink can help you accelerate your digital transformation.

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