Bringing Dexterity To **IT** Complexity

What's HELPING or HINDERING Tech Professionals

BPI NETWORK

dimension data

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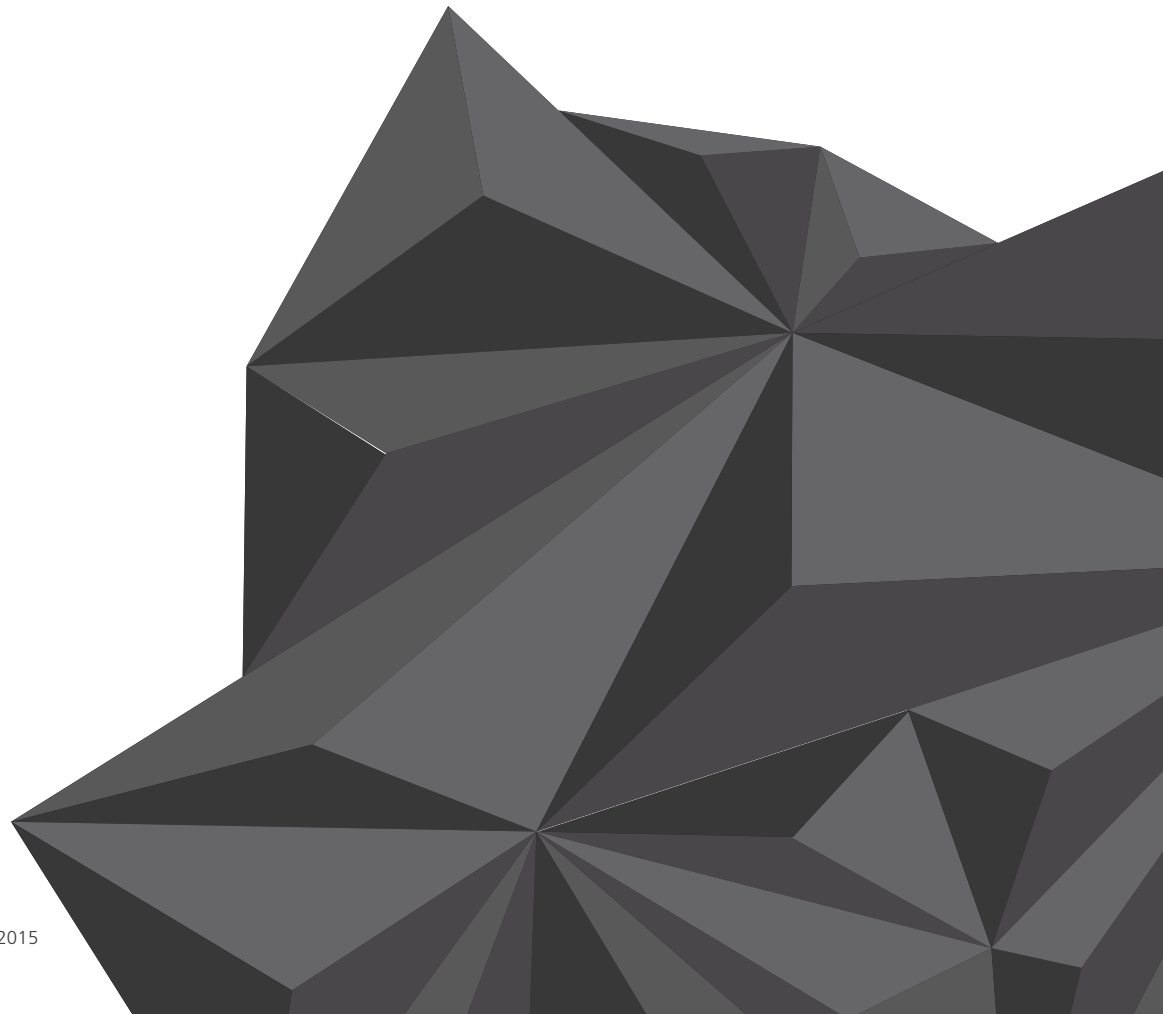
INTRODUCTION

When big data and the cloud first surfaced as popular business buzzwords a few years ago, they raised many questions and even some fear. How will we deal with soaring levels of data? How can we leverage that data to lift sales and spur innovation? How will we keep all that data secure? How can these new tools generate a true competitive advantage? And how will all this affect our IT workers?

Today, those questions have answers thanks to advances in technologies that add speed, agility and innovation to businesses. For example, instead of waiting weeks or months for a new application, IT teams can now spin-up experimental apps on cloud-based servers within hours or days. If they don't work out, no problem; simply take them down and try again. Or consider a retailer that needs to increase transactional processing capacity for the holiday rush. Instead of building a costly addition to the on-premises datacenter, IT teams can now simply order more capacity in the cloud, pay for it out of operating expenses and shut it down when the season is over.

Today we have the tools and we know how to use them. But most companies haven't yet undergone the sort of technology transformation that will let them take advantage of these advances. Why?

The Business Performance Innovation (BPI) Network initiated this study to find out what frontline IT workers – the very people who will design, build and manage these new systems – had to say about the delay. We conducted a global survey, seeking out the engineers, system administrators, software architects, data analysts, support teams, application developers and others whose job it is to transform this vision into a reality.

We also invited dozens of leading CIOs to huddle with us in roundtables in San Francisco, Singapore and London to explore ways to spur innovation. Finally, we interviewed IT leaders, academics, consultants, service providers and some of those who have already completed successful transformations in their own companies.

As you'll see in the pages ahead, we learned why the IT transformation is stalled in most companies. This report also explains what it will take to remove those obstacles in the opinions of those who've been there and done that.

Of course, this isn't the first time that BPI, a global advocacy group of executive change agents, has explored the topics of business, technology and transformation. Previously, in "Startup Innovation Inspiring Business Transformation," we looked at how startups prompted their larger competitors to embrace change through investments in new talent, technology and processes.

In "Innovation: The New Competitive Equation," the BPI Network reported how programs, leadership and recognition can make innovation more actionable. And in "Causetech: Succeed Where There's a Need," the BPI Network teamed with the CMO Council to crowdsource ideas and technologies to help advance the work of the UNICEF Innovation Center.

In partnership with Dimension Data, a global leader in the provision and management of IT infrastructure solutions, we initiated the Transform to Better Perform program this spring. Our first report delved into how companies can leverage technology to sort through the flood of data pouring into their overloaded datacenters while also reducing capital expense, improving disaster recovery capabilities and raising levels of innovation across the company.

A second study, "Accelerating Business Transformation Through IT Innovation, "examined how senior business executives around the world viewed the potential for transformation. It presented four major findings: First, that senior executives were eager to adopt a broad range of technologies that speed innovation and raise agility; second, that they see major benefits from data center and cloud transformations; third, that they are dissatisfied with the pace of innovation in their IT organizations; and fourth, that there is a clear break between the desire to adopt new technologies and the ability to do so. The last two findings – concerning the IT team and the obstacles to transformation – inspired the report you're reading now.

Thousands of business and IT executives have already downloaded the first two Transform reports from ReinventDatacenters.com, the online home of the Transform to Better Perform program. By doing so, they've joined the world's largest community dedicated to these issues and gained access to an ongoing series of stories, interviews and first-person insights on the key factors that go into a successful transformation.

We invite all our readers to join the ReinventDatacenters.com community and to invite their colleagues to register there as well. Please share your opinions, success stories, challenges, questions and answers with your peers there. We sincerely hope this free service and these reports speed you on the journey to your own IT transformation.

EXECUTIVE SUMMARY

Business executives around the world urgently want the game-changing advantages of transformative technologies. It's been shown that such technologies can speed time to market for digital products and services, provide the agility companies need to adjust to today's fast-changing business environment and cut the high costs of enterprise technologies.

Just a few months ago, 92 percent of business executives globally said in a Business Performance Innovation (BPI) Network survey that they were making progress toward adopting modern technologies to transform their companies into dynamic digital businesses. They predicted the three areas that would benefit most from transformation were: increased agility in the face of business changes (70%), greater cost efficiencies (57%) and a faster development of innovative new applications (47%).

These are exactly the areas that corporations need to develop to establish their leadership in the 21st Century, a time when customer-centric strategies mean they must respond quickly to shifting customer demand or fast-changing business conditions. A properly executed IT transformation can create the sort of agile corporation that can grow revenue and fend off competitors with the help of cloud-enabled tools.

On the technical side, this means shifting from a dependency on costly hardware systems located on the company premises to software-driven environments that permit faster development of applications that improve service to customers, secure access to data from anywhere at any time, a more flexible cost structure, the ability to scale-up operations in response to rising demand and the flexibility to reshape the enterprise to meet unexpected business challenges.

Yet a new survey of frontline IT workers shows that most corporations are, at best, just getting started on the road to IT transformation. The survey uncovered major failings in planning, resource allocation, staffing, collaboration and financial commitments that are impeding progress. These IT professionals – the very people who would implement the new technologies – give their companies failing or near-failing grades on their ability to implement the IT transformation their executives say they want.

> "WHAT I FIND IS A COMMUNICATION GAP. IT IS SPENDING TIME ON LOW-LEVEL AUTOMATION, WHEN THEY NEED TO FOCUS ON TASKS THAT WILL CHANGE BUSINESS OUTCOMES."
>
> **KEVIN LEAHY**
> **DIMENSION DATA**

This reality poses a significant challenge to business leaders. While embracing these technologies is creating a new class of leaders in many business sectors, failing to adapt to this new age will leave laggards far behind. It will take years for them to catch up, especially if the early leaders add even more speed and flexibility to their capabilities. Simply put, businesses cannot afford to fall behind.

The BPI Network, a global advocacy group of executive change agents, working in partnership with Dimension Data, also interviewed CIOs, business executives, educators, consultants and others in the Americas, APAC and EMEA, finding broad agreement among management experts that most organizations are failing to execute an IT transformation largely due to a lack of executive commitment, absence of clear objectives, lack of technical knowledge among business managers, a deep shortage of skilled data and software engineers, and poor collaboration between IT and business staff members.

"This is exactly what I see in every client I visit," said Kevin Leahy, General Manager for Data Centers for Dimension Data in the Americas. "What I find is a communication gap. What they're spending time on is very low-level automation tasks. Instead, they should focus on innovation and disrupting their competitors. They need to focus on the tasks that will change business outcomes."

To visualize this issue, we created the scorecard below based on the responses to a global sample of more than 200 IT professionals around the world. Most say their companies haven't even developed a clear, detailed roadmap. Only one in five companies have cross-functional teams to plan IT efforts and 43 percent of the IT pros report communication issues with the business side. The IT workers say they're weakest in software and data skills, the very talents needed to support a transformation.

IT TRANSFORMATION SCORECARD
How Frontline IT Workers Grade Enterprise Readiness

SURVEY RESULTS

TRANSFORMATION MOMENTUM:
Over 70 percent said they have not even begun or are just "getting started" on the road to transformation.

GRADE D

CLEAR ROADMAP & PLAN:
Just 15 percent have a clear and detailed plan. 83 percent say their plans provide only general direction, need updating or don't exist at all.

GRADE F

REQUIRED SKILLS & COMPETENCIES:
Business leaders want new data-driven applications and a more strategic, responsive and accountable IT organization. Yet, IT reports long-term planning, application development, data analysis and software engineering are their weakest skills.

GRADE D–

CROSS-FUNCTIONAL COLLABORATION:
Just 18 percent of IT workers rate cross-functional collaboration as "very active," while 51 percent say it exists only for "big projects." Another 17 percent say they rarely speak with business managers or speak only out of necessity.

GRADE D

SUFFICIENT BUDGET & RESOURCES:
Nearly half of IT pros say insufficient funding is one of the biggest obstacles to upgrading IT infrastructures; 48 percent say it also impedes IT innovation.

GRADE C–

OVERALL ABILITY TO EXECUTE:
Only one third rank their company's ability to adapt transformative technologies as good or very good, while 40 percent rate their ability as moderate, and 26 percent rate it as weak.

GRADE D

Instead of ushering their companies into a new age of highly agile innovation, IT workers are hindered by a growing list of maintenance tasks, staff cutbacks and aging infrastructure. All the while, growing tension between IT and their business colleagues has proven a roadblock to the type of communication that fosters collaboration, innovation and true IT transformation. Some 43 percent identified serious communication issues.

KEY FINDINGS

Our analysis of these new survey results and ongoing dialogues with experts in this field have led us to five major conclusions that will be explored in greater depth in the pages ahead:

1. Commitment: C-level executives who recognize the business advantages of an IT transformation need to communicate this vision clearly to employees at all levels of the company. No progress can be expected without strong leadership.

2. Collaboration: The business and IT teams should meet in ongoing cross-functional teams that analyze business needs, existing capabilities, desired improvements and the technologies, skills and funding needed to achieve mutual goals. Their findings should be reviewed at the C-level.

3. Long-term Planning: Discussions from the cross-functional teams should lead to living, detailed IT roadmaps that can be updated regularly as business needs change and new IT solutions surface. In other words, plans should reflect the same agility as the technologies they discuss.

4. Recruitment: Companies also must find the IT talent needed to support the transformation, notably in the area of software engineering and data analysis. Without the right staff, the transformation will stall.

5. Execution: Both IT and business organizations should be regularly evaluated against business-based metrics to assure the timely execution of the transformation mandate. Breaking the effort into segments and seeking help from trusted partners are essential tactics.

LEADERS & LAGGARDS

The highly visible disconnect between the desire to adopt new hybrid technologies and the ability to put that vision into practice has already begun to create a gap between the leaders in this new age of digital business and the laggards. This difference appeared first in our global survey of senior business executives during the summer of 2015.

> "BUSINESSES WANT INNOVATION, AGILITY, LOWER COSTS, INCREASED SECURITY, SCALABILITY, AND THEY WANT THIS ON DEMAND. THE CLOUD HAS BROUGHT THESE ABILITIES."
>
> **KEVIN GOVENDER**
> **TRANSNET**

In that study, 93 percent of the executives acknowledged that technology has become more important to their businesses during the past five years; 65 percent rated it as "far more important." The growing importance was reflected when the executives were asked how competitors were using these new technologies to disrupt the market. Forty-five percent said their competitors were offering more choice, convenience and accessibility; 34 percent said the technologies were helping their competitors to improve their margins; 29 percent said rivals were able to offer greater customer value and personalized service; and 25 percent acknowledged their competitors were "taking revenue and market share" with the help of these new cloud-enabled tools.

"Businesses want innovation, they want agility, they want lower costs, they want increased security, they want liability, they want scalability and they want this on demand. Obviously, the cloud has brought theses abilities," said Kevin Govender, Group Chief Enterprise Architect and GM for IP Strategy at Transnet, which controls the $60 billion business of ports, rail network and pipelines under South African Department of Public Enterprises.

To be sure, there are many companies like Transnet that are leading this change. In our just-completed survey, 28 percent of IT professionals said their companies are not only making progress in transforming themselves into more agile businesses, but are also setting a course through uncharted waters that others may follow. These leaders are aggressively embracing a new age of technology that may require some additional planning now, but will likely yield far greater flexibility and cost savings while improving customer service. It's important to note, however, that leaves more than seven in 10 companies that are being left behind due to a failure to embrace technological change.

It's critical to understand the difference between the old technical world and the new one. In the past, most companies relied on multimillion-dollar, on-premises datacenters that were paid for out of CapEx budgets with the expectation that they would support the company's technology needs for 7-10 years. These still serve as the IT engines of many companies, but they have limitations considering today's needs for rapid innovation, faster application development and tighter operating margins. For example, it can take months or years to develop new applications.

"WE'RE SEEING A LAG BECAUSE TECHNOLOGY CHANGES AT A VERY RAPID PACE, BUT PEOPLE NEED MORE TIME TO FIGURE OUT HOW TO MAKE THE BEST USE OF IT."

JONATHAN KOOMEY STANFORD UNIVERSITY

Today, companies must move much faster. New applications are needed in days and weeks. New technologies add cloud-based capabilities that enable faster innovations in applications and other customer-facing services. They are not only more flexible in practical application, but, because they are used through short-term contracts paid from OpEx budgets, they provide a level of financial flexibility that was impossible in the past.

This added flexibility and speed can be applied in many ways depending on the specific business needs of each corporation. Take, for example, a large retailer that sees a spike in sales during the holiday season. With cloud-based technologies the CIO can quickly add new capacity to process transactions and then revert to lower capacities when the shopping rush ends. With on-premises datacenters, the solution was to add costly new hardware systems that would sit idle most of the year.

Another example would be a company that plans an international expansion. Instead of paying up front for a new datacenter in each region, new technologies allow companies to add capacity in the cloud that can be tailored to comply with all regulations in the new regions and still connect with secure systems in headquarters.

As a case in point, Transnet's system is designed so that the company could keep sensitive data secure on private servers, but still uses the public cloud to support business managers with applications for talent management or other functions that can reference that data. "They want to have cloud access where they could have information available anytime, anyplace, anywhere, on any device," Govender explained. "They want information at their fingertips. They want to make decisions."

EMBRACE THE TRANSFORMATION

Even with such a clear vision of the potential benefits, the latest BPI survey shows most companies are stumbling in their efforts to update the technologies to drive big gains in productivity, innovation, customer service and, in the long run, profit and competitive advantage. In the following section, we'll review our key findings in greater depth.

1. COMMITMENT: No Progress Can Be Expected Without Clear Executive Leadership

"AN ORGANIZATION NEEDS A COURAGEOUS CIO TO MAKE DIFFICULT DECISIONS. IF THE CIO DOESN'T HAVE THE COURAGE TO DO IT, NO ONE WILL."

**SUK-WAH KWOK
LOCKTON COMPANIES**

Failures in transformation start in the C-suite where there is a clear desire to adopt new technologies, but often a lack of the clear direction and funding needed to succeed.

There must be an unequivocal commitment from the C-suite. In our survey, frontline IT workers were asked which management executives are most demanding in the push for new technology adoption. The first place answer was practically a tie, with 42 percent naming the CIO and 41 percent naming the CEO as the most influential figure. Yet 62 percent said their team is under-resourced or "severely" under-resourced. Several experts agree the CIO must take the lead on the issue of resources.

"An organization needs a courageous CIO to make a decision on something in which he/she might not be 100 percent confident," Suk-Wah Kwok, APAC regional CIO for the Lockton Companies, told our researchers. "If the CIO doesn't have the courage to do it, no one will."

Once CIOs decide to pursue an IT transformation and get a commitment from the C-suite, they'll still need to produce a detailed plan and budget before the CEO and CFO will fund it. "IT leaders have to show the business value to be able to ask for additional budget," said Murat Ozturan, CEO for Microsoft Services in Asia Pacific and Japan. "IT needs to change and start talking about the business value they're bringing in. Then they can ask for more budget."

This comes down to a chicken-and-egg question. Executives may recognize the importance of cloud-enabled systems, but a CIO alone cannot accurately estimate that budget without detailed discussions with business managers and IT staff to determine exactly what's needed and what's possible. That requires collaboration.

2. BUILD COLLABORATION: Establish Cross-Functional Teams to Define IT Needs

There's a great need for educational conversations about what these technologies can do in the specific context of each corporation. As those capabilities come into sharper focus, it will trigger insights of how to improve internal processes while bringing more value to the customers. Even today's transformational leaders will learn new things as they go along, in effect making it harder for competitors to match their performance.

"Technology changes at a very rapid pace, but people need a little more time to figure out how to make the best use of it inside their organizations. That's why you're seeing this lag between what we could do and what we're able to do in practice," said Jonathan Koomey, who has studied changes in

business and technology as a researcher at the Steyer-Taylor Center for Energy Policy and Finance at Stanford University. This requires ongoing, detailed discussions between business leaders and the IT team. Companies must establish cross-functional teams to support that effort and develop plans.

A long-running tension between business managers and IT has only widened in recent years as the need for rapid innovation started rising with the growth of big data. More than two in five respondents indicated communication problems like the lack of a common language, little or no regular communication and speaking only out of necessity. Two percent confessed they have a "confrontational" relationship with their business colleagues.

To breach the communication gap at companies he visits, Leahy sometimes sets up a "strategic discovery workshop" where he brings IT and business together to hear each other's point of view. The results can be interesting. Sometimes, he said, the business will suggest something new and the IT team says, "Well, we've actually tried that. We've built portions of it, but the [business] process doesn't allow us to use it." Other times, the business owners make requests that can be fulfilled quickly in the cloud.

3. LONG-TERM PLANNING: Draft Living, Detailed IT Roadmaps

The dialogue in cross-functional teams helps the IT team learn about the business goals while helping business leaders gain more insights into how new technologies can support their needs. But these discussions must lead to a consensus on how to achieve the desired outcomes on both sides. In the survey, 52 percent of frontline IT workers complained that the business team waits too long to bring IT into the planning process. And 30 percent say the business team doesn't understand how the IT systems work.

"IT WORKERS KNOW THE CONSTRAINTS, THE CHOKE POINTS AND THE OPPORTUNITIES IN A WAY THAT NO ONE ELSE WILL."

JONATHAN KOOMEY STANFORD UNIVERSITY

"A lot of business leaders are probably more aware of innovation out there, but it's at a very shallow level," said Kwok. "It's up to the IT leader to communicate or to educate them, to make them understand the difference between applying innovation on consumer products versus bringing it into a corporation."

As Koomey points out, the insights of the IT team are invaluable in this process. He noted that IT workers "know the constraints, the choke points and the opportunities" in a way that no one else will. "The people on the business side will not be able to properly evaluate those issues alone," he said. All this contributes to the detailed roadmap that the company will follow on the path to transformation.

"What becomes very, very important is that an organization needs to have a cloud strategy and a cloud policy," said Govender. "They are critical because that is your framework which helps to guide you in how to make decisions on what you put in the cloud and to get acceptance from the business on your policies and strategies."

4. RECRUITMENT: Address the Critical Shortage of Software and Data Engineers

Most IT staffs lack the engineering talent needed to make a successful transformation. In the survey, 50 percent of frontline IT workers said they have "insufficient IT staff, training and infrastructure." They reported they are particularly weak in two areas that matter most when shifting to a software-driven IT system: application development (37%) and software engineering (34%). They also said they're weak in data analysis (34%), a skillset that is vital to taking advantage of all the data now available.

"The fact is, business transformation is a talent and skill desert, unfortunately," said Josh Greenbaum, an IT consultant who has been working in enterprise technology for three decades. "It's that way at the service provider level, at the vendor level and at the IT level. Everybody is struggling to find the human capital needed to do this … If you want to do digital transformation, you've got to pay for it."

But buying expertise won't be enough. Companies must find more creative avenues, such as repurposing existing staff by outsourcing routine tasks and redefining the jobs to make them more attractive to talented engineers.

When companies outsource some work, it means the in-house staff – which currently spends more than half its time on routine tasks – can turn its attention to innovative new technologies. For example, in Kent, England, IT Director Jonathan Gill told us he keeps his in-house developers focused on applications that require an intimate working knowledge of the organization. But he's happy to pass along other work to external development teams, such as organizing the data available to customers and clerks through iPads and large touchscreen monitors. "That is something I can outsource quite easily to an outside agency," he told BPI.

"THE FACT IS, BUSINESS TRANSFORMATION IS A TALENT AND SKILL DESERT."

**JOSH GREENBAUM
ENTERPRISE APPLICATIONS
CONSULTING**

Companies like Eurostar and Catalina outsourced their entire data centers for similar reasons. "Our job is to run and operate trains. It's not to run and operate computers. And there are people out there who are doing it in a much more efficient, greener, faster and more professional way than we can or we'll ever be able to," said Antoine de Kerviler, CIO of Eurostar.

When recruiting new IT talent staff, it's important to make sure they not only have the right skill-set, but that they have the right mind-set. An example is the LHP Hospital Group, which recruited Anthony Teri as its IT Director in New Jersey. Teri added an MBA to his resume because he knew he'd need more business knowledge to become a CIO. "My company looks to get business-minded people in the director and senior roles," he told BPI researchers.

Asked about what smaller companies can do to attract innovative engineers, Stanford University IT Lecturer Tim Chou suggested that they seek out recent computer science graduates and invite them to innovate as they learn about the company's business. He also noted that Stanford now requires all its business students to take at least one course in technology.

5. EXECUTE ON PLAN: Maintain Momentum and Measure Achievements

Even with funding, staff, collaboration and a solid plan, it's challenging to "keep the lights on" and simultaneously "rewire" the entire enterprise. Throughout our months-long investigations for the three studies published in the Transform to Better Perform initiative, BPI researchers have repeatedly heard from business leaders, CIOs and others there are three important strategies to achieving business advantages through IT transformation.

The first is to approach the overall project in small steps. This makes the larger project more manageable. Perhaps more important, it triggers buy-in across the company and can show quick returns on early investments. "We're still at the beginning of this transformation," said Cary Sylvester, VP for Technology, Innovation and Communication at Keller Williams. "But the benefits that we've reaped already on what we can do with our team and how we can respond are exactly what we were hoping to see."

The second is to develop and apply a clear set of business-based metrics that will help to document and analyze achievements. George Rockett, co-founder and CEO of DatacenterDynamics, pointed out that the world's most successful Internet companies develop metrics that show the impact IT is having "every second on their business."

The third is to bring in a trusted partner who has "been there, done that" with other companies. Data regulations vary from region to region, technical issues in EMEA differ from other regions and risk tolerances will differ from company to company. Having an experienced partner to help guide the transformation can spell the difference between success and failure.

CROSSING

WHAT FRONTLINE **IT workers** NEED TO MAKE **the Leap**

IT Transformation...
WE'VE ONLY JUST BEGUN
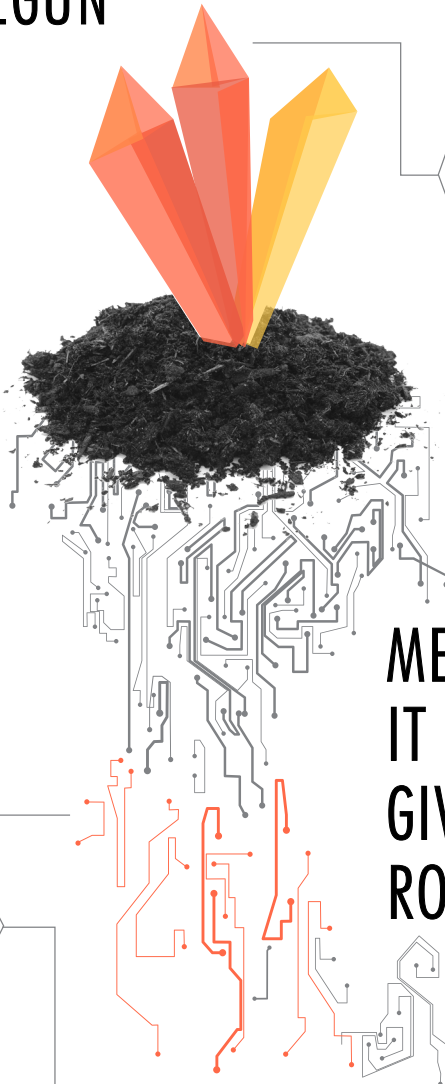
2/3 of IT professionals say their company's IT transformation **hasn't even begun** or is **"just getting started"**

MEANWHILE,
IT Hasn't Been
GIVEN A CLEAR
ROADMAP

Only **15%** say their IT **roadmap** is clearly defined

TRANSFORM TO BETTER **PERFORM**

BPI™ NETWORK

dimension data

IT Skills Need to Catch
UP TO BUSINESS NEEDS

WHAT THE BUSINESS WANTS

Innovative business apps
+ customer-facing services

IT-enabled business
productivity + performance

More strategic contributions
and accountability

But Frontline IT
SAYS IT'S SHORT ON
CRITICAL CAPABILITIES

#1 Long-term
Planning

#2 Application
Development

#3 Software
Engineering

#4 Data Analysis
+ Architecture

TRANSFORM
TO BETTER PERFORM

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MANY BUSINESS ISSUES STAND IN THE WAY of IT Transformation

IT teams are UNDER-FUNDED AND UNDER-RESOURCED

62%

are under-resourced in staff + finance

LACK OF COLLABORATION BETWEEN business + IT

52%

say business is waiting too long to bring IT into planning process

SHIFTING PRIORITIES TAKE TIME AWAY FROM INNOVATION

82%

spend over half their time on emergencies + maintenance

+ Perceived needs change faster than they can be addressed

WHAT IT Professionals SAY THEY NEED TO SUCCEED

Improved collaboration + alignment between IT + business units

Business case + increased funding for innovation + new projects

Deeper understanding of business + customer needs within IT

TRANSFORM TO BETTER PERFORM

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DETAILED FINDINGS

1. HOW FAR ALONG IS YOUR COMPANY IN ITS TRANSFORMATION TO THE NEXT GENERATION OF ENTERPRISE TECHNOLOGIES THAT IMPROVE BUSINESS RESPONSIVENESS AND CUSTOMER ENGAGEMENT?

Unfortunately, relatively few companies worldwide are on the road to a successful transformation in the eyes of the frontline IT workers who would build and deploy such systems. Seven in 10 respondents indicated their companies have not yet begun or are just "getting started" in adapting to the sort of technologies that can improve business responsiveness and customer engagement.

Only 28 percent of the respondents said their companies were well on their way to an IT transformation. We see a clear disconnect here with the strong call for those technologies from business leaders that we documented in earlier surveys and the reality of the IT workers on the front line of that transformation.

6%	Not a priority	
22%	Interest, but no action	
21%	The planning stages	
22%	Getting started	
21%	Well on the way	
7%	Up and running	
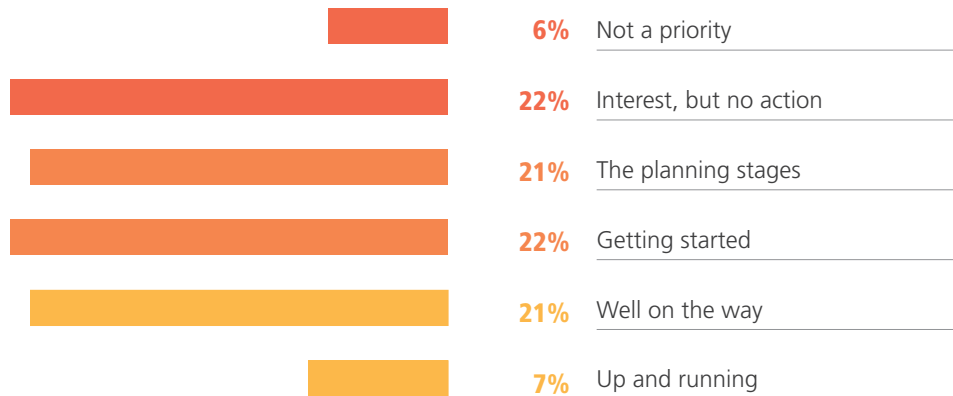
2. HOW WOULD YOU RATE YOUR COMPANY'S ABILITY TO ADAPT TO TRANSFORMATIVE TECHNOLOGIES?

Given the concerns expressed by frontline IT workers throughout this survey – most notably the lack of planning, funding, staff skills and communication – it isn't surprising to see that only one-third of the respondents rate their company's ability to adapt as "good" or "very good." Indeed, the largest single response of "moderate" (40%) sounds almost optimistic given the high number of negative responses in the survey.

It's important to note that one-quarter of the respondents gave their companies a "weak" rating, raising a red flag that those companies may be ill-equipped to keep up with competitors in an age that requires new technologies to solve the unprecedented challenges ahead.

9%	Very good
26%	Good
40%	Moderate
24%	Weak
2%	Failure
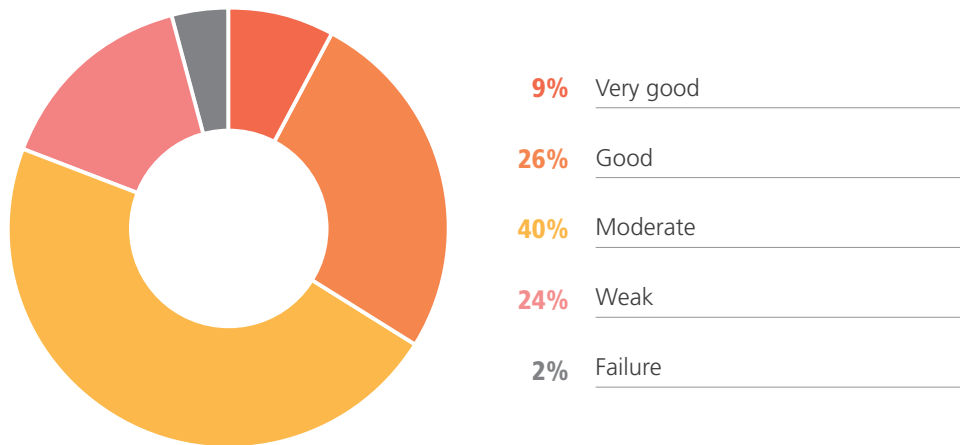
3. HOW WELL DEFINED IS YOUR COMPANY'S TECHNOLOGY ROADMAP?

There is no way to complete a successful IT transformation without a clear and detailed plan for the engineers and IT workers who would design, build and deploy the new technologies. Yet our survey found that eight in ten respondents said their company's technology roadmap doesn't exist, needs an update or provides only general direction.

Just 15 percent of the respondents said their company has a "clear and detailed" roadmap that would be needed to support a true transformation.

15%	Clear and detailed
43%	Provides general direction
27%	It needs an update
13%	We have no roadmap
2%	I don't know
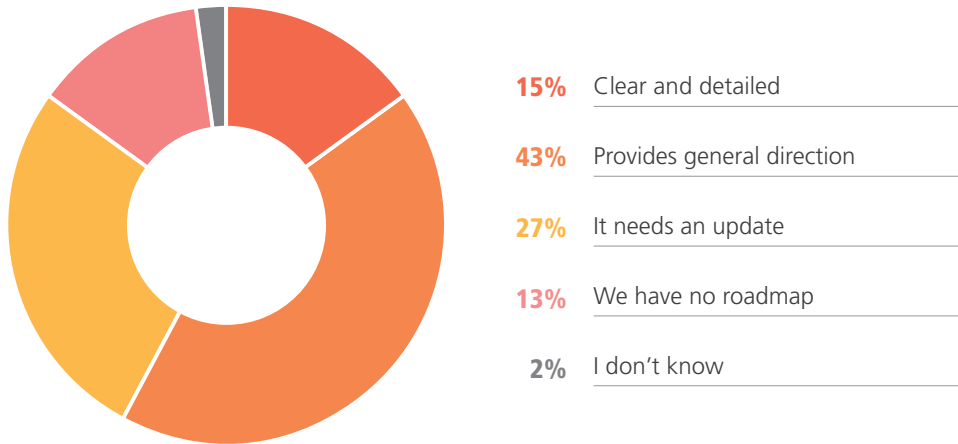
4. WHICH MANAGEMENT EXECUTIVES ARE MOST DEMANDING OF IT INFRASTRUCTURE IMPROVEMENTS AND NEW TECHNOLOGY ADOPTION WITHIN YOUR COMPANY OR ENTERPRISE?

While two-in-five CIOs and CEOs appear strongly committed to leading a transformation, we find those numbers surprisingly low considering the extensive discussions underway worldwide and across industries that suggest the need to embrace these new technologies. However, this is consistent with the report of a prior BPI Network survey of business executives, which gave similar responses. Clearly a majority of C-level executives are not yet committed to an IT transformation.

We also noted that the CIO and CEO represent the strongest support for such a transition, with far lower numbers for many of the mid-level managers, strategic planners, product development personnel and others. For example, just 24 percent of line-of-business managers are seen by the IT team to be demanding new technologies although it's generally agreed such technologies could enhance customer-facing service, lead to quicker time-to-market and improve profit margins.

%	Role
41%	Chief information officer
40%	CEO
31%	Chief technology officer
24%	Line-of-business leaders
18%	COO
16%	Chief financial officer
14%	Chief sales, marketing or customer experience officer
10%	Head of product development
10%	Head of strategic planning
5%	Manufacturing or supply chain heads
4%	Chief digital officer
3%	Chief security officer
3%	Head of compliance and governance
2%	Chief data officer
1%	General counsel
1%	Chief procurement officer
11%	Other

5. WHAT DO YOU THINK IS MOST NEEDED TO MAKE IT TRANSFORMATION A REALITY IN YOUR COMPANY OR ORGANIZATION?

IT workers seem to clearly recognize what it would take to succeed at transformation in their companies. It starts with increased collaboration between the IT and business groups, which, as we'll see later, often have trouble communicating with one another. This factor was cited by 42 percent of our respondents. Following close behind at 39 percent was the understanding that there must be a strong business case and increased funding for innovation and new projects. IT workers acknowledge that they must gain a better understanding of the needs of both the business and its customers in order to build new systems that generate improved results.

These three elements are clearly linked; a lack of collaboration results in failure to recognize the company's needs, and without that, it is difficult to make a strong business case for transformation.

%	Item
42%	Improved collaboration and alignment between IT and business units/functions
39%	Business case and increased funding for innovation and new projects
35%	A deeper understanding of business and customer needs within IT
27%	New IT talent, skills, processes and tools
25%	A better appreciation among business units and leaders of IT requirements and challenges
23%	A clearer roadmap for transformation and change
17%	An earlier and more influential role for IT in the planning process
17%	A stronger mandate from the CEO and upper management
13%	A greater openness and new mindset within IT for change
13%	Clarity on how to address legacy data integration issues
8%	Evidence of how existing systems and data centers are dragging down performance
7%	Clarity on real risks and complexities of moving to the cloud
5%	Other

6. HOW DO YOU THINK THE IT ORGANIZATION IS PERCEIVED BY DIFFERENT FUNCTIONAL LEADERS AND BUSINESS USERS ACROSS THE ENTERPRISE?

At least two other questions in this survey show that IT workers understand they are far from perfect. Here, half of all respondents indicate that business units have a less than positive perception of IT, whether it's because of a lack of the proper capabilities or a lack of responsiveness. The other half, though, indicate their efforts are viewed more positively than negatively by workers outside the IT organization.

Even so, only 13 percent think they're viewed as strategic, trusted, smart and supportive – characteristics that are essential for working closely with business colleagues to improve business outcomes. Our earlier survey of business leaders found just two in five who thought IT was doing a "good" or "very good" job in building that partnership.

30%	Lacking in resources and capabilities
23%	Helpful, knowledgeable and reliable
15%	Difficult to work with and unresponsive
13%	Strategic, trusted, efficient and collaborative
13%	Smart, flexible and highly supportive
5%	Arrogant, unavailable and too technical
2%	Not sure
1%	Other
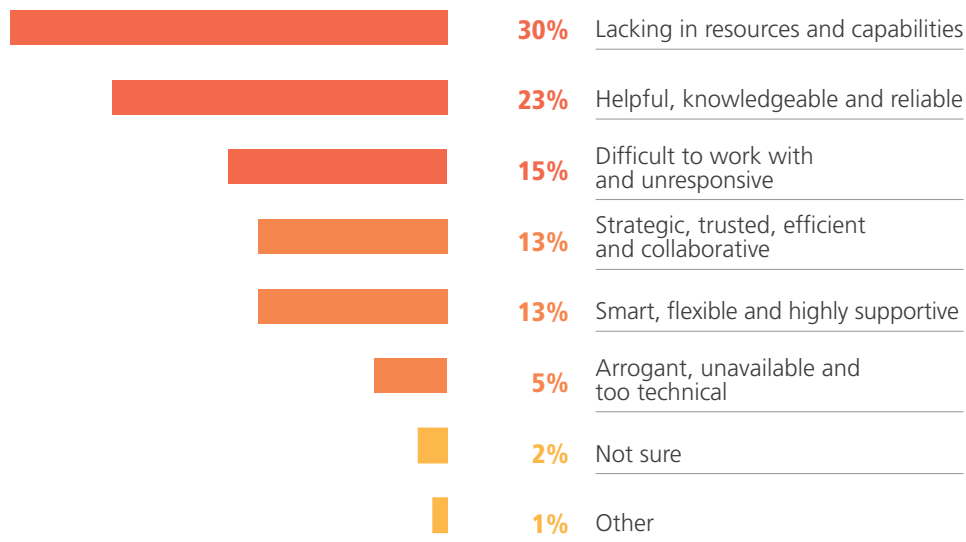
7. HOW WELL ORGANIZED IS THE IT TEAM IN TERMS OF HAVING THE LEADERSHIP, TOOLS AND TRAINING IT NEEDS TO GET THE JOB DONE RIGHT?

IT workers tend to be computer scientists and engineers whose jobs entail precision and consistency. Yet just 21 percent of our respondents described their teams as being consistently well organized.

About two-thirds of them said they're "sometimes" well-organized, a characterization that falls well short of what business managers might legitimately expect from a team that oversees the technical heart of the company. Finally, 17 percent admit they are rarely organized or that they're disorganized, nearly canceling out those who feel they are consistently well-organized.

21% Consistently well organized

62% Sometimes well organized

12% Rarely organized

5% Disorganized
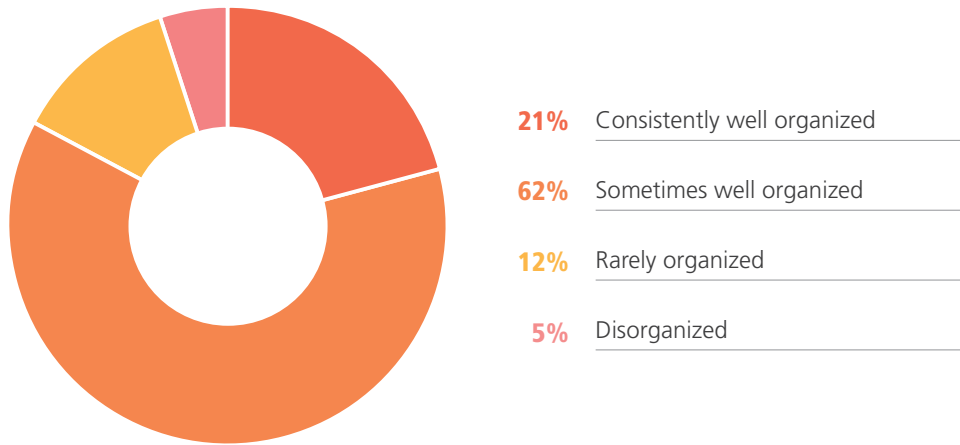
8. DOES YOUR COMPANY HAVE CROSS-FUNCTIONAL TEAMS THAT INCLUDE IT AND BUSINESS REPRESENTATIVES?

In our two prior studies in the Transform to Better Perform series, we repeatedly heard from IT executives, business leaders, business consultants and leading technology companies that it is absolutely essential to form cross-functional teams that can collaborate on the complex issues associated with an IT transformation.

Yet the survey found that just 18 percent of the respondents note that such teams are consistently active in their companies. A far greater percentage (51%) said such teams are only formed for big projects, and 17 percent said the teams are assembled only to solve a problem – a reactive stance. Fourteen percent said they have no such teams.

18% Yes, they're very active

51% Only for big projects

17% When there's a problem

14% We have no such teams
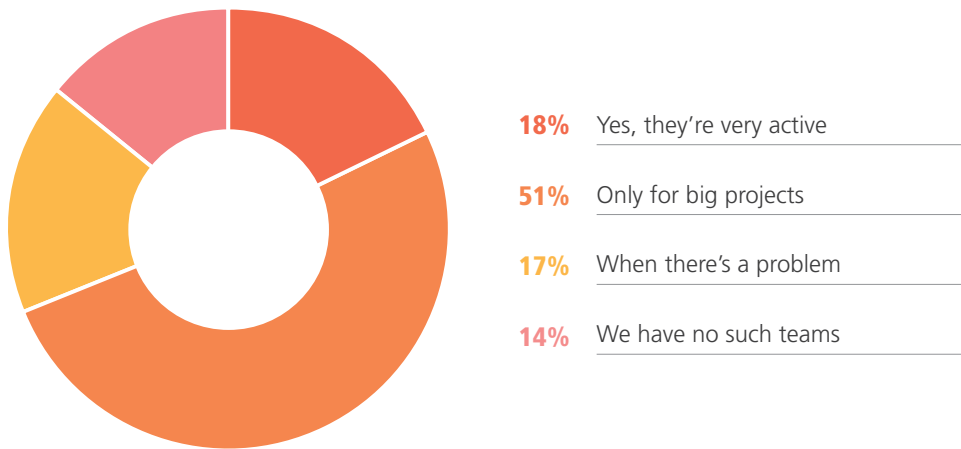
9. WHICH COMES CLOSEST TO DESCRIBING THE COMMUNICATION BETWEEN THE IT AND BUSINESS TEAMS?

For a technology transformation to succeed, there must be clear communication between the business and IT teams. They need to understand common requirements and make precise plans to execute their strategy within the time and budget parameters available. Yet just two-in-five IT workers said they have ongoing dialogues with their colleagues on the business side of the office.

Even more troubling is that a greater number indicate there are serious communication issues between the two teams such as the lack of a common language (25%), little or no regular communication (10%), or conversations that only occur out of necessity (6%). A small number (2%) even described their communications with business colleagues as "confrontational." Several of these concerns are red flags that warrant attention from senior management.

38%	Ongoing, constructive dialogues
18%	Quarterly meetings to review goals
25%	Try to talk, but lack a common language
10%	Little or no regular communication
6%	Only talk out of necessity
2%	Confrontational relationship
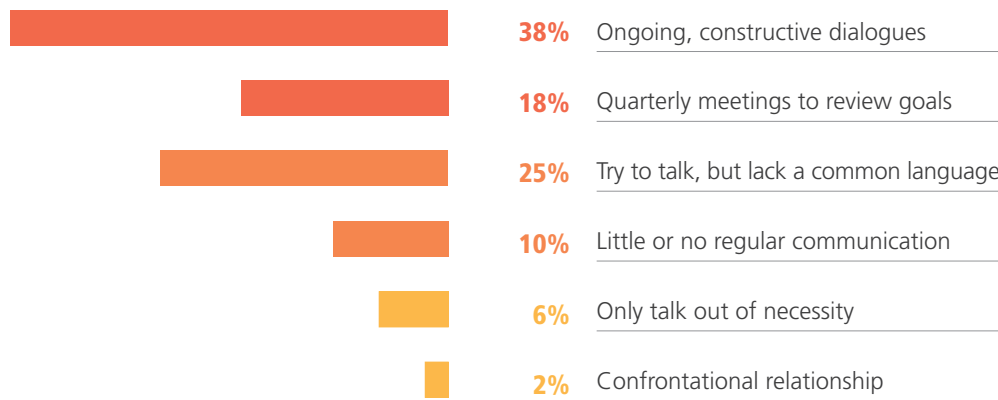
10. HOW MUCH OF YOUR DEPARTMENT'S TIME IS SPENT ON MAINTENANCE AND ROUTINE TASKS AS OPPOSED TO NEW PROCESSES OR INNOVATION?

Across the globe, the business managers in our prior survey said they want to see more innovation coming from the IT groups in their companies. But they didn't indicate how the IT team could do that without doing less of something else. In the current survey, 82 percent of the respondents said they spend more than half their time simply keeping legacy systems running smoothly or handling routine tasks – jobs often referred to as "keeping the lights on."

And 17 percent estimated they spend more than 90 percent of their efforts on mundane tasks, leaving almost no time for innovation. Experts said companies must find ways to shift some of those routine tasks to trusted partners who specialize in those areas. That could give the IT team members the time they need to create innovative new products and services.

17%	More than 90 percent
39%	About two-thirds
26%	About half
9%	About one-third
9%	Less than 10 percent
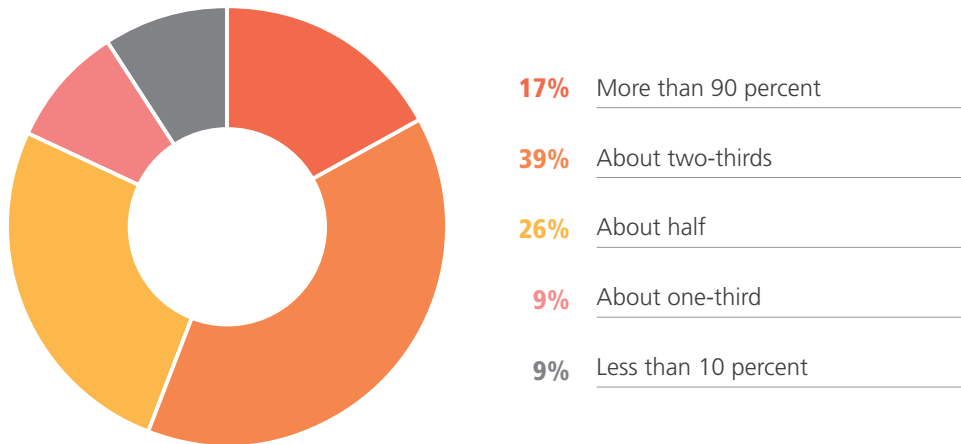
11. WHAT ARE THE BIGGEST OBSTACLES TO UPGRADING YOUR COMPANY'S IT INFRASTRUCTURE?

After years of working with flat budgets, aging technology and staff layoffs, it should come as no surprise that IT workers around the globe said their top two obstacles to upgrading their infrastructures are money and resources. Forty-six percent note insufficient staff and training, and 43 note insufficient funding, leaving other replies well behind.

The other responses give more insight into problems faced by frontline IT workers. Thirty-four noted that shifting priorities and business demands impede their ability to upgrade IT infrastructure. Twenty-six percent cited problems with integration of new apps with legacy systems, and 23 percent said they faced "unrealistic expectations," a problem that often stems from poor planning and communication. Finally, one in five said their teams lack the skills and knowledge needed in IT today.

%	Obstacle
46%	Insufficient IT staff, training and resources
43%	Insufficient funding
34%	Shifting priorities and business demands
26%	Integration with legacy systems
23%	Unrealistic expectations
21%	Lack the right technical skills and knowledge
18%	Management doesn't understand IT
15%	Inadequate project planning
14%	Resistance to change among IT workers
11%	Poor communication with non-IT coworkers
11%	Tight or unrealistic schedules
6%	Project partners (vendors, consultants)
5%	Other

12. WHAT PROJECTS WILL DRIVE THE BIGGEST CHANGES IN OUR COMPANY IN THE NEXT TWO YEARS?

The IT team members consistently showed an understanding of, and an eagerness to learn more about, the challenges and problems facing their company. In this answer, a clear majority of 55 percent said improving customer facing services was the project that would result in the biggest changes for their companies in the coming two years.

Another 45 percent said the project with the highest impact would be application/product development, which also would result in improvements for customers. These results closely parallel the answers given by business executives when we conducted a separate survey earlier this year, demonstrating that both teams agree on the most important goals for IT in the near future. However, as answers to the next two questions demonstrate, there is currently a major divide between what companies need most and the actual skills the IT team has to deliver on them.

55%	Improving customer-facing services
45%	Application/product development
35%	Migrating to a hybrid IT model
29%	Strengthening security
26%	Better integrating SaaS applications
22%	Upgrading on-premise data centers
16%	Moving ERP to the cloud
15%	Improved document management
14%	Better managing compliance
5%	Reduce energy use/green IT
5%	Other

13. IN WHAT AREAS IS YOUR IT TEAM CURRENTLY STRONGEST?

IT workers know their strengths and weaknesses better than anyone. This answer shows their strengths lean more towards providing standard tech services and supporting traditional hardware-centric systems at a time that enterprise-level technology is shifting towards application development, data analytics and software-defined networks.

The top three skill sets are: IT services (52%), Network Engineering/Management (48%) and System Administration (47%). Project management and application development follow well behind in fourth and fifth places (32% and 26%, respectively).

52%	IT services
48%	Network engineering/management
47%	Systems administration
32%	Project management
26%	Application development
23%	Data analysis/architecture
16%	Telecom management
11%	Software engineering
3%	Long-term planning
5%	Other
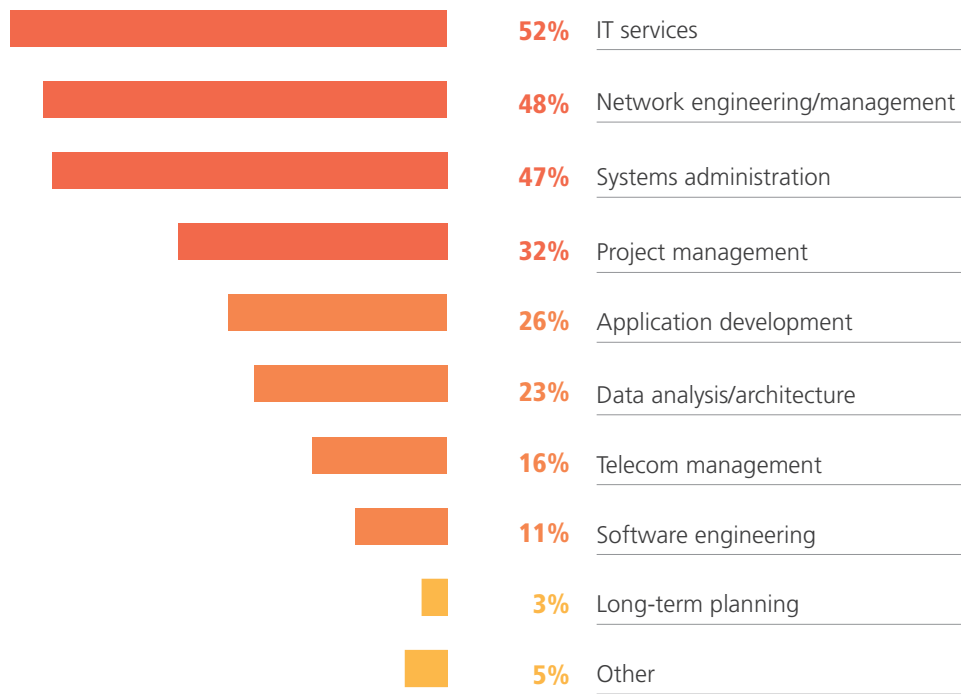
14. IN WHICH AREAS IS YOUR IT TEAM WEAKEST RIGHT NOW?

For a successful transformation, the IT organization will need strong skills in long-term planning, analyzing data and building new software applications. Unfortunately, these are the very skillsets in which IT workers themselves feel they are weakest.

They ranked long-term planning lowest (47%), which helps to explain the finding in Question 2 that three-quarters of the respondents lack a clear-and-detailed IT roadmap. Four other areas of weakness cited by the frontline IT workers are: Application Development (37%), Data Analysis/Architecture (34%), Software Engineering (34%) and Project Management (32%) – all of which will play big roles in defining market leaders in the new era of enterprise technology.

%	Area
47%	Long-term planning
37%	Application development
34%	Software engineering
34%	Data analysis/architecture
32%	Project management
19%	IT services
17%	Network engineering/management
15%	Telecom management
14%	Systems administration
6%	Other
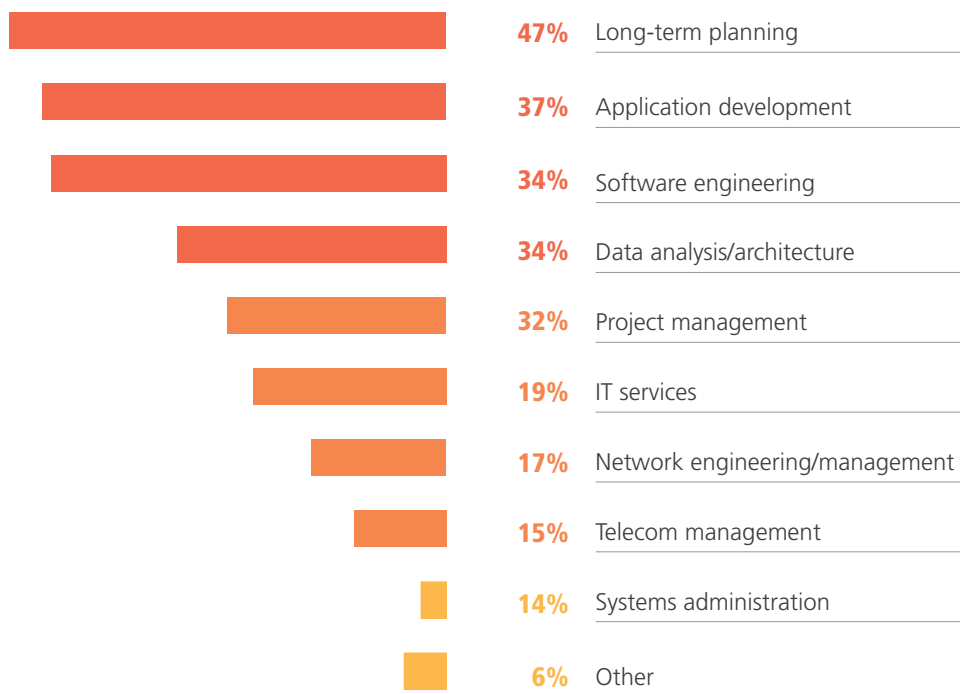
15. WHAT IS YOUR COMPANY'S LONG-TERM PLAN FOR THE CLOUD?

The cloud is quickly changing the face of enterprise technology. Instead of a backroom full of expensive servers, it allows companies to acquire needed processing power on an as-needed basis. It empowers hundreds of thousands of companies to use Software-as-a-Service (SaaS) on a month-to-month basis instead of locking into costly multiyear contracts that are complex to monitor. And the cloud provides nearly unlimited storage room for data at a time when Big Data has become so common that many technicians no longer call it "big." Overall, the cloud permits greater flexibility at lower cost.

That said, our survey found IT workers divided in how much they expect to rely on the cloud over the long term. Half of the respondents said they will likely move most or all of their operations to the cloud, but 26 percent said they will likely use it only for some SaaS applications and data storage. Thirteen percent said they're not sure. And 11 percent said "it doesn't make sense for our business," possibly due to security and regulatory requirements in industries like finance and defense.
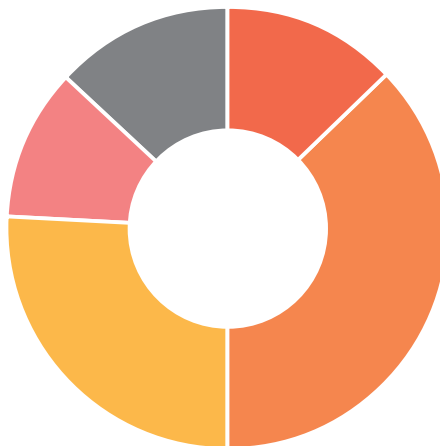
13% Eventually, we want to move everything to the cloud

37% We'll probably move most operations to the cloud

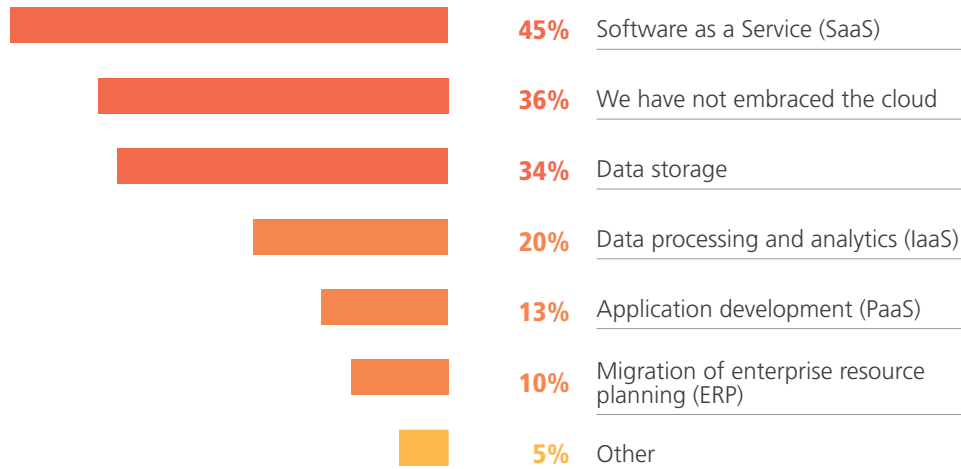**26%** We'll only use it for storage and some SaaS apps

11% It doesn't make sense for our business

13% Not sure

16. HOW DOES YOUR COMPANY CURRENTLY USE THE CLOUD?

Forty-five percent of the survey respondents said they company already uses the cloud for Software as a Service, and 34 percent use it for Data Storage. A significant minority has begun to use cloud-based computing power for data processing (20%) or use it as a platform for application development (13%).

Curiously, 36 percent of the respondents said they have not embraced the cloud at all, twice the percentage of respondents in security sensitive fields like defense or finance.

45%	Software as a Service (SaaS)
36%	We have not embraced the cloud
34%	Data storage
20%	Data processing and analytics (IaaS)
13%	Application development (PaaS)
10%	Migration of enterprise resource planning (ERP)
5%	Other

17. TO WHAT DEGREE DOES YOUR TEAM HAVE SUFFICIENT STAFF AND FINANCIAL RESOURCES TO MEET YOUR COMPANY'S IT OPERATIONAL GOALS FOR THE COMING TWO YEARS?

Essentially, less than one in 10 respondents said their departments are ready to meet the technology challenges for the next two years. Another 26 percent said they are currently "ramping up" to meet the needs of their companies.

Still, 62 percent said they are either under-resourced or "severely" under-resourced to meet the goals in front of them. Another 4 percent admitted they don't know, which may partially reflect those whose companies are lacking detailed technology plans.

8%	Very well-funded and staffed
26%	Ramping up to meet demand
47%	Under-resourced
15%	Severely under-resourced
4%	Don't know
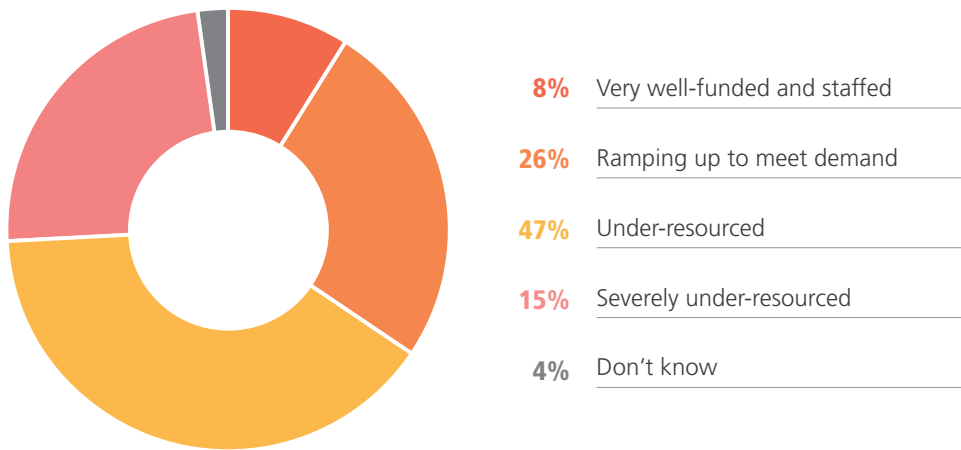
18. WHAT DO YOU BELIEVE BUSINESS STAKEHOLDERS EXPECT FROM THE IT GROUP?

IT frontline workers know that business managers expect them to turn out innovative new applications and services that contribute to sales. Just over half the respondents cited that as the top desire of their business colleagues. Close behind were two other items: increased productivity and performance (45%) and highly reliable, scalable and secure systems (44%). Another 44 percent said the business side wants to make IT more strategic and accountable to the business.
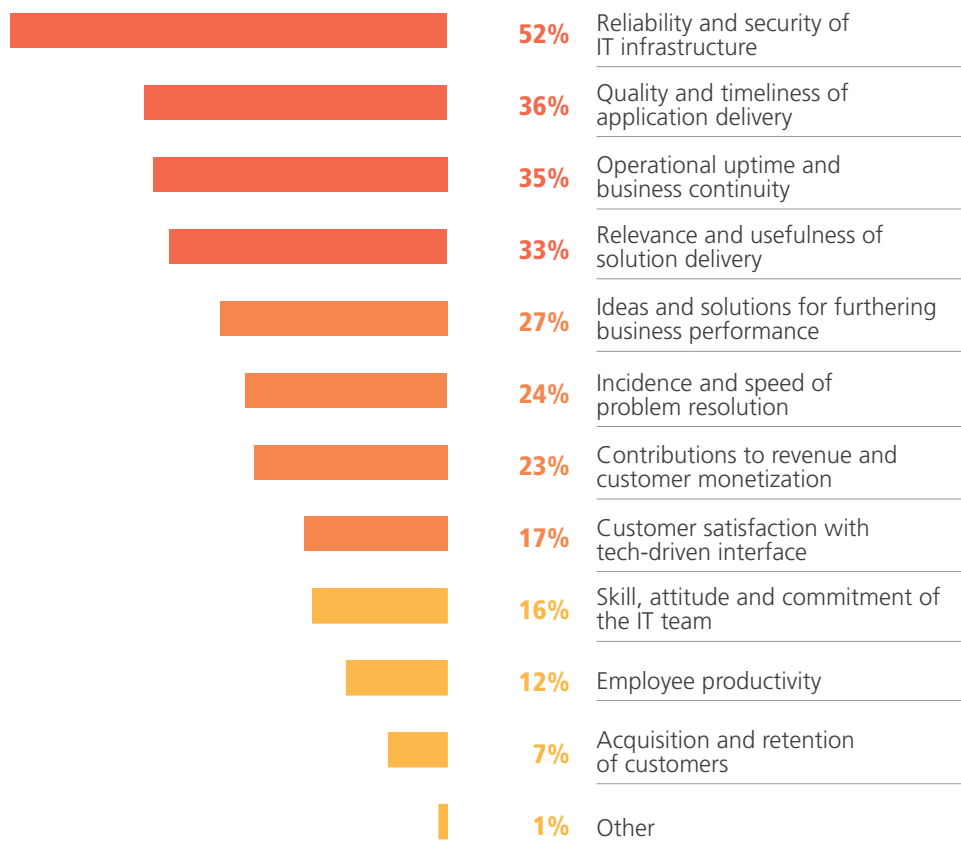
This is the first time that the BPI Network has seen the need for new innovative applications surpass the far more basic requirement of keeping systems running reliably and securely – the prime directive for most enterprise IT departments. That change reflects the growing perception that technology is now a driver business competitiveness and growth.

Percent	Expectation
54%	Innovative new applications and services that contribute to revenue
45%	Increased productivity and performance from technology
44%	Make IT more strategic and accountable to business
44%	Highly reliable, scalable and secure systems
19%	Improved service and support for external customers
17%	Reduce dependency on costly legacy technologies
17%	Increased mobile services for employees and customers
15%	Better dashboards for monitoring the business
11%	Migrate to the cloud and third-party service providers
11%	Find ways to better integrate data from multiple applications
3%	Upgrading and reskilling of technical teams
1%	Other

19. WHAT DO YOU BELIEVE SHOULD BE THE TOP METRICS FOR MEASURING THE IT GROUP PERFORMANCE?

In the last question, we saw that IT workers think business managers want them to develop new applications even more than maintaining and securing the IT infrastructure. Here, however, the frontline IT workers acknowledge the traditional mission of "keeping the lights on" trumps all, with 52 percent listing that as the metric by which their efforts should be judged.
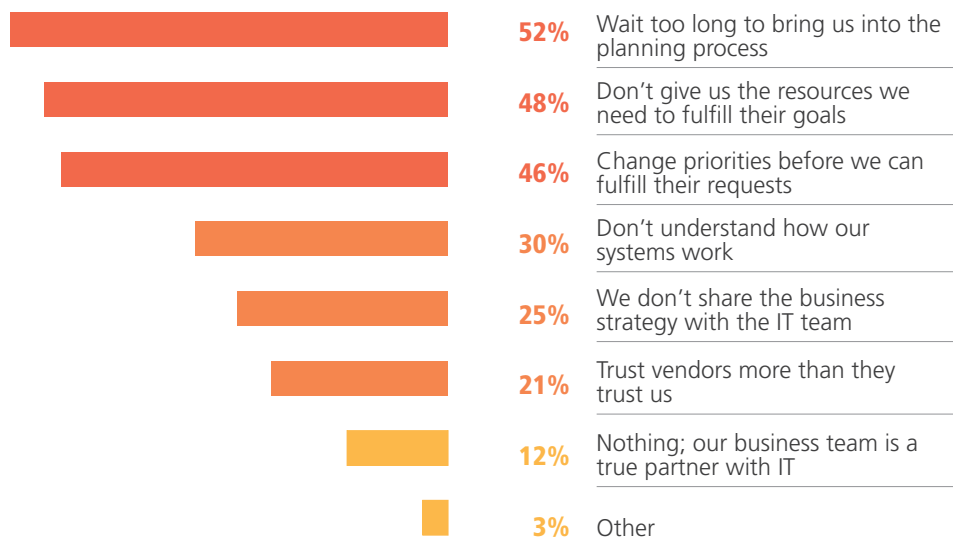
Application delivery finished second here with 36 percent, 35 percent said operational uptime and business continuity, and 33 percent said the most important metric is the relevance and usefulness of solution delivery.

%	Metric
52%	Reliability and security of IT infrastructure
36%	Quality and timeliness of application delivery
35%	Operational uptime and business continuity
33%	Relevance and usefulness of solution delivery
27%	Ideas and solutions for furthering business performance
24%	Incidence and speed of problem resolution
23%	Contributions to revenue and customer monetization
17%	Customer satisfaction with tech-driven interface
16%	Skill, attitude and commitment of the IT team
12%	Employee productivity
7%	Acquisition and retention of customers
1%	Other

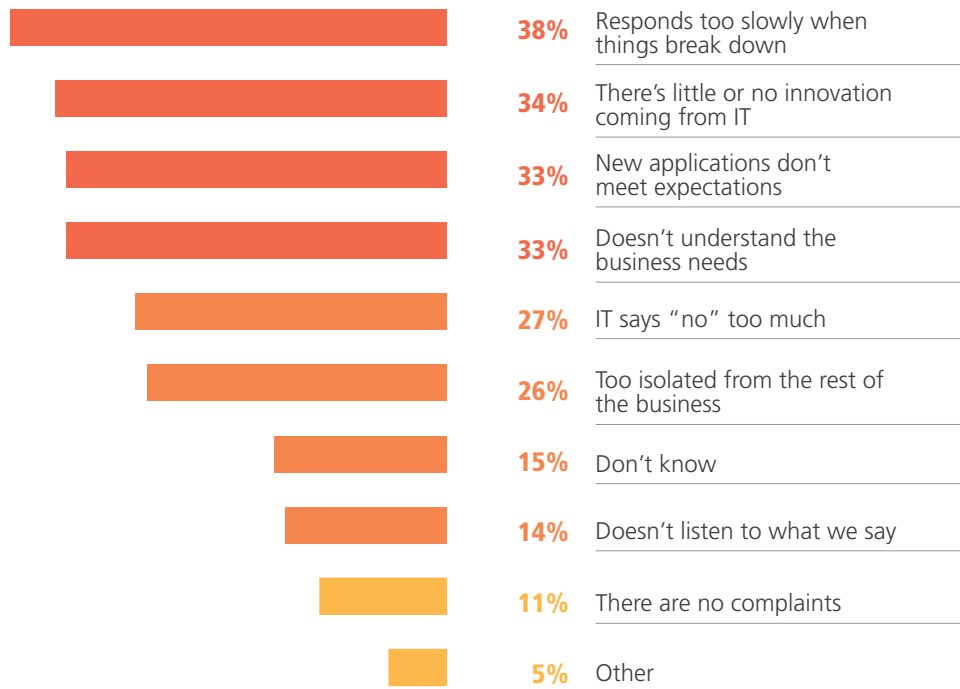## 20. WHAT ARE SOME OF THE BUSINESS-SIDE ISSUES THAT INHIBIT IT INNOVATION?

Business leaders may want to see more innovation, but IT workers suggest their business colleagues only have themselves to blame for any shortfall. The tech workers' perspective is reflected by the three business issues that they say most inhibits innovation: business leaders wait too long to bring IT into the planning process (52%), they don't give IT the resources it needs to fulfill their goals (48%), and they change priorities before tech workers can fulfill their requests (46%).

Other popular choices cited by tech workers shine more light onto the problem: 25 percent said the business strategy isn't shared with the IT team; 30 percent complained the business team doesn't understand how the IT systems work; and 21 percent said the business managers trust vendors more than the in-house IT staff.

%	Issue
52%	Wait too long to bring us into the planning process
48%	Don't give us the resources we need to fulfill their goals
46%	Change priorities before we can fulfill their requests
30%	Don't understand how our systems work
25%	We don't share the business strategy with the IT team
21%	Trust vendors more than they trust us
12%	Nothing; our business team is a true partner with IT
3%	Other

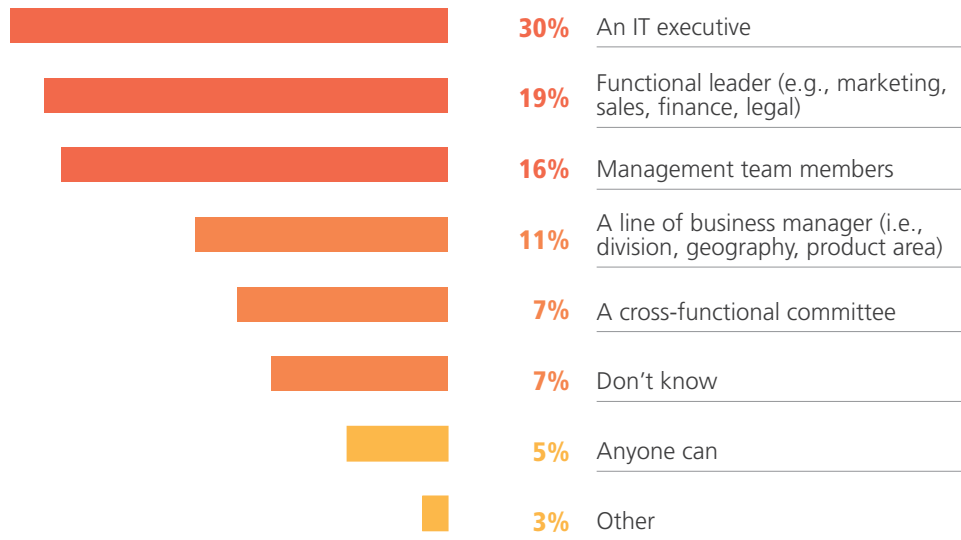## 21. WHAT ARE THE MOST COMMON COMPLAINTS YOU HEAR ABOUT THE IT GROUP?

When the IT system breaks down, everyone wants it fixed ASAP. IT workers know that, and said the top complaint they hear about their group is that it is too slow to react when things break down (38%). Another 34 percent hear that there is little or no innovation coming from IT. And 33 percent hear that new applications don't meet expectations. Finally, 33 percent noted that the complaint they hear most is that IT workers don't understand the business needs of the company, a mirror image of the tech workers' complaint in Question 19 that business team members don't understand the IT systems. This bespeaks the need for greater communication, which IT workers have said it lacking.

Percentage	Complaint
38%	Responds too slowly when things break down
34%	There's little or no innovation coming from IT
33%	New applications don't meet expectations
33%	Doesn't understand the business needs
27%	IT says "no" too much
26%	Too isolated from the rest of the business
15%	Don't know
14%	Doesn't listen to what we say
11%	There are no complaints
5%	Other

22. WHO IN YOUR COMPANY IS MOST LIKELY TO SPECIFY OR RECOMMEND NEW SAAS SERVICES?

According to respondents, functional leaders (19%) and line of business managers (11%) together are now equally likely to recommend a new SaaS service as are IT executives (30%) – a result that is in line with recent predictions that business-oriented leaders are playing a growing role in choosing IT services. Another 16 percent said the management team is most likely to make those recommendations.
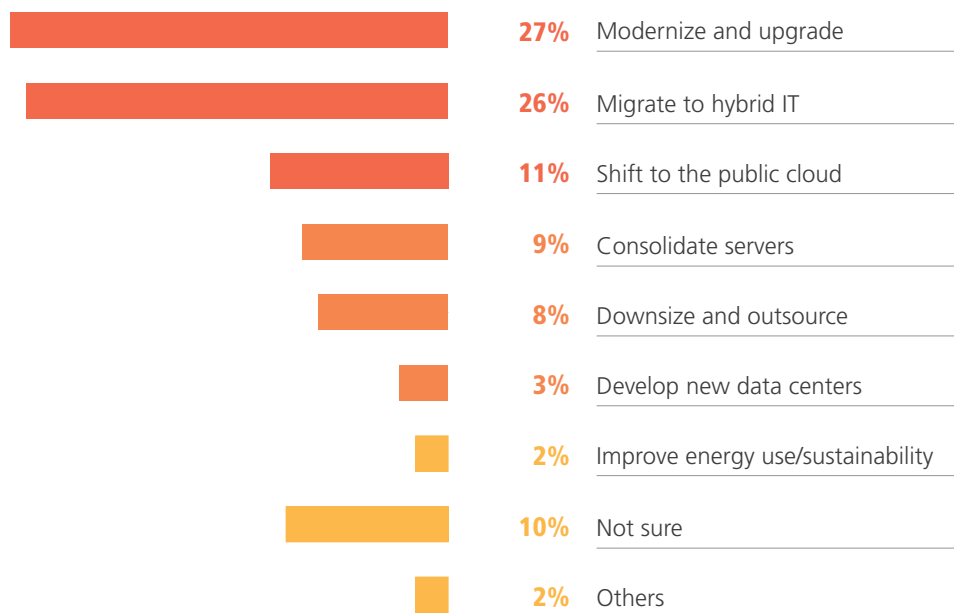
Only 7 percent said the decisions are made by a cross-functional team that includes both business and IT members. That's a slightly larger percentage than those who said anyone can decide (5%). And 7 percent said that they don't know who is recommending SaaS apps used at their company.

30%	An IT executive
19%	Functional leader (e.g., marketing, sales, finance, legal)
16%	Management team members
11%	A line of business manager (i.e., division, geography, product area)
7%	A cross-functional committee
7%	Don't know
5%	Anyone can
3%	Other

23. WHAT IS YOUR COMPANY MOST LIKELY TO DO WITH ITS DATA CENTER OVER THE NEXT SEVERAL YEARS?

This may be the biggest single question facing IT teams today: what to do with the company's costly datacenter as the growth of data exceeds its capacity during the next few years? The answers show the early signs of a shift to new models for enterprise systems that can expand more readily to shifting needs. While the leading single response is to "modernize and upgrade" their current facilities, the majority of respondents seem to favor non-traditional paths.

Twenty-six percent said their companies will migrate to a hybrid IT model, 11 percent plan to shift to the public cloud, 9 percent said they'd consolidate some servers, and 8 percent plan to downsize their datacenter and outsource some activities. Ten percent said they're still not sure what will happen.

27%	Modernize and upgrade
26%	Migrate to hybrid IT
11%	Shift to the public cloud
9%	Consolidate servers
8%	Downsize and outsource
3%	Develop new data centers
2%	Improve energy use/sustainability
10%	Not sure
2%	Others

About Our Survey Participants

This BPI survey was conducted during October and November 2015 and includes responses from a sample of 200 IT frontline workers in North and Latin America (38%), Europe (23%), the Middle East/Africa (20%) and Asia/Australia (18%). Almost half the respondents were from companies with sales of over $500 million. The respondents serve a wide range of 24 industries, led by finance (13%), technology (12%), and manufacturing or professional services (10% each).

DIMENSION DATA COMMENTARY
HOW DATA DRIVES THE TRANSFORMATION

Big data is more than a buzzword. It's what drives transformation at corporations around the globe. It helps you understand your customers' buying behavior. It can help businesses close targeted sales. There's so much data now that many CIOs have stopped calling it "big." It's enormous and it's growing fast.

But how should businesses approach this surge in data strategically?

Peter Prowse, Vice President of Strategic Partnerships (EMC Federation), says the underlying principles of data are "fundamentally changing the way businesses will be able to react to, or even anticipate, business opportunities." Essentially, the impact and value of data shouldn't be underestimated.

"In simple terms, big data refers to data sets that can't be handled easily through traditional methods such as dedicated servers driving a traditional database or data warehouse structure (like Oracle or Teradata), and the associated analytics toolsets like Cognos that would drive interrogation and analytics," he says. He offers three characteristics of this new data environment:

- **Volume:** the massive amount of data generated and collected by organizations

- **Variety:** the array of different types of collected data, from text, to audio, video, web logs, social media and more

- **Velocity**: the speed at which data is collected, analyzed and some even say anticipated.

Kevin Leahy, Group General Manager for the Data Centre Business Unit at Dimension Data, says it's all about identifying patterns from raw information, the essence of data mining. For example, it might entail finding a connection between beer and diapers.

"By analyzing cash slips, one might discover an unexpected correlation between the sales of beer and diapers. This could be because fathers on an errand to buy nappies also conveniently purchase beer at the same time," he says. The newly discovered information can then be used to motivate a change in sales strategy that could drive higher sales.

"Imagine what's possible with all of the new data generated from web browsing, online transactions, even tracking movements within shopping malls via mobile devices," he adds. "In the financial services sector, for example, banks and insurance organizations use big data to identify fraud by spotting patterns that would indicate the likelihood of fraudulent transactions."

Prowse offers another example from the world of telecommunications: "A large US mobile phone operator – let's call it X Telecoms – was suffering significant customer churn across its mobile customer base. By using traditional data analytics tools and processes, the organization was able to quantify the amount of churn quite accurately, but not the reasons for it. In desperation, X Telecoms turned to a group of data scientists to identify the underlying cause of the churn.

BRINGING DEXTERITY TO IT COMPLEXITY | REPORT

Using unstructured data the company captured every day, it was able to provide the following insights:

- Every time one person switched a mobile plan to a competing provider, five friends would closely follow, which then meant that each of those five friends would have another five friends leaving the network – a snowball effect.

- This behavior was driven by a bundling offer from mobile companies, offering free phone calls and texts to five friends.

X Telecoms quickly took action by introducing a counter campaign: every time one of its customers switched providers, it immediately sent an offer to their five selected friends, providing them with a compelling offer to renew their plans with X Telecoms. Through that one action, it reduced churn in its base by more than 65 percent.

NEW TOOLS

While unstructured data can't be easily converted into actionable intelligence by traditional databases, these examples show how the tools for gleaning knowledge and insights from it are developing fast.

"We're seeing rapidly advancing techniques of artificial intelligence, such as natural-language processing, pattern recognition and machine learning. These artificial-intelligence technologies can be applied in many fields," says Prowse. For example, Google's search and advertisement business and its experimental robot cars – which have navigated over 1 million miles on their own – use a bundle of artificial-intelligence tools that analyze vast quantities of data and enable instant decision-making.

These developments are ushering in massive opportunities for businesses. In turn, CIOs are coming under increasing pressure to provide the necessary tools and processes to enable a big data strategy for their businesses in order to capture market opportunities and/or prevent reputational damage.

The ability to capture and effectively utilize data from multiple sources, in multiple formats, and in real time (volume, velocity, variety), touches almost every aspect of the IT ecosystem, from storage to security. However, it's important to define an underlying information policy first before new infrastructure or processes are implemented.

Organizations should decide which types of information they want to keep and for how long, how and where they need the information stored, and how they would access the information. This will help guide further activities such as network infrastructure optimization, leveraging both traditional and new data-mining toolsets, or making structural and process improvements to streamline the way decisions are made.

"CIOs need to ensure that their house is in order," says Prowse. "Consider the impact on the network. We're reaching the point where the effectiveness of networks is inversely proportional to the volume of information they contain. Organizations need to make sure that all the elements used to build the network work together well. The traditional approach – keeping networks running by adding more bandwidth – will no longer do. The data-ready network needs to be developed with overarching business objectives in mind, by a team that comprises representatives from multiple technology domains and business units."

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START WITH SECURITY

Concerns about security change with big data. It's precisely the unstructured nature of big data that makes it more vulnerable to security breaches than corporate information generated by the usual applications.

"Unstructured data makes security professionals nervous. This is because it's not 'tagged' to a specified risk profile or category, and it's not yet clear as to what its value is to the business," says Matthew Gyde, Group General Manager for Security Solutions at Dimension Data. "The result is that it can't be mapped to your corporate governance policies and remains a weak spot in your security posture. With data flowing into the organization in an unstructured way, there's also a higher risk that it may contain malicious content."

That said, organizations don't need to be frightened of big data, but they should pursue it in the right way. Businesses that are currently investing only about 7 percent of their data budget on security. This suggests they may be falling into the same trap with security as in years past. Security solutions shouldn't be "bolted onto" whichever new solution you've purchased as an afterthought, but should be built into the solution itself. Security should be part of the big data conversation right from the start.

START NOW

Organizations should know they don't need large investments in infrastructure and resources to start.

"You can start by installing a low-cost, simple platform to gather the data, and from there, begin to identify useful patterns that would almost immediately drive returns, if followed up with proactive activity," says Leahy. "A small investment in such a platform can be funded from the benefits gained by its use. This is possible across all business sectors where a broader range of patterns may become relevant."

These could include quality control patterns in manufacturing, patient re-admittance patterns in hospitals, bookings versus cancellations patterns in travel, and many other processes. Even small entry points are showing business returns that fund business growth and allow IT to build the skills needed to take this to the next level.

Gyde advises that, from a security perspective, it's important to consider a few measures that could help make big data safer. "Importantly, this should involve file-level and database-level monitoring, which in turn create the need for greater management to respond to alerts generated by the monitoring applications," he says.

For example, perhaps there's a requirement to implement a managed security service delivered by a third party in order to cope with the added workload and ensure consistency and responsiveness in securing big data. It's important, however, to partner with a security services provider that understands the broader effects of big data on the data center and networking environments, and has the relevant integration skills, expertise, vendor relationships and global footprint to match your organization's requirements.

PROGRAM PARTNERS

The Business Performance Innovation (BPI) Network is a peer-driven thought leadership and professional networking organization dedicated to advancing the emerging roles of the chief innovation officer and innovation strategist within today's enterprise. The BPI Network brings together global executives who are champions of change within their organizations through ongoing research, authoritative content and peer-to-peer conversations. These functional area heads (operations, IT, finance, procurement, sales, marketing, product development, etc.) and line-of-business leaders are advocates for innovation as a fundamental discipline and function within 21st-century organizations. They seek to demonstrate where and how new, inventive solutions and approaches can advance business value, gratify customers, ensure sustainability and create competitive advantage for companies worldwide. More information is available at **www.bpinetwork.org**.

Founded in 1983, Dimension Data plc. is an ICT services and solutions provider that uses its technology expertise, global service delivery capability, and entrepreneurial spirit to accelerate the business ambitions of its clients. Dimension Data is a member of the NTT Group. **www.dimensiondata.com**.

DatacenterDynamics is a brand of DCD Group, a global B2B media and publishing company that develops products to help senior professionals in the world's most ICT dependent organizations make risk-based infrastructure and capacity decisions. Their portfolio of live events, online and print publishing, business intelligence and professional development brands are centred on the complexities of technology convergence. Operating in 42 different countries, they have developed a unique global knowledge and networking platform, which is trusted by over 30,000 ICT, engineering and technology professionals. More information is available at **www.datacenterdynamics.com**.

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