# IT Modernization: critical to digital transformation

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avanade

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# Executive summary

**Information technology must be modernized to address the emerging needs of the digital business.**

This study reveals that senior IT decision makers see huge benefit in modernizing their IT systems and approaches, both in terms of growing revenue and reducing the cost of business operations. They also predict a negative impact to the long-term growth of those organizations that don't modernize their IT systems and approaches.

Respondents are highlighting three dimensions that are preventing them from realizing these benefits:
- The typical IT systems and approaches in use today, are not capable of meeting the emerging needs of the digital business.
- There is a disconnect revolving around demonstrating the business case required to fund major modernization initiatives, and the businesses ability to appreciate them.
- The need to take a cloud first approach is clear, so it's no longer a 'why' question around cloud or even so much a 'when', (it's happening), it's more the 'how' in what clearly is becoming a hybrid world.

At the same time the need to find the skills and experience not only to make the most of the technologies, but also the approaches to use them, has made senior IT decision makers realize they need to look outside of their own organization.

Avanade commissioned independent technology market research specialist Vanson Bourne to undertake the research upon which this report is based.

# This report explores:

How senior IT decision maker's view IT Modernization

If today's conventional IT systems and approaches are fit for purpose

The challenges associated with implementing an IT modernization strategy

The role of cloud in IT modernization

Which new technologies and approaches are considered key

IT modernization done in-house vs working with a partner

# Key takeaways

**There are huge benefits to be had from modernization.**
- On average, senior IT decision makers believe it has the potential to boost annual revenue by over 14% – an increase of more than $1 billion a year.
- Business operating costs can benefit too – a reduction of over 13% is anticipated.
- Most (80%) believe that not modernizing IT systems will negatively impact the long-term growth of their organization.

**Today's conventional systems and approaches are not fit for purpose.**
- Around two-thirds (65%) believe that the conventional systems and approaches typically in use today are not fit for purpose for solving the emerging requirements of the digital business.
- To meet digital business needs, the majority (93%) agree that both a predictable approach (to optimize core systems) and an exploratory approach (to innovate the business) are needed.
- Around nine in ten believe that modernized IT systems are critical to both achieving these two distinct approaches (88%) and to addressing emerging digital business requirements (88%).
- Around nine in ten believe that modern software engineering approaches (89%) and process automation technologies (92%) are key to addressing emerging digital business requirements.

**So why isn't everyone doing it?**

**A business-benefits focused business case is a must; IT benefits alone will not cut it.**
- The majority (93%) believe business ROI benefits must be included alongside IT benefits to justify the need for modernization.
- However, most (87%) believe that their organization's executives don't fully appreciate the potential ROI of IT modernization projects.

**Moving to modernized IT, the importance of a cloud-first approach is clear... for a hybrid world.**
- Today, around half (47%) of respondents report that the majority of their organization's custom applications still run on-premises, but this will drop 22% in three years.
- Over the next three years organizations will move more and more from on-premises to cloud (IaaS from 14% today to 30%, and PaaS 8% today to 25%) creating a hybrid IT world.
- To support this hybrid world, almost nine in ten (87%) respondents agree that their organization is planning to implement vendor-provided cloud stacks (such as Microsoft Azure Stack) to integrate their on-premises data center with the public cloud.

**For those not there yet – don't worry, you are not alone.**
- On average, just 33% of organizations' systems are made up of modernized technologies.
- Interest in vendor support is high and the key elements desired in a vendor to support with IT modernization are a proven ability with modern software engineering practices (84%) and experience in cloud migration (81%).

# The promised land of IT modernization

We won't keep you in suspense. Those seeking the strongest case for modernizing IT systems and approaches, need look no further than the bottom line.

Of the majority (88%) of senior IT decision makers who agree that modernized IT systems are critical to addressing the emerging requirements of the digital business, a significant revenue boost is anticipated from their use. On average, these respondents believe that annual revenues could increase by 14% – a huge rise, which for the large organizations surveyed equates to $1 billion on average. This gain is fueled by widespread business ROI benefits of modernization, which we will explore later.

**Annual revenue**
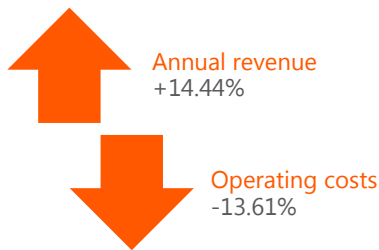+14.44%

**Operating costs**
-13.61%

*Figure 1: Analysis of the average potential impact on annual revenue and business operating costs from modernized IT systems, based on respondents who agree that modernized IT systems are critical to addressing the emerging requirements of the digital business (701)*

But it doesn't end there. The same group expect business operating costs to reduce by an equally large margin – over 13% on average – from the use of modernized IT systems. Such efficiency improvements can be driven by the techniques and technologies that modernization can bring. So where should organizations start? Most agree that the answer lies not in a single, catchall method but instead the implementation of two distinct approaches to the way the IT department operates.

# Revolutionize your IT approach

**Expectations are growing**
As more and more large organizations inch ever-onward with their digital transformation journeys, the IT department finds itself at the epicenter of action, and with it facing demands from all sides. Over the next three years, senior IT decision makers anticipate multiple departments knocking on their door. Most commonly, for eight in ten (80%), the operations department will be at the front of the queue. In addition, sales (71%), marketing (63%) and finance (62%) teams are all expected to place demands aimed at improving their processes using modernized IT.

**Two distinct approaches are required**
So with demands coming from throughout the business, from back-office to front facing, what approach can IT adopt to meet the needs of the increasingly digital business? For the vast majority, a single approach is not enough. Almost all (93%) believe that the IT department must adopt two distinct approaches for it to be successful. Firstly, a predictable approach that optimizes core systems and provides solid foundations to build upon. And secondly, an exploratory approach that embraces the use of technology to innovate the business and drive it forward. However, for all this to happen successfully, organizations must look ahead to the next generation of systems and approaches – almost nine in ten (88%) senior IT decision makers agree that modernized IT is critical to the adoption of the desired dual approach.

**A dual approach**

In order to meet the needs of the digital business, IT needs to adopt two distinct approaches – a predictable approach to optimize core IT systems and an exploratory approach that uses technology to innovate the business — 93%

Modernized IT systems and approaches are critical to adopting both a predictable approach to optimize core IT systems and an exploratory approach that uses technology to innovate the business — 88%
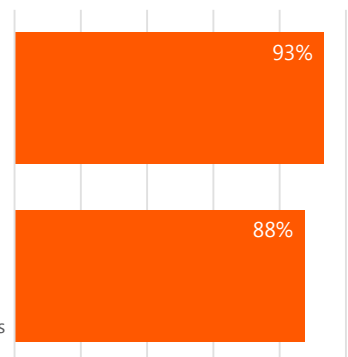
*Figure 2: Analysis of those who agree or strongly agree with the above statements about their organization's IT being able to meet business expectations; all respondents (800)*

**IT modernization viewed as critical to business success**
Modernized IT systems and approaches are widely acknowledged as fundamental to a new, improved IT way of working, but it doesn't end there. Indeed, such technologies are equally (88%) seen as critical to addressing the emerging requirements of the digital business – moving their value out beyond just IT and into the wider organization's digital ecosystem. And what's more, most believe that organizations cannot ignore the merits of modernization. As we will see later, doing so could have long-term consequences.

### The need to modernize

Modernized IT systems and approaches are critical to addressing the emerging requirements of the digital business — **88%**

I believe that not modernizing IT systems and approaches will negatively impact the long-term growth potential of our company — **80%**

*Figure 3: Analysis of those who agree or strongly agree with the above statements about their organization's IT being able to meet business expectations; all respondents (800)*

Faced with the growing demands of an ever more complex digital environment, organizations cannot afford to be left behind and are leaning on their IT departments to provide support and innovation. For the IT department itself, the need to modernize systems and approaches is recognized in order to meet growing digital business expectations. An argument that grows all the more prevalent when we shine a light on the limitations of today's systems.

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**Further insights**

- **By country:** Brazil (99%), Canada (96%) and the U.S. (94%) are most likely to agree that modernized IT systems are critical to addressing digital business requirements.
- **By size:** Organizations of 501 to 1,000 employees (99%) are more likely that those of more than 5,000 employees (85%) to agree that two distinct approaches to IT are needed.
- **By sector:** Organizations from "energy, oil/gas and utilities" (92%, 94%), and "financial services" (91%, 91%) are most likely to agree that modernized IT systems are both critical to adopting two distinct approaches to IT and to addressing the needs of the digital business

# Today's technology will not work for tomorrow

We asked senior IT decision makers to consider the breakdown of their current IT systems, in terms of applications, infrastructure and workplace technologies, under the below classifications:

| IT system classifications |
| --- |
| • **Legacy:** aging parts of the IT environment that add risk and cost to the business<br>• **Conventional:** types of IT systems businesses are running on today<br>• **Modernized:** the next wave of IT technologies and approaches empowering the business to innovate in the digital world |

**Conventional IT is not fit for purpose and not modernizing carries major long-term risks**

Everybody knows the challenges that organizations face with their legacy systems, but incredibly, when it comes to addressing the emerging requirements of the digital business, almost two-thirds (65%) believe that conventional systems – the very systems that organizations are running on today – are not fit for purpose. To add context to this, on average, 67% of an organizations' technology is made up of legacy (31%) and conventional (36%) systems.

Only 33% of technology in large organizations is modernized, according to respondents. And the need to properly assess these non-modernized systems and look to the future is not something that can be swept under the carpet, according to senior IT decision makers. Most (80%) believe that not modernizing IT systems will negatively impact the long-term growth of their organization. Far-reaching consequences in an ever-more disrupted, competitive environment.

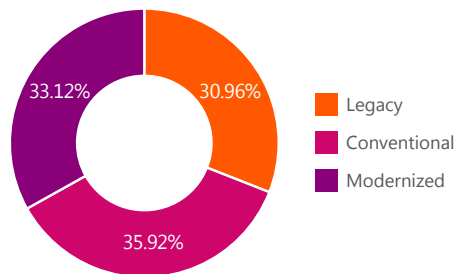### Breakdown of organizations' technologies



*Figure 4: Analysis of the average breakdown across respondents' organization's application portfolio, infrastructure deployments and workplace technologies; all respondents (800)*

When it comes to looking to modernize across such broad and diverse portfolios of technology, the majority (90%) agree that a holistic view of any modernization project is key to best enabling a digital transformation – organizations must consider the full scope of their current technologies, in applications, in infrastructure and in the workplace.

So with the vast potential rewards of modernizing that we've already seen and the potential long-term risks of doing nothing, it all begs the question… why isn't everyone doing it?

| Further insights |
| --- |
| • **By country:** Canada (76%) is most likely to agree that conventional IT systems are not fit for purpose. Canada (90%) and Brazil (90%) are most likely to believe that not modernizing will have long-term negative growth impacts.<br>• **By size:** Organizations of 501 to 1,000 employees are most likely to agree that a holistic view of modernization is key (92%).<br>• **By sector:** Organizations from energy, oil/gas and utilities (89%), and media, leisure and entertainment (84%) are most likely to agree that not modernizing will negatively impact long-term growth. |

# Why isn't everyone doing it?

**Building a comprehensive business case beyond just IT**
The vast majority (93%) believe that business ROI benefits must be included alongside those of IT in order to justify a comprehensive modernization business case – over three-quarters (77%) agree that measuring ROI in IT terms alone will not be enough. Organizations cannot afford to be too narrow in their thinking.

When it comes to the ROI of an IT modernization project, most senior IT decision makers believe business productivity benefits/improvements (69%) to be the biggest prize on offer. A further six in ten also report that it can boost business innovation (57%) and reduce operating costs (56%). Clear, widespread organization-wide advantages are up for grabs, but let's not forget the IT department in this. Similar numbers of respondents believe IT modernization can also unlock greater IT staff productivity (61%) and further IT cost reduction (56%). A holistic argument is emerging for IT modernization and what it can bring – not just to the immediate IT department, but to the business as a whole.
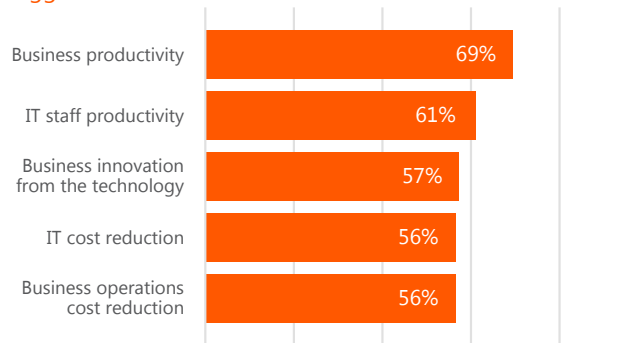
Yet, despite the vast potential rewards and the recognition that business ROI benefits must be taken into account, over half (53%) still report demonstrating the business ROI as a key challenge to justifying the need for IT modernization. Perhaps as a consequence of this, more than four in ten (44%) cannot find the budget outside of the IT department for modernization projects. Both of these challenges arise from a struggle to make the wider business appreciate and understand the bigger picture, and for most that starts at the very top. Almost nine in ten (87%) respondents believe that their organization's executives could better appreciate the potential ROI of IT modernization projects. Without the necessary buy-in from above, many organizations are at risk of missing out on what senior IT decision makers believe that modernization can deliver.

But it's not just business case challenges holding organizations back. The adoption of key modernized platforms and technologies via the cloud is another core component that needs to be addressed and understood.

**The importance of a cloud-first approach**
Today, around half (47%) of respondents report that the majority of their organization's custom applications remain running on-premises. Only the minority have already made the leap to most apps running on Infrastructure-as-a-Service (IaaS) (14%) or on Platform-as-a-Service (PaaS) (8%). What's interesting is when we consider the next one to three years. In this time period, more and more organizations will start to move away from majority on-premise, but as IaaS adoption slows (14% today, to 29% in one year, and 30% in three years), PaaS adoption will continue to surge (8% to 15% to 25%) – more than tripling in the same timeframe. This rapid rise in growth points to the long-term high value that senior IT decision makers place on higher-level cloud services, such as PaaS, above IaaS.

## Biggest ROI benefits of IT modernization

| Benefit | Percentage |
|---|---|
| Business productivity | 69% |
| IT staff productivity | 61% |
| Business innovation from the technology | 57% |
| IT cost reduction | 56% |
| Business operations cost reduction | 56% |

*Figure 5: "Where do you believe the biggest ROI benefits of an IT modernization project lie?"; combination of responses ranked first, second and third; all respondents (800)*

## A slow and steady shift to the cloud

But on-premise isn't going away just yet and for many a hybrid approach it's here to stay. In three years, 22% of respondents' organizations will retain the majority of their custom apps on-premises. Another indicator of this cautious pathway is the growth of hosted data center use in the immediate future. In one year's time, it is the most likely (30%) place for respondents' organizations to run the majority of custom apps, before falling away to just 19% in three years' time. A temporary stepping stone along the road to planned greater cloud deployment.

### PaaS adoption is growing

| | | | | | |
|---|---|---|---|---|---|
| Today | 47% | 29% | 14% | 8% | 2% |
| In 12 months' time | 24% | 30% | 29% | 15% | 2% |
| In 36 months' time | 22% | 19% | 30% | 25% | 3% |

- On-premise data center
- Hosted data center
- Infrastructure as a Service (IaaS)
- Platform as a Service (PaaS)
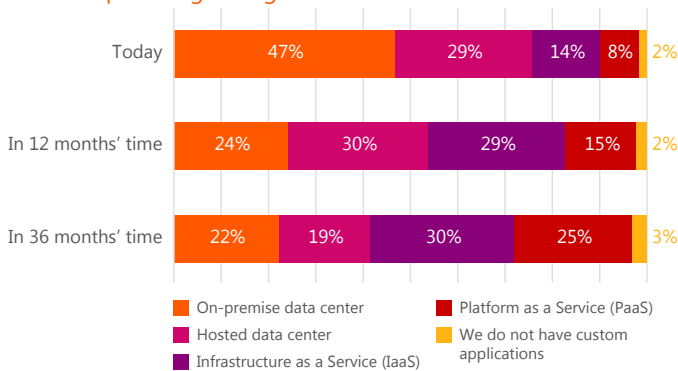- We do not have custom applications

*Figure 6: "Where are the majority of your organization's custom business applications running today and where do you envisage them running in  12 and 36 months' time?"; all respondents (800)*

## The PaaS pioneers

So for the small number who have already made the leap to majority PaaS adoption, what benefits have they experienced? The answer is "multiple." For IT departments, over six in ten (63%) respondents report a reduction in time spent developing and testing applications, while around half say their organization is experiencing a reduction in time spent on IT administration (48%) and lower costs compared to IaaS or on-premises alternatives (48%). Time and cost savings are a key feature of PaaS deployment, freeing up the IT department to help support and innovate the business. Indeed, for many the true value of PaaS lies in driving benefits throughout the business - more than half say PaaS has led to an accelerated application delivery time to market (54%) and higher levels of business innovation (52%). However, with those running the majority of their custom apps on PaaS still in the minority currently (8%), what is holding organizations back from tapping into the benefits?

## Challenges to PaaS adoption

Reported challenges to using PaaS are varied and likely to be different for many organizations. Concerns about security (43%) and operational risk (43%) are the most commonly reported, but intriguingly, significant numbers of senior IT decision makers face hurdles in demonstrating the business ROI (39%) and the IT ROI (32%) in order to justify the business case. Perhaps most alarmingly of all, around a third (32%) are unclear about the value of PaaS and a quarter (25%) do not see any advantage in using it. A key theme of these challenges for many organizations centers around a lack of understanding and awareness of what PaaS can bring – in the words of one senior IT respondent, "Executive level has no idea how this system works." These benefits are highlighted by the small number who have already made the leap to embrace it.

## Barriers to greater PaaS adoption

| Reason | % |
|---|---|
| Security | 43% |
| Operational risk | 43% |
| Cannot demonstrate the business ROI to justify the business case | 39% |
| I understand the value but lack the budget to cost reduction invoke PaaS services within my applications | 39% |
| I am unclear about the value of PaaS and associated services | 32% |
| Cannot demonstrate the IT ROI to justify the business case | 32% |
| I don't know how to update my applications to take advantage of PaaS services | 26% |
| I don't see any advantages of using PaaS within my organization | 25% |
| Not a top priority | 19% |

*Figure 7: "What are the reasons why you aren't using PaaS within your organization today?"; combination of responses ranked first, second and third; only asked of respondents whose organization does not currently run the majority of its custom business applications on PaaS (733)*

### It's a hybrid world

As we have observed, a hybrid approach is here to stay. With many organizations facing the opposing forces of wanting to innovate their approach to drive business value, whilst being grounded in concerns around potential security and operational pitfalls, most are seeking the best of both worlds. To support such an approach, almost nine in ten (87%) respondents agree that their organization is planning to implement vendor-provided cloud stacks (such as Microsoft Azure Stack) to integrate their on-premises data center with the public cloud. As a result, cloud vendors that support hybrid integration will find themselves in demand.

But in addition to the modernization challenges we have already observed, the cautious approach to greater cloud deployment, as evidenced by many organizations' short-term plans to use hosted data centers as a stopover, is also a significant hurdle to overcome. So what IT challenges are behind these stumbling blocks to modernization?

### Multiple IT challenges are also apparent

Almost all (95%) respondents' organizations face fundamental IT challenges as an additional hurdle to modernization, with the most common centering around risk concerns. Around four in ten report security risks associated with legacy platforms (38%) or operational risk (38%) as key barriers. Most commonly however, more than two-fifths (42%) believe that security challenges with cloud technologies are the biggest issues their IT department faces. With cloud being above legacy systems on the list of concerns faced, it suggests that there remains a lack of trust in modernized technologies such as public cloud (backed up by the anticipated use of hosted data centers in the next year), despite the previously observed plans for greater deployment. With cloud technologies the road less traveled, is this another reason why many organizations are sticking to hybrid as the way forward, believing it to be potentially the easier (or safer) route?
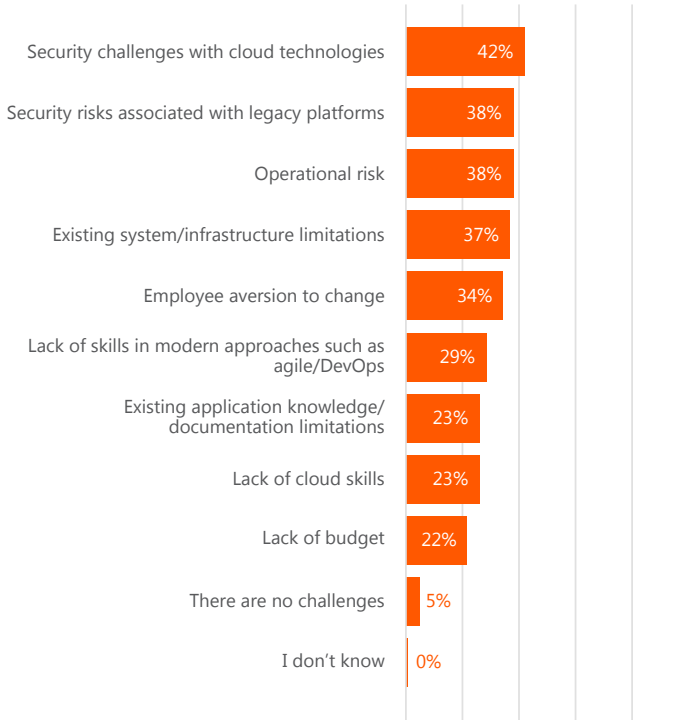
## IT challenges in modernization projects



| Challenge | % |
|---|---|
| Security challenges with cloud technologies | 42% |
| Security risks associated with legacy platforms | 38% |
| Operational risk | 38% |
| Existing system/infrastructure limitations | 37% |
| Employee aversion to change | 34% |
| Lack of skills in modern approaches such as agile/DevOps | 29% |
| Existing application knowledge/documentation limitations | 23% |
| Lack of cloud skills | 23% |
| Lack of budget | 22% |
| There are no challenges | 5% |
| I don't know | 0% |

*Figure 8: "What do you see as the biggest IT challenges in IT modernization projects?"; combination of responses ranked first, second and third; all respondents (800)*

> **Further insights**
>
> - **By country:** Canada (68%) and the UK (60%) are most likely to report demonstrating the business ROI of IT modernization as a key challenge.
> - **By size:** Organizations of 501 to 1,000 employees are most likely to agree that business ROI benefits must be taken into account (98%) and that their executives could better appreciate the potential ROI of modernization (89%).
> - **By sector:** Energy, oil/gas and utilities (100%) and manufacturing and production (96%) are most likely to believe that business ROI benefits must be taken into account. Energy is also most likely to report that executives could better appreciate the ROI of modernization projects (92%).

Despite all of the challenges faced, what is clear is that those who can address and overcome these hurdles and take the brave leap to modernize through investment in new technology models and techniques stand to benefit greatly. Two of which we explore in the next section.

# A cloud-first approach warrants new techniques and technologies

## 1. The role of modern software engineering

> **Modern software** engineering (MSE) is an approach for developing, maintaining and operating applications with high agility and frequent innovation.

Mirroring their views on the importance of modernized IT systems, the majority (89%) of senior IT decision makers also agree that MSE is a key way to address emerging digital business requirements, and a wide range of techniques are in scope, both currently and planned for the future.

Most respondents report that their organization is using modern software engineering techniques, the most common being DevOps teams (72%), agile application development (69%) or a cloud-first approach (67%). However, diving deeper into this use, only the minority believe that their organization is expert at doing so – only around three in ten for DevOps teams (30%), agile application development (31%) or cloud-first approach (31%) believe they are successfully making full use of these practices, with greater numbers believing that further improvement is needed.

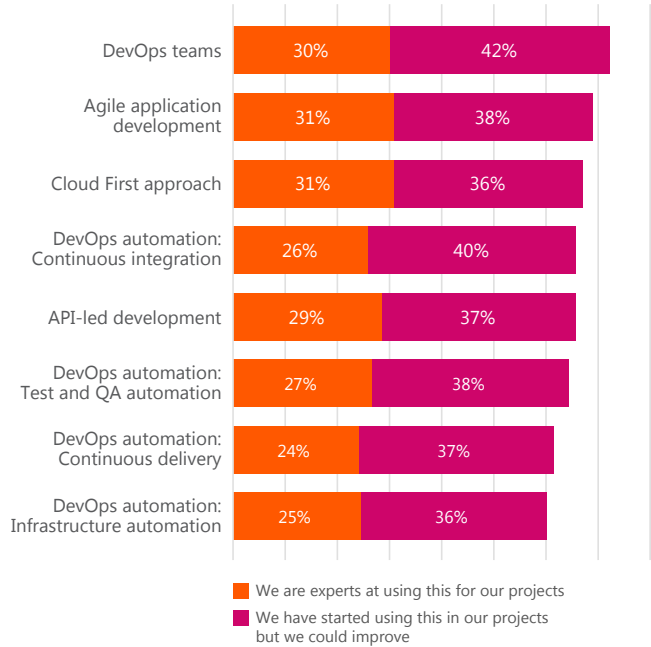### Use of modern software engineering techniques

| Technique | We are experts at using this for our projects | We have started using this in our projects but we could improve |
|---|---|---|
| DevOps teams | 30% | 42% |
| Agile application development | 31% | 38% |
| Cloud First approach | 31% | 36% |
| DevOps automation: Continuous integration | 26% | 40% |
| API-led development | 29% | 37% |
| DevOps automation: Test and QA automation | 27% | 38% |
| DevOps automation: Continuous delivery | 24% | 37% |
| DevOps automation: Infrastructure automation | 25% | 36% |

■ We are experts at using this for our projects
■ We have started using this in our projects but we could improve

*Figure 9: Analysis of respondents' organizations that are using modern software engineering techniques currently; all respondents (800)*

### Widespread benefits of MSE

Despite a need for many to do better, the widespread adoption of MSE techniques is a key barometer that organizations see the benefit of new approaches – indeed, almost all (97%) respondents believe that there are IT benefits to be had. Among a wide range of advantages reported, most commonly around two-thirds (64%) believe modern software engineering can lead to improved overall performance in service levels. Reflecting the business ROI benefits of IT modernization, over four in ten say that MSE can assist with rapidly deploying continual innovation (46%) and open up improved cost savings opportunities (42%). Additional benefits include overall service delivery, innovation gains and cost efficiencies – all key arguments to further embrace modern software engineering techniques in support of the wider business and its digital ambitions. So what is holding many organizations back?

**Challenges to MSE adoption**

In-house challenges to MSE adoption align with the wider challenges experienced in modernization projects, from a business case and an IT perspective. Seven in ten (70%) respondents' organizations struggle to find the investment they require to create a modern software engineering platform and many admit that a lack of skills are available, both in terms of DevOps delivery (66%) and in agile development (55%). All of which raises the question as to what can organizations do to progress and gain access to the potential value in using these techniques. For most, the answer lies outside their organization.

**Service provider support**

Among those using or planning to use MSE techniques, only the minority (34%-49%) have or plan to soldier on entirely in-house to implement them. The majority are open to the use of service provider expertise with some of the most prevalent areas being within DevOps automation, a key skills gap for many. Around six in ten or more will use a service provider to some extent for test and QA automation (66%) and continuous delivery (65%). In addition, and supporting plans for greater cloud deployment, a similar number will do so as part of their cloud-first approach (65%). Driven by a desire to harness MSE benefits and an acceptance of their current limitations, organizations are embracing the support that third-party experts can provide.

**2. The path to process automation**

**Process automation,** a type of modernized IT, involves the application of technology to configure computer software to capture and interpret existing applications for processing a transaction, manipulating data, triggering responses and communicating with other digital systems or end users. For this research, we consider three types:

- **Robotic process automation:** used to automate repetitive tasks and eliminate manual effort
- **Intelligent automation:** use data/patterns in the organization from the past to make recommendations/actions or offer predictions to provide the best future benefit
- **Cognitive automation:** self-learning systems that use data mining, pattern recognition and natural learning language processing to mimic the way a human brain functions and solve problems without human assistance

Process automation deployment is growing, with both it and artificial intelligence (AI) set to completely disrupt the way businesses operate. Most respondents' organizations expect to deploy process automation within the next three years – over half report that the business expects IT to deploy robotic process (56%), intelligent (61%) or cognitive (59%) automation technologies in this timeframe. Although only the minority of respondents' organizations are already there (19%, 22% and 18%, respectively), this common consensus when it comes to the need to deploy is driven by a number of important benefits.
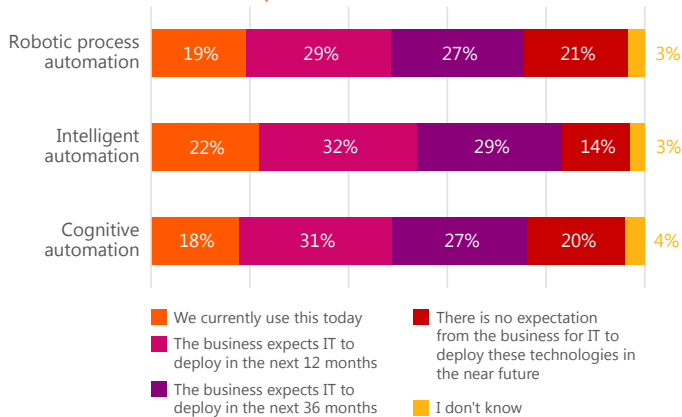
## Process automation adoption

| | | | | |
|---|---|---|---|---|
| Robotic process automation | 19% | 29% | 27% | 21% | 3% |
| Intelligent automation | 22% | 32% | 29% | 14% | 3% |
| Cognitive automation | 18% | 31% | 27% | 20% | 4% |

■ We currently use this today
■ The business expects IT to deploy in the next 12 months
■ The business expects IT to deploy in the next 36 months
■ There is no expectation from the business for IT to deploy these technologies in the near future
■ I don't know

*Figure 10: "Which of the above process automation technologies do you face expectation from the business to deploy in your organization?"; all respondents (800)*

### Drivers to deployment

Interestingly, the drivers to deploy again mirror the business ROI benefits expected from IT modernization. Increasing productivity (73%) and reducing costs (65%) are the stand-out reasons for organizations to currently or plan to use process automation. Looking wider still, many also believe that it can lead to improvements in customer satisfaction (50%) and help to differentiate the business against competitors (41%). As we've noted, however, only the minority are already using such technology, so what's stopping everyone else?

### Adoption concerns

Security (62%), perhaps unsurprisingly for any AI-led technology, is the key concern that respondents report about using process automation. But looking beyond that uncovers a range of other hurdles, many of which we have already observed as challenges elsewhere. Around four in ten face a lack of resources to create the systems such technologies will run on (44%) and a similar proportion admit they have a lack of in-house skills (37%).

### Embracing external help

In spite of the concerns, however, the vast majority (92%) agree that process automation is a key technology to address the emerging requirements of the digital business – sitting alongside modern software engineering as a vital tenet of an IT modernization approach. Given this perceived importance, most respondents' organizations will look to service providers for support with implementation, in the same manner as for MSE. Just over half (51%) will do so for robotic process automation, while even more still will rely upon third parties for the added complexities of intelligent (63%) and cognitive (64%) automation.

It is an encouraging sign that most senior IT decision makers acknowledge their organization's capability gaps and are striving to improve in order to achieve their end goals. For organizations that are struggling, the message is clear and reassuring: Don't worry, you're not alone.

### Further insights

- **By country:** U.S. and Brazil are the most likely to believe that modern software engineering and process automation are critical to addressing emerging digital business requirements.
- **By size:** Organizations of 501 to 1,000 employees (96%) are slightly more likely to believe that process automation is a key technology than those of more than 5,000 employees (90%).
- **By sector:** Consumer services is the least likely sector to believe that process automation is a key technology for addressing emerging digital business requirements (83%).

# For those not there yet – don't worry, you are not alone

## Technology capability gaps

As we have already touched upon, most respondents' organizations have the majority of their technology based on legacy and conventional platforms (67% on average). Only 33% of technology is classed as modernized. With the capability gaps that most believe are present in their current systems, the desire from senior IT decision makers to modernize is clear, backed up by the use of third-party expertise. But what do organizations look for in such providers in order to best support them on their transformational journeys?

## The search for modernization support

First, the majority of respondents look for proven abilities in modern software engineering techniques such as DevOps and agile (84%). As we've already seen, many face skills gaps in these areas so the need for a vendor to fill those holes makes perfect sense. Second is a need for a vendor to have experience in cloud migration (81%), again completely understandable given most organizations' plans to further augment their use of cloud, as part of a hybrid approach. Supporting this further is a third required element – experience in modernizing or building apps on the cloud using PaaS (75%), a modernized platform in which most organizations expect a surge in use over the coming years. Through the use of third-party expertise, organizations can aim to augment what they're already trying to do, explore new avenues and push the valuable case for IT modernization to the wider business.

### Key requirements of a modernization service provider
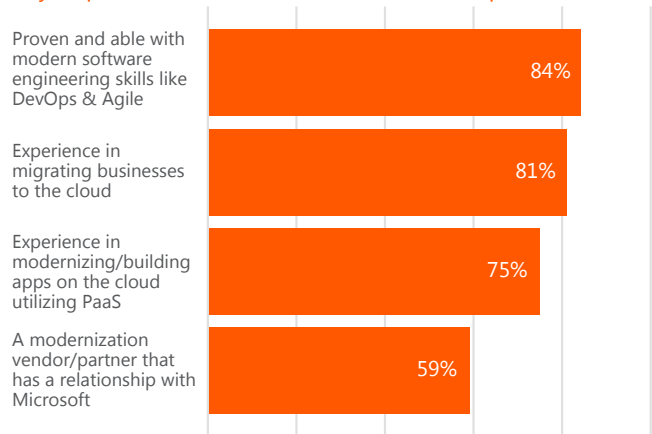


*Figure 11: "How important are the above elements when it comes to vendors that your organization works with on modernization projects?"; combination of responses ranked first, second and third; all respondents (800)*

### Further insights

- **By country:** U.K. (41%) and Canada (42%) are most likely to report a lack of in-house skills as a concern for using process automation technology. U.S. (75%) and Brazil (76%) are most likely to report security as a concern.
- **By size:** Organizations of 500 1,000 employees are more likely to report lack of in-house skills as a concern for using process automation; those with more than 5,000 employees are more likely to face change management (50%) or governance (35%) hurdles.
- **By sector:** Energy, oil/gas and utilities is most likely to look for a vendor that is proven and able with modern software engineering techniques (93%), financial services is most likely to look for one with experience in cloud migration (87%).

# Conclusion

**IT modernization: critical for digital transformation**
This study reveals that senior IT decision makers see huge benefit in modernizing their IT systems and approaches, both in terms of growing revenue and reducing the cost of business operations. They also predict a negative impact to the long-term growth of those organizations that don't modernize their IT systems and approaches.

Senior IT decision makers highlight three dimensions that prevent them from realizing these benefits:
• The IT systems and approaches they use today are not fit for purpose for solving the emerging requirements of the digital business.
• There is disconnect revolving around demonstrating the business case required to fund major modernization initiatives, and the business' ability to appreciate the potential return from these initiatives.
• The need to take a cloud-first approach is clear, so it's no longer a "why" question around cloud or even a "when," (it's happening), it's more the "how" in what clearly is becoming a hybrid world.

At the same time, the need to find the skills and experience not only to make the most of the technologies, but also the approaches to use them, has made senior IT decision makers realize they need to look outside their own organization.

**Conventional IT systems and approaches are not fit for purpose**
Senior IT decision makers realize that not only are legacy systems not up to the job, but importantly their conventional IT systems, the typical systems and approaches in use today, are not capable of meeting the emerging needs of the digital business. The vast majority of senior IT decision makers realize both the predictable and exploratory approaches to IT are required to drive and empower digital transformation to meet the expectations of the digital business. And both require new technologies and approaches like process automation and modern software engineering.

**A strong business case is required. IT ROI alone isn't enough**
The overwhelming majority of senior IT decision maker realize that the return the IT organization will get from a comprehensive modernization project, whilst significant, will simply not be enough to cover the cost of the investment. They recognize that the true return on investment of an IT modernization comes in empowering the digital business. However, senior IT decision makers don't think their executives appreciate the potential ROI of complex modernization projects, and given that these business executives increasingly hold IT budget themselves, this is clearly a major issue that needs to be addressed.

**A cloud-first approach is clear … for a hybrid world**
The journey to the cloud is happening. Senior IT decision makers know they need to consume more services from the cloud that do not differentiate their business rather than building them. They are starting to realize the benefits of modernizing their custom business applications to be cloud-first, using PaaS, rather than just migrating them (with a lift-and-shift mentality) to IaaS. But what's also clear is that a wholesale move of custom business applications to the public cloud isn't happening any time soon, with a proportion still running on-premises or in a hosted data center, even if that proportion is in steady decline.

It looks like a combination of factors are influencing this. From a business perspective, not being able to justify the business case has already been shown not to be a reason. From an IT perspective, security of cloud technologies is called out as challenge to IT modernization projects, with security and operational risk the top reasons for not using PaaS. It seems even with the major public cloud providers investing billions on cloud security, more still needs to be done to convince senior IT decision makers in this area. Also of significance is that nearly a third of senior IT decision makers surveyed are unclear about the value of PaaS. Whilst outside the scope of this research, it should be noted that our survey was completed between December 2016 and February 2017, not the most politically stable period in recent history for many of the countries involved.

# Recommendations

Whatever the reason, what is clear is that senior IT decision makers have a strategy. To support this hybrid world, the vast majority agree that their organization is planning to implement vendor-provided cloud stacks (such as Microsoft Azure Stack) to integrate their on-premises data center with the public cloud.

**Making it happen**
Despite the benefits, senior IT decision makers are struggling to make major modernization projects happen. They recognize they need help, and interest in partner support is high. The key elements desired in a partner being a proven ability with modern software engineering practices and experience in cloud migration. Clearly help is also needed to create the business case for transformational IT modernization projects. The net of all of this is that IT modernization is viewed as essential to digital transformation, and the businesses that get it right will lead the way through the digital revolution.

It's not that IT modernization alone will directly enable the benefits highlighted by this research. IT modernization clearly isn't a business goal. But what is clear is that if organizations don't modernize their IT systems – and just as importantly the IT approaches used alongside these systems – they will not be able to address the emerging needs of the digital business. The digital business will need IT systems and approaches that can, for example, handle a multi-channel digital world that must receive, interpret and interact with data from wearables, IoT and AI (think Microsoft's Cortana or Amazon's Alexa).

**Make a clear business case for IT modernization**
This research has clearly highlighted that senior IT leaders have to deliver a business case for the investment required for comprehensive IT modernization that convinces their executives the business ROI is a given. Senior IT leaders need to think beyond the impact of the IT department to show how modernization can increase business productivity, empower faster time to market and drive business growth. It will be important to find executive champions who "get it" and can validate the qualitative benefits of modernization, supported by business-focused KPIs as well as independently validated ROI tools and methodologies that can demonstrate quantifiable business benefits from modernization projects.

**Modernize to empower two distinct approaches to IT**
A truly modernized organization is one where IT is optimized to deliver value in a way that can be predicted whilst at the same time delivering innovation through exploration. Both the predictable and the exploratory are required to drive and empower digital transformation to meet the expectations of the digital business, and both require new technologies and approaches. This includes modern ways of approaching software engineering, with agile and DevOps recognized as prerequisites. Similarly, new process automation technologies like robotics process automation, predictive analytics and machine learning will be needed to take business productivity and cost reduction to the next level.

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# Scope of research and methodology

**Invest in a cloud strategy that works for your business**
The journey to the cloud is happening, but it will be a hybrid mix for the foreseeable future. The cloud strategy that works for your organization will be impacted by your existing IT systems, your people, the business itself; what it does, where it operates, what its customers look like and your organization's business strategy. It begs the questions: What will you consume from the cloud and what will you create with the cloud?

It is important to have an integrated cloud strategy aligned with your organization's specific business goals to effectively capitalize on your IT modernization approach

**Look for the right partner**
With the need to modernize both IT systems and approaches, investment in your own people will be required. But it doesn't make sense to do it all in-house; there's just too much to be done and time isn't on your side. Choose a partner that not only understands the need for modernization, but one that also has deep technical expertise in the areas you need, backed up with business and industry understanding, and the tools and methodologies to be your partner on this journey.

For more information, visit
https://www.avanade.com/thinking/new-economics-of-it

Avanade commissioned independent technology market research specialist Vanson Bourne to undertake the research on which this report is based. 800 senior IT decision makers were interviewed in December 2016 to February 2017. All came from organizations with $500 million or greater annual revenue, 500 or more employees and based in a range of private sectors.

The research was conducted in eight countries, with interviews split accordingly:

| Country | Number of interviews |
|---------|---------------------|
| U.S. | 200 |
| U.K. | 100 |
| Germany | 100 |
| Italy | 100 |
| Brazil | 100 |
| Australia | 100 |
| Canada | 50 |
| Japan | 50 |

The majority of interviews were conducted using a mixture of online and telephone interviewing. All were undertaken using a rigorous multi-level screening process to ensure that only suitable candidates were given the opportunity to participate. Unless otherwise indicated, the results discussed are based on the total sample.

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