
THE DATA ECONOMY REPORT:
2017 EDITION
EVOLUTION
INDUSTRY INSIGHTS TO BALANCE
INFRASTRUCTURE AND APPLICATIONS
FOR DIGITAL BUSINESS
Insight Avenue

[01] - [09]

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Insight Avenue

[01]

EXECUTIVE SUMMARY

The power of digital transformation and data intelligence is touching all aspects of our lives today. From web search to voice recognition to self-driving cars, it's all around us. For organizations, the shift to digital is more disruptive and the stakes far higher. Digital transformation has been high on the executive agenda for a few years and, for many, harnessing insights from big data has become a significant force for revenue creation and accelerating innovation.

Agility has emerged as an organizational superpower as businesses grapple with change and uncertainty in their own customer bases and in the global political and economic landscape. IT has been thrust into the spotlight as the unwitting hero of the story – tasked with delivering on the digital vision, implementing all manner of applications and building firm infrastructure foundations to support the latest digital initiatives. In an increasingly on-demand world, it is this final point that often gets overlooked in the rush for the next shiny new technologies. EVOLUTION 2017 Data Economy Report is a large, global study measuring the digital state of today's businesses and how well they are putting their data to work to drive innovation. The report also acts as a 2017 benchmark for organizations accelerating into the "Cloud Era" and gauging where they are in balancing infrastructure and applications in their business and how this is set to evolve as we approach 2020.

More than 9,000 IT leaders across twenty-four countries spanning three key regions - North America (NAM), Asia Pac (APJ) and EMEA / Russia - contributed to EVOLUTION 2017 and this report summarizes the key findings across all geographies.

THE DIGITAL GOLD RUSH

KEY FACTORS DRIVING DIGITAL SOLUTION ADOPTIONS

53%
QUICK INNOVATION

51%
COST SAVINGS GENERATION

49%
RESPONSE TO CUSTOMER DEMAND

47%
BUSINESS MODEL CREATION

Digital transformation is underway – data is both the driver and barrier to progress as legacy storage infrastructures and technical complexity are the "bottlenecks", slowing the digital transformation.

Digital solutions are typically driving around half of revenue (47% on average) for organizations whether this be through customer facing applications or more back-office functionality.

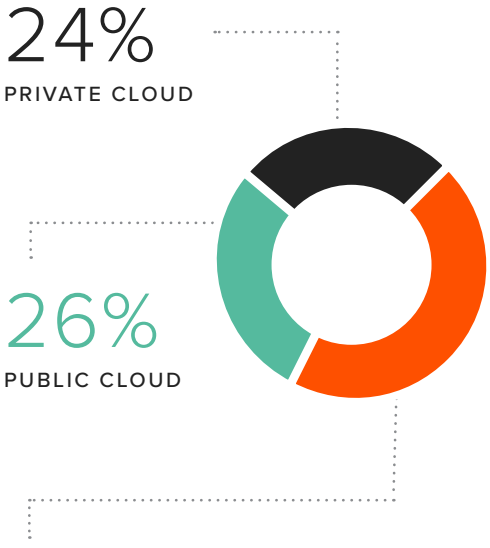
The most used digital solutions are platforms for internal communications (75%), the management of customer records / purchase history (72%) and customer support (69%). There is lower but still significant usage of emerging technologies such as real time analytics (38%) and IoT (36%).

Four key factors are driving the adoption of digital solutions – the need to innovate quickly (53%), to generate cost savings for the business (51%), in response to customer demand (49%) and to create new business models (47%).

Technical complexity and a reliance on IT to deliver the strategy are key barriers to converting to digital solutions and fundamentals such as storage are slowing down digital transformation progress and seen as an after-thought in the rush to innovate and bring new solutions to market.

THE GREAT WORKLOAD DILEMMA

HOW ARE BUSINESSES RUNNING THEIR APPLICATIONS?



There is momentum in public cloud, private cloud, SaaS and, to a lesser degree, on-premise. All have their place, but organizations seem unsure of which workloads to put where.

On average, businesses are running 41% of applications with traditional, on-premise IT – higher than both public cloud (26%) and private cloud (24%).

Public cloud looks set to grow in the next 18-24 months (61% say their use will increase). Alongside this, 52% see private cloud increasing and 35% see their use of traditional on-premise growing.

Businesses run around one in five applications via SaaS currently (22%) and more than half (51%) see their use of SaaS increasing over the next 18-24 months.

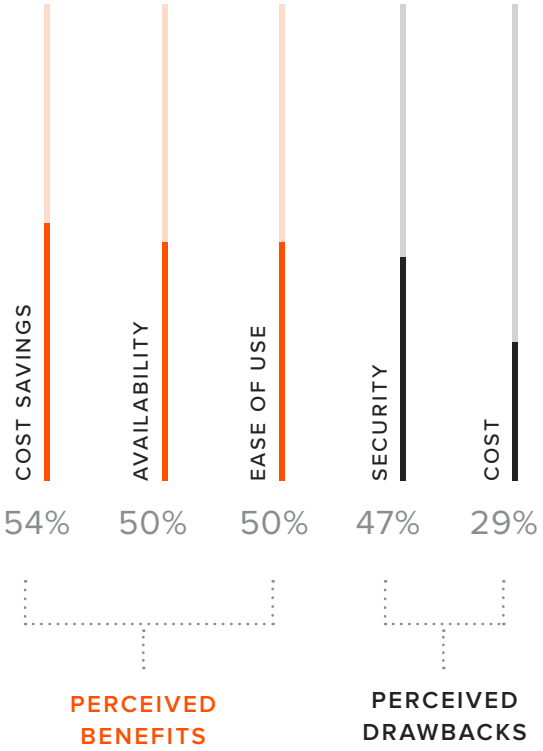
Similar patterns of use are in place for storage – an average of 39% is run on traditional on-premise, with less on public cloud (26%) or private cloud (24%).

Again, public cloud storage is tipped to increase in 56% of businesses, with private cloud (50%) and SaaS (47%) also showing momentum in an 18-24 month timeframe. 35% see increases in traditional on-premise storage in this timeframe.

Digital doesn't necessarily equal cloud adoption with more digitally focused organizations using on-premise to a similar extent as their less digitally focused counterparts. Workloads are highly varied and fragmented across different environments suggesting organizations still lack confidence in what to put where.

CLOUD - MIGRATIONS & MISTAKES

PERCEIVED BENEFITS AND DRAWBACKS OF MOVING TOWARD PUBLIC CLOUD



Significant initial moves to public cloud are accompanied by high levels of repatriation of workloads back on-premise. Workload mobility is key but so is a thoughtful workload strategy so IT time can be spent on higher value activities.

There is evident momentum towards public cloud with the biggest benefits seen to be cost savings (54%), availability (50%) and ease of use (50%). While security emerges as the biggest perceived drawback of public cloud (47%), cost then follows as a drawback (29%) suggesting that the costs associated with public cloud are not as clear-cut or compelling as customers may initially think.

Indeed, a significant number of companies have moved workloads to public cloud only to move them back on-premise (40% of businesses in North America and APJ (Asia Pacific / Japan) have done so). In EMEA, 65% say they have reduced use of public cloud in the last 12 months because of security concerns.

As data volumes increase, are businesses in a cycle of lure and regret as cost savings repeatedly tempt them to public cloud only for these not to fully materialize or for security worries to put them off? Rather than seen as competing options, cloud and on-premise should complement each other and integration should be the focus in building an agile storage infrastructure.

DATA - TAKING BACK CONTROL

IN UNCERTAIN TIMES

67%

of EMEA businesses think data should be shown as an asset on the company balance sheet

76%

of companies in the UK have been impacted by Brexit in their ability to plan and invest in tech innovation

Data is where business potential and opportunity resides yet the political and regulatory landscape is creating uncertainty that organizations are struggling to navigate.

> **Data is so important to businesses today that 67% of EMEA businesses think it should be shown as an asset on the company balance sheet. Some businesses go as far as to say the data their company is more valuable than the people it employs.**
>
> With GDPR on the horizon in the EU, most businesses have not yet adjusted their data storage practices. Similarly, Brexit looms large for the UK but beyond the UK there are concerns around what this means in terms of data sovereignty, the protection of customer / sensitive company data and the need to invest in new data centers / technology infrastructure / personnel.
>
> **In the UK, three quarters of companies (76%) say Brexit has significantly impacted their ability to plan / invest in technology innovation.**

Compliance and regulatory uncertainty is likely to be felt globally as the UK, and potentially other countries seek to leave the EU and recent changes in political administration in the US, for example, adjust the regulatory requirements for organizations. Organizations, and IT leaders specifically, are dealing with high levels of ambiguity which make technology planning very difficult. This is likely to foster a wait-and-see approach to IT investment which could be counterproductive in the drive for innovation.

[01.5] EXECUTIVE SUMMARY

CONCLUSION

EVOLUTION 2017 reveals that after more than ten years of cloud, the market is confused about the optimal strategy and which workloads to put where. The regulatory landscape is heading into unknown waters creating a further challenge for enterprises. Digital solutions are driving revenue and with data underpinning innovation efforts, IT leaders have an unrivaled opportunity to ensure their data storage is an informed, future-fit choice rather than a rushed compromise.

[02]

THE DIGITAL GOLDRUSH

FIGURE 1A

AVERAGE REVENUE FROM DIGITAL SOLUTIONS - BY SECTOR

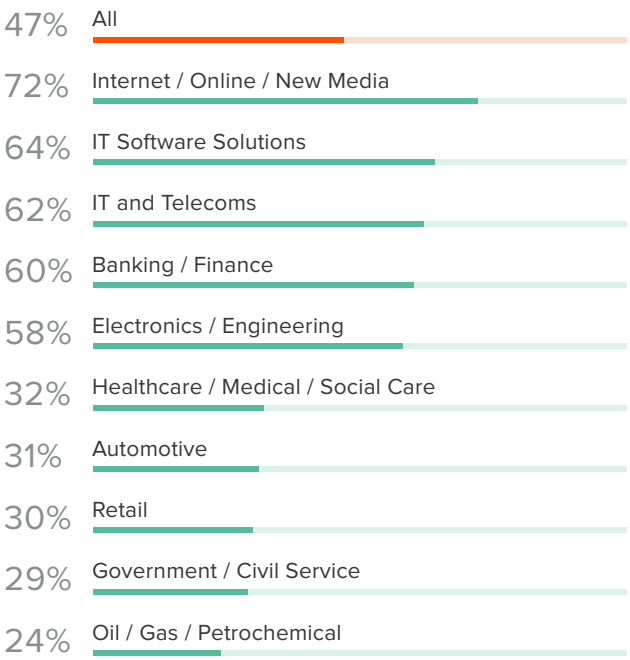
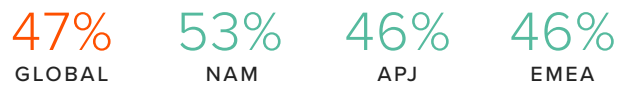


FIGURE 1B

AVERAGE REVENUE FROM DIGITAL SOLUTIONS - BY REGION



Technology is rapidly changing the way organizations operate and what it takes to thrive in a digital economy. One way of assessing where enterprises fall on a spectrum of digital maturity is to look at the proportion of revenue that can be attributed to digital technologies. **Figure 1a** shows that this sits at a global average of 47% - almost half of revenue in enterprises is now being driven through digital. This varies by industry sector with online and technology businesses highly dependent on digital for revenue and more traditional industries such as oil, gas and petrochemical, less but still significantly reliant on digital for a proportion of revenue. By region (as shown in **Figure 1b**), businesses in NAM (North America) are deriving more revenue on average from digital at 53% than EMEA or APJ, both at 46%.

While definitions of digital transformation vary and it looks different for every organization, there are three common threads in becoming truly digital:

Technology driven – taking advantage of digital technology across all areas of the organization.

Customer at the center - using technology to understand customer behavior and enable customers to seamlessly interact with organizations across digital channels.

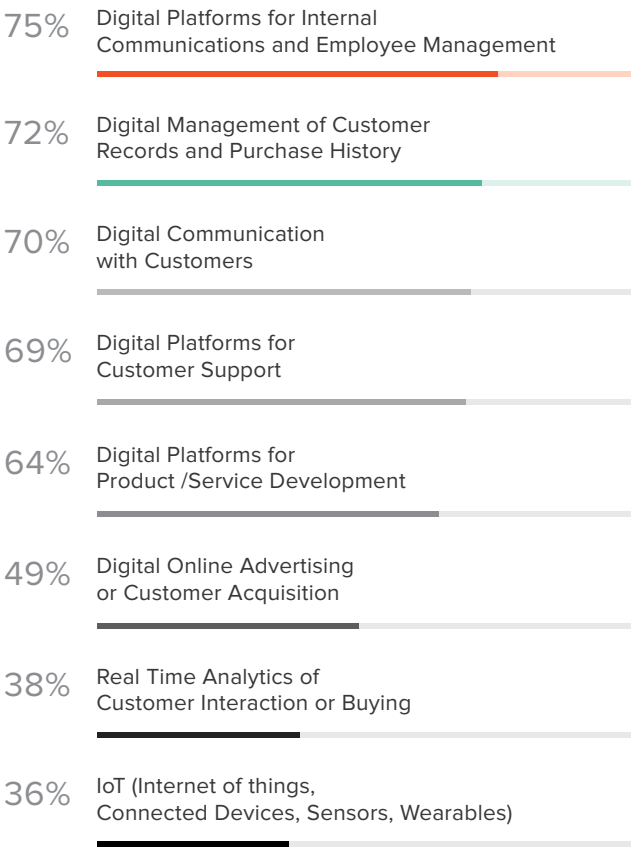
Momentum towards digital maturity – embracing digital technologies, processes and business models to optimize operations.

[02]

THE DIGITAL GOLDRUSH

FIGURE 2

CURRENT USE OF DIGITAL SOLUTIONS BY BUSINESSES



Digital solutions are already touching many parts of the business as shown in **Figure 2** with emerging areas such as IoT and real-time analytics areas showing traction in NAM in particular. Over time, the impact of digital on revenue is likely to increase as organizations further embed digital technology into their customer facing applications and back-office functionality.

Businesses have been transformed by the boom in applications and now typically rely on hundreds of applications to carry out day-to-day operations. In turn, the demand for data has increased with business users often wanting applications constantly available across multiple devices and there is evidence of an appetite for real-time analytics and interactive simulations in EMEA where 70% say there is more demand in the business now than 12 months ago.

[03]

DATA & DIGITAL TRANSFORMATION

FIGURE 3

PRIMARY DRIVERS FOR CONVERTING TO DIGITAL SOLUTIONS

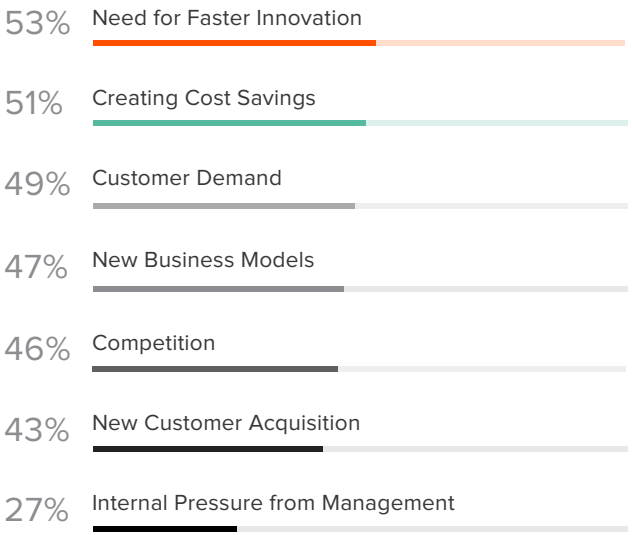


FIGURE 4

BIGGEST BARRIERS TO CONVERTING TO DIGITAL SOLUTIONS

1. Technical Complexity / Issues
2. Reliance On IT To Deliver Strategy
3. Lack Of Digital Skills
4. Competing Priorities
5. Lack Of Digital Leadership / Ownership

Just as on-demand dominates our lives outside work, speed and agility are key requirements in business today – so much so that yesterday's big data has become today's fast data. **Figure 3** shows four key factors driving the adoption of digital solutions in enterprises - the need to innovate quickly (53%), to generate cost savings for the business (51%), to respond to customer demand (49%) and to create new business models (47%).

These are all big, disruptive issues central to staying competitive, relevant and able to effectively meet customer needs. They represent an unenviable task for IT leaders – at the very least, demanding flexibility, risk-taking and a long- term investment of time and resources. Easier said than done as the key barriers enterprises are facing in converting to digital show (see **Figure 4**). Technical complexity includes everything from performance issues and upgrades to the integration of legacy and new systems and is a major stumbling block for organizations looking to embrace digital solutions. Add to this a reliance on IT to deliver the strategy and a lack of digital skills and digital leadership and it becomes clear that digital transformation is a steep hill to climb. These point to the need for a holistic approach to digital, recognizing early on that the very foundation of a truly digital organization is data.

[03]

DATA & DIGITAL TRANSFORMATION

In data lies the potential for competitive differentiation and innovation. It is about having access to lots of it, knowing how to manage it, keeping it safe, analyzing it quickly and then mining the highest value insights to drive the business to bigger and better things. More than two thirds of companies in EMEA (69%), for example, state they are committed to becoming information based companies. Data, however, can also be at the root of agility challenges, skills deficits, infrastructure sprawl and security concerns. Organizations are focused on innovating fast but digital transformation progress is being slowed down by storage issues (64% of companies in EMEA say this is the case). Furthermore, 62% of companies in EMEA say that storage is often an after-thought in the rush to innovate and bring new solutions to market. Data, and how it is managed and stored, can either fuel transformation and innovation or impede digital progress and growth.

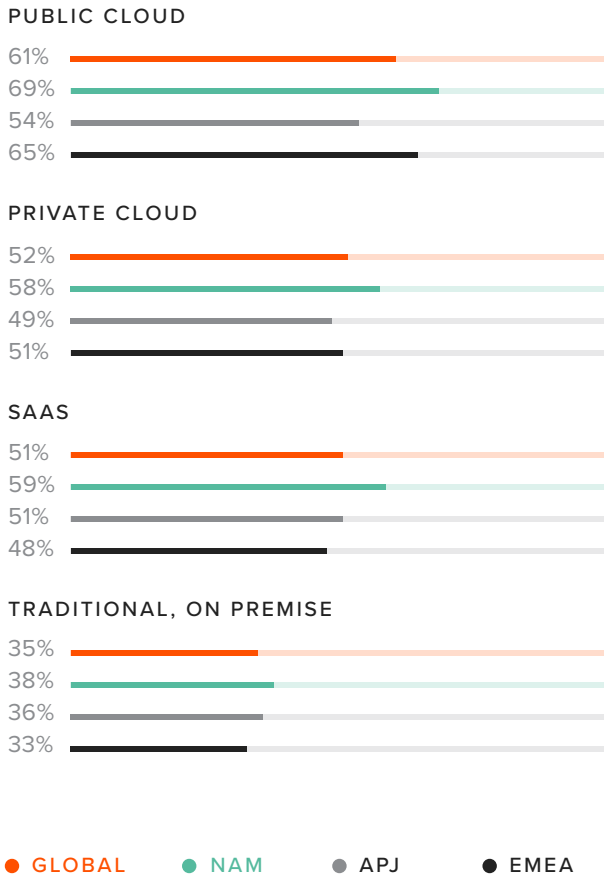
[04]

THE GREAT WORKLOAD DILEMMA

FIGURE 5

APPLICATION DEPLOYMENT

% expecting increase in use of different solutions to run applications in the next 18-24 months



Organizations now have unrivaled choice in how and where they run workloads. This creates opportunity for accelerating digital transformation as well as increasing technical complexity and uncertainty for companies as they grapple with the pros and cons of different solutions.

Today on average, 41% of applications are currently run on-premise – higher in EMEA than in other regions. Public cloud - whereby a service provider offers hosted services over the Internet to the public, e.g. Amazon Web Services (AWS), Microsoft Azure, Google Cloud Platform - accounts for an average of 26% of applications. Private cloud - whereby hosted services are created or provided by a third party, or internally, with dedicated, proprietary architecture for a single organization – represents an average of 24%. On average, 22% of applications are run on SaaS (Software-as-a-Service). In digitally focused businesses (those with more than 50% of revenue coming via digital), usage of traditional on-premise IT infrastructure for storage and running business applications is much the same as in less digitally focused businesses.

As shown in **Figure 5**, use of public cloud looks set to grow in the next 18-24 months (61% say their use will increase). Alongside this, 52% see private cloud increasing and 35% see their use of traditional on-premise growing. While traditional on-premise is least likely to be growing, 47% see usage levels staying the same with only 18% saying they see it decreasing.

[04]

THE GREAT WORKLOAD DILEMMA

FIGURE 6

WORKLOADS BY SOLUTION

Top Workloads Businesses are Running on Each Solution Currently

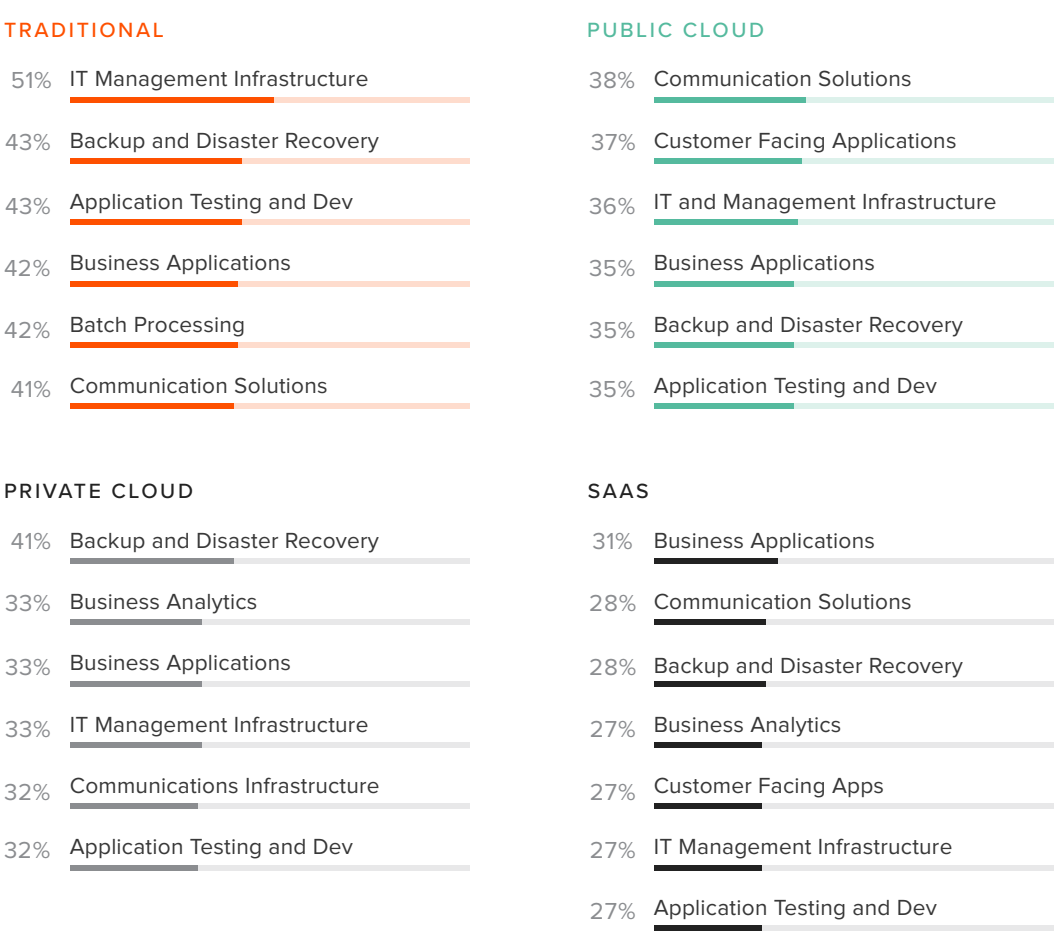


Figure 6 shows the top workloads organizations are currently running on each solution. There is a high degree of variation and fragmentation here which suggests there is still a lot of confusion around the most optimal solution for each workload. New workloads are constantly emerging and the ability of storage to handle huge data sets is driving innovation and creating workloads that didn't exist five years ago. Genomic sequencing is a good example of this. Not all workloads are designed the same and not all deployment models are built for the same purpose. As lines continue to blur between different models, the use of multi-cloud and hybrid cloud strategies grows and migration between clouds gets easier, it will be interesting to see how both established and emerging workloads are allocated and to explore the rationale behind these decisions.

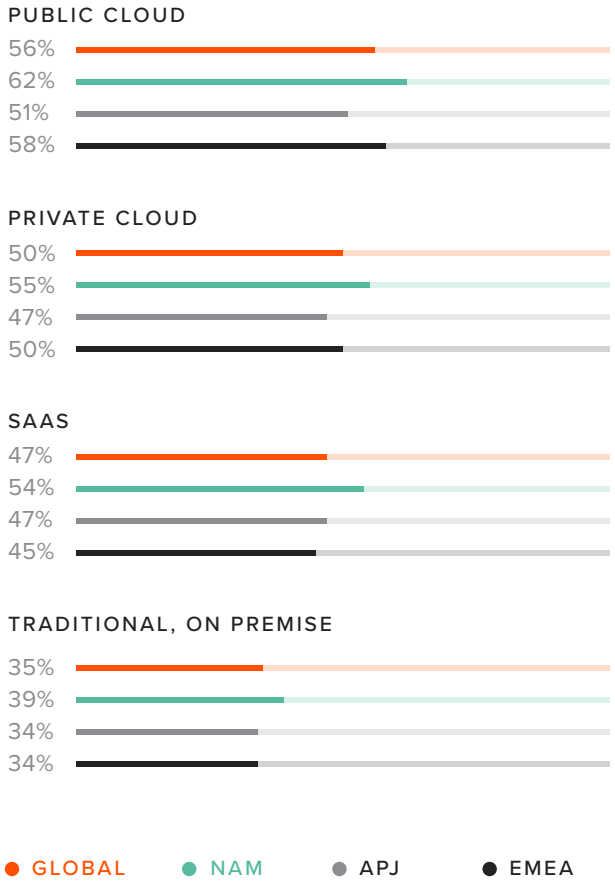
[05]

CLOUD - MIGRATIONS & MISTAKES

FIGURE 7

STORAGE SOLUTIONS

% expecting to increase in use of different solutions for storage in the next 18-24 months



Storage practices appear to echo where applications are run for the most part, suggesting that the two are still viewed as largely synchronous. On average, 39% of storage is currently run on traditional on-premise, with less on public cloud (26%) or private cloud (24%). Again, public cloud is tipped to increase in 56% of businesses with private cloud (50%) and SaaS (47%) also showing momentum in this 18-to-24-month timeframe. 35% of organizations expect to see increases in traditional on-premise storage during this time.

[05]

CLOUD - MIGRATIONS & MISTAKES

FIGURE 8A

PERCEIVED BENEFITS OF PUBLIC CLOUD

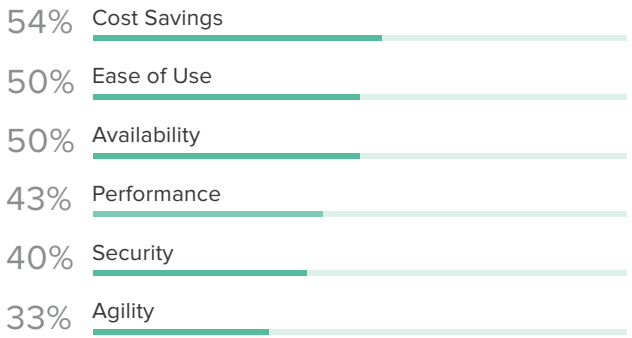
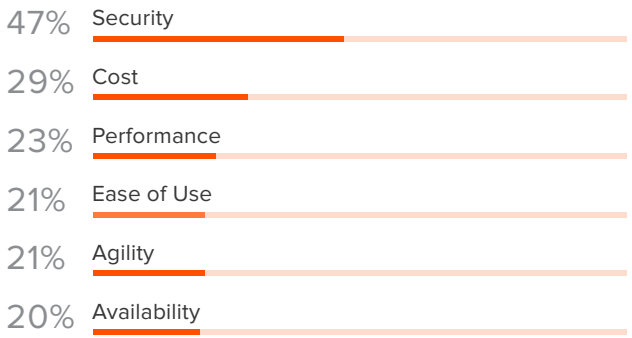


FIGURE 8B

PERCEIVED DRAWBACKS OF PUBLIC CLOUD



As shown in **Figures 8a and 8b**, a key benefit associated with public cloud is cost savings (54%). Ease of use (50%) and availability (50%) follow as close seconds. Security, across all markets, emerges as the most significant drawback of public cloud (47%). It is worth noting that this is followed by cost (29%) which suggests that public cloud cost savings may not be as clear-cut or compelling as customers might think and that while businesses may be looking to reduce capital expenditure by moving to the cloud, operational expenditure may end up being higher than expected.

In contrast, security is the biggest attraction of on-premise (49%), followed by availability (44%) and ease of use (43%) – which interestingly are also seen as key benefits associated with public cloud. Cost emerges as the main drawback associated with onpremise. 40% of businesses across NAM and APJ have, at some point, moved workloads to a public cloud solution and then needed to return it on-premise. In EMEA, two-thirds of businesses say they have reduced use of public cloud over the past year due to security concerns.

[05]

CLOUD - MIGRATIONS & MISTAKES

This raises the question around the relative weight of cost savings versus security concerns. Are organizations so motivated by the promise of cost savings that they are more tolerant of security issues? Are the promised cost savings simply not materializing in the way businesses expect? Moving workloads back and forth is not something to be undertaken lightly but appears to be happening as some organizations find themselves in a public cloud lure-regret-lure cycle. In the rush to innovate, adding applications and bolting on storage to support these may be proving counterproductive and businesses may fare better by slowing down and carefully evaluating different options to support their workloads. Hybrid and multi-cloud are viable options that make the cloud versus on-premise argument somewhat redundant.

Ultimately 72% of companies in EMEA consider that cloud and on-premise storage should complement rather than compete, something that in many cases will require a mindset shift and a re-evaluation of priorities.

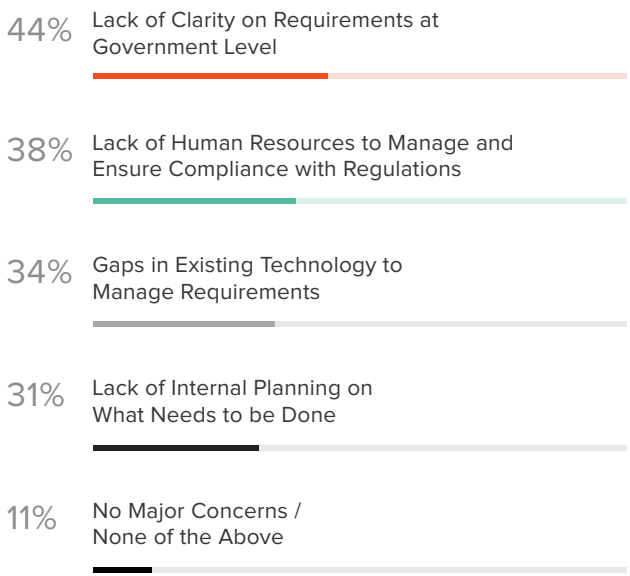
[06]

DATA & DIGITAL TRANSFORMATION

TAKING BACK CONTROL IN UNCERTAIN TIMES

FIGURE 9

CONCERNS AROUND GDPR FOR EU AND SWISS COMPANIES



Data both enables and drives digital transformation. In turn, digital transformation drives the production of more data, which in turn drives decision making, further accelerating digital transformation. Data is so important to organizations today that 67% of EMEA businesses, for example, think it should be shown as an asset on the company balance sheet. More than half of EMEA businesses too would go as far as to say the data their company holds is more valuable than the people it employs (59%). Controversial perhaps, but certainly indicative of the power and potential of data. Yet, data brings with it a host of challenges around how it is managed, collected, stored and used. 62% of businesses in EMEA state that unstructured data is putting pressure on storage. As IoT and smart devices become more widespread, unstructured data will flood organizations, potentially overwhelming existing storage solutions that were never designed to handle these kinds of emerging workloads.

Issues related to data and how it is stored are only set to get more uncertain as regulatory ambiguities circle on both sides of the Atlantic. With GDPR (General Data Protection Regulation) on the horizon in the EU in 2018, most businesses have not yet adjusted their data storage practices in line with this forthcoming regulation – 44% are currently reviewing and 18% haven't yet reviewed. Only 1 in 10 is ready for GDPR. In many cases, responsibility for GDPR resides with a technology head (52%) – another plate to spin for an already stretched CIO or CTO. 89% of organizations have concerns about GDPR – specifically on what is required at a Government level (44%), a lack of resources to manage and ensure compliance (38%), gaps in existing technology to manage requirements (34%) and a lack of internal planning on what needs to be done (31%).

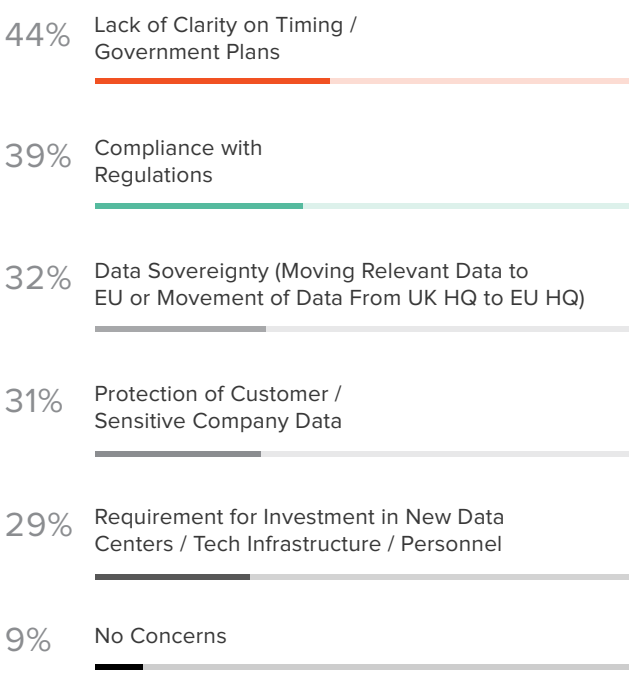
[06]

DATA & DIGITAL TRANSFORMATION

TAKING CONTROL IN UNCERTAIN TIMES

FIGURE 10

CONCERNS AROUND UK LEAVING EU AMONGST EU ORGANIZATIONS



Similarly, Brexit looms large for UK companies presenting concerns more widely for 91% of EU organizations. These concerns revolve around a lack of clarity on timing / Government plans (44%), compliance with regulations (39%) and data sovereignty (32%). No organization is an island and political and economic shifts both in the EU and in the US following the recent change in administration are likely to be creating ripples of regulatory uncertainty across businesses. Regulations around data inevitably have an impact on storage decisions and on wider technology investment and it seems that in the UK, for example, Brexit is significantly impacting the ability to plan and invest in technology innovation for three quarters of businesses (76%).

At a time when organizations are focused on innovating fast, stalling on technology investment is far from ideal. Stepping back to properly assess and understand the value of data to the organization and making storage decisions based on its value is useful first step for IT leaders looking to regain control.

[07]

MOVING FORWARD

Enterprise IT is undergoing a massive transformation and is under pressure to be innovative and deliver new applications and services at an accelerated rate. On top of this, regulatory and economic conditions are creating uncertainty and new responsibilities for already stretched IT resources.

Being data-driven is the new normal for organizations. Where there is data, so too there is a need for systems to store it, people to manage it and applications to make sense of it. Expanding digital footprints and data-intensive workloads from applications like big data analytics and IoT are forcing a reassessment of storage needs and driving the need for new technologies and business models.

Yet, technical complexity and cloud confusion reigns. Workload allocation is highly fragmented and businesses are moving these to the public cloud and back again. Customers are likely fatigued by media battles of public versus private cloud, debates about whether hybrid really is hybrid and whether cloud is better or worse than on-premise.

Organizations recognize that traditional storage deployments are creating a bottleneck in digital transformation, essentially slowing them down at a time when they want to speed up. Alongside this, innovations in the data storage market are challenging long held beliefs about what offers the best performance at the right cost. Public cloud momentum is significant, but IT leaders aren't keeping on-premise systems out of nostalgia – they still serve a purpose and in a modern data center, for some workloads, can prove a more cost-effective and superior performance option.

There will never be one answer that is right for every organization. The ideal scenario is one where solutions can co-exist and complement each other and customers have full choice across all delivery and consumption models. In doing so storage infrastructure becomes agile and future fit, driving the data advantage that organizations seek.

NOW THAT'S EVOLUTION.

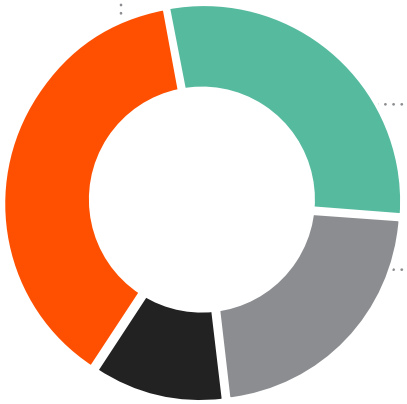
[08]

RESEARCH METHODOLOGY

SAMPLE BREAKDOWN BY INDUSTRY SECTOR

14%	Banking / Finance / Insurance / Accounting Services
13%	IT and Telecommunications
12%	IT Software Solutions
11%	Electronics / Engineering / Aeronautics
10%	Retail
7%	Healthcare / Medical / Social Care
6%	Government and Civil Service (National or Local)
4%	Oil / Gas / Petrochemicals
4%	Internet / New or Online Media
4%	Automotive
3%	Entertainment
2%	Pharmaceuticals / Nutraceuticals / Biotechnology
1%	Sports / Recreation / Fitness
1%	Gaming / Lotteries / Casino
8%	Other

SAMPLE BREAKDOWN BY COMPANY SIZE



38%
1,000 - 4,999

22%
5,000 +

29%
500 - 999

11%
100 - 499

[09]

CLOUD DEPLOYMENT MODELS

PUBLIC CLOUD

The cloud infrastructure is provisioned by the cloud provider for open use by the general public. It may be owned, managed, and operated by a business, academic, or government organization, or some combination of them.

PRIVATE CLOUD

Infrastructure typically provisioned solely for a single organization, whether managed internally or by a third-party and hosted internally or externally.

HYBRID CLOUD

A composition of two or more clouds (private, public, hosted) that remain unique entities but are bound together, offering the benefits of multiple deployment models. It can also be defined as multiple cloud systems that are connected in a way that allows programs and data to be moved easily from one deployment system to another.

Source: Based on National Institute of Standards and Technology (NIST) definitions.


ΞVOLUTION
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