



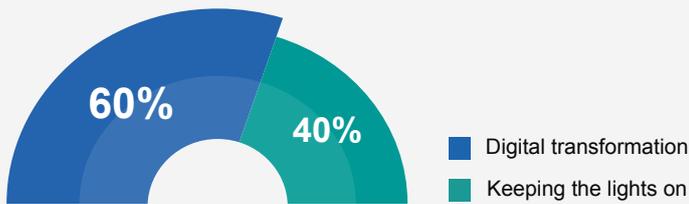
Networks Drive Digital Ambitions

Investment in digital transformation is being driven by cloud, security and network upgrades

Infographic Summary



IT budgets marginally higher for digital transformation



60 percent of current IT investment in the UK, Germany, France, the Netherlands and Belgium is focussed on digital transformation initiatives designed to support future business expansion and growth rather than keeping the lights on (maintaining applications and services).

Lower TCO is top transformation driver

A larger number of companies have identified digital transformation first and foremost as a way to reduce the cost of their IT service delivery. But half see it as a forward looking strategy that will help them expand the business through support for greater product/service innovation and improvements to the customer experience.

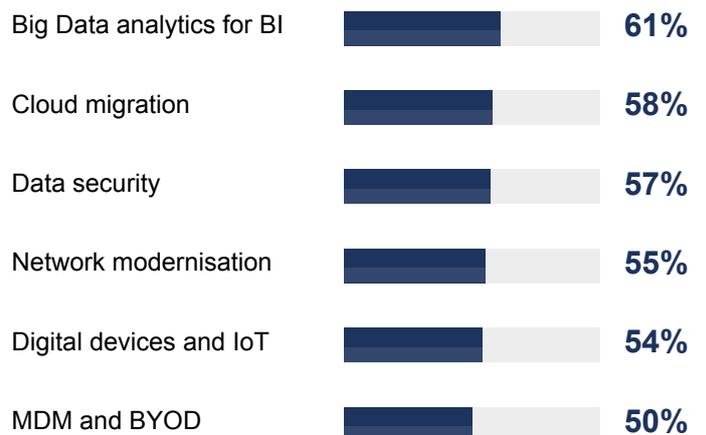
Top digital transformation drivers



Security, cloud, analytics, networks and mobility get investment

Digital transformation investment will span a broad range of technologies, spearheaded by Big Data analytics, cloud application and service migration, data security and network modernisation projects.

Primary areas of digital transformation investment over the next 18 months





Introduction

Change is the only constant in IT but the relentless drive to optimise application, infrastructure and service delivery presents a persistent dilemma for companies large and small. How much time and effort should be put into maintaining current systems rather than developing new ones and to what extent does the business risk missing commercial opportunities if it fails to fund technology innovation in the meantime?

Companies across Europe recognise the challenge and have at least begun to quantify the problem by separating their activities into support and maintenance versus digital transformation projects – those that change the way that they currently do things and open up new possibilities for application and service delivery which cannot be supported by existing systems architecture.

Finding the resources to support those changes is only half of the battle for the IT professionals trusted to shape those transformation strategies. They must also identify and implement the underlying technology platforms and service delivery models best placed to support their ambitions, often as a conduit to expanding business operations and establishing new customer bases and revenue streams.

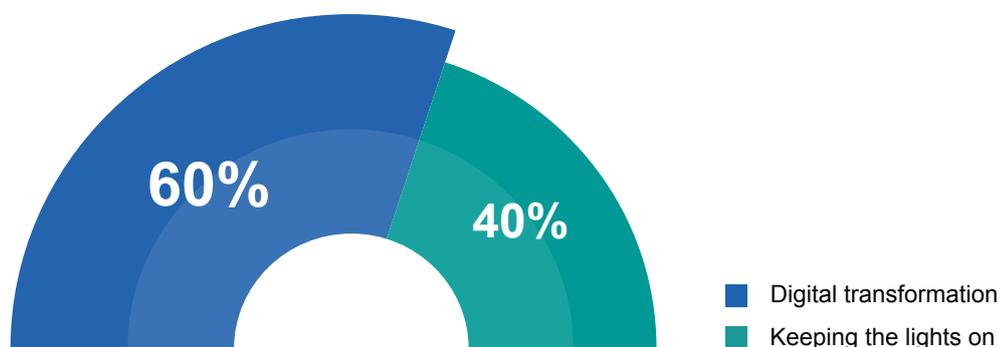
IDG Connect interviewed 274 senior staff working for organisations headquartered in the UK, Germany, France, the Netherlands and Belgium to assess their plans for digital transformation over the next two years, with attitudes to cloud migration, data security, network modernisation and mobility rollouts high on the agenda. The research was designed to reveal budget allocations, procurement and implementation strategies, technology upgrade expectations, drivers for change and challenges to project completion and success.

Those surveyed worked for companies ranging from small to medium enterprises (SMEs) to large corporates. The majority (57%) employ over 1,000 people, with a quarter (24%) employing 5,000 or more and nine percent in excess of 25,000 staff. All are multinationals running offices in more than one country. Half (51%) operate from between two and five locations, another quarter (27%) between five and 10, and 22 percent more than ten.

Respondents work in a range of vertical sectors, the biggest of which is software and computer services (22%), followed by financial services (8%), electronics and retail (both 7%). Almost a third (30%) are employed in board level positions including chief information officer (CIO), chief technology officer (CTO), chief security officer (CSO) and chief digital officer (CDO). The same number identified themselves as IT managers with a further 22 percent engaged as IT directors.

Digital Transformation

Investment balance between keeping the lights on and digital transformation



On average roughly 60 percent of current IT investment is focussed on digital transformation initiatives designed to support future business expansion and growth rather than keeping the lights on (maintaining applications and services).

This suggests that across organisations in the UK, Germany, France, the Netherlands and Belgium, current spending is weighted slightly more towards implementing new systems and architecture rather than just maintaining what they already have. Nevertheless, they recognise the need to move forward slowly and make the best use of their existing hardware/software assets during the transition.

Though the findings are fairly uniform across all five countries, primary job roles, and the size of the organisation in question, there are some minor variations which point to a slightly different perspective or emphasis.

IT managers see the balance of investment weighted to digital transformation as only 53 percent, for example, slightly below the 60 percent average.

This seems logical considering it is this job function more than any other which is likely to have a more practical focus closely related to daily tasks which may include hardware maintenance, running helpdesks and applying regular updates and patches to software. On the flip side, it also suggests that in-house IT staff may be too busy with routine operations to drive the business forward by fostering new application and service development, adoption and innovation.

It is also the larger companies employing more than 25,000 people which estimate their employers are slightly less focused on digital transformation (54%). This is perhaps because the scale and complexity of the legacy IT infrastructure to be maintained and supported within these organisations is much more onerous and time consuming, a situation which is also likely to handicap agility.

Over 70 percent of all respondents assigned more than 50 percentage points in favour of digital transformation investment indicating that a much smaller number may assess themselves to be heavily focussed on 'standing still'.

Primary Investment Areas

Primary areas of digital transformation investment over the next 18 months



Organisations across Western Europe expect to see multiple digital transformation initiatives receive funding over the next 18 months.

Most (61%) will put time and money into implementing Big Data analytics platforms that deliver better business intelligence outcomes, whether they be focused on improving internal operational efficiency by identifying areas ripe for improvement, or pinpointing new business opportunities in external markets.

Almost as many (58%) look set to migrate new or additional applications and services into public, private or hybrid cloud platforms as they reduce their reliance on legacy systems and embrace flexible, pay as you go delivery models that tie utilisation closer to investment and availability.

Implementing and maintaining effective data security systems and policies is an area of focus for 57 percent, with 55 percent expecting to upgrade and/or modernise their network platforms whether these be local (LAN) or wide area network (WAN) links or wireless infrastructure in office or campus environments.

The larger the company the more likely they are to invest in Big Data analytics however. This area of investment

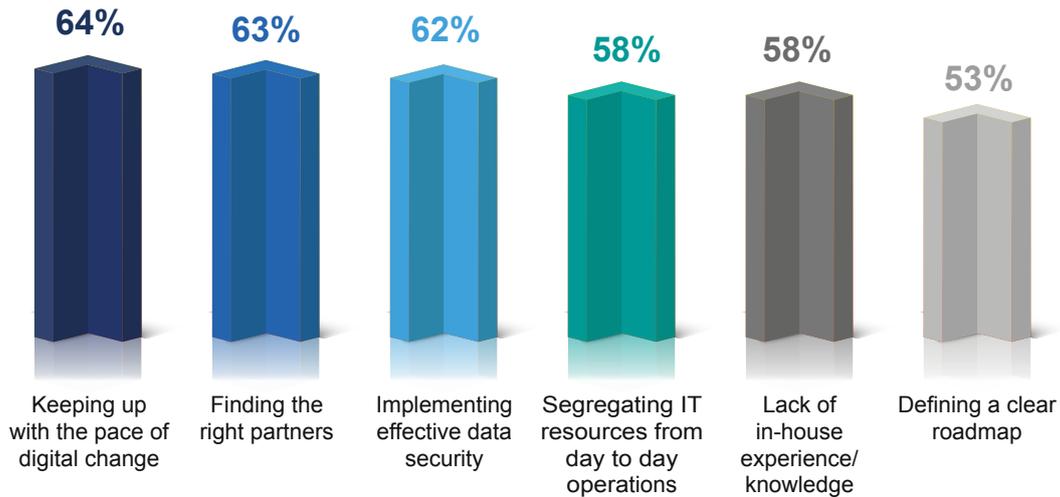
was highlighted by 73 percent of respondents working for companies employing 5,000 staff or more. At the other end of the spectrum, it is smaller businesses (those employing less than 500 people) that are least likely to be focussed on cloud service migration initiatives (41%), a number far higher amongst small to medium enterprises (67% - those employing between 1,000 and 5,000 people)

Half of those taking part in the survey cited mobile device management (MDM) in support of bring your own device (BYOD) initiatives as future areas of investment. This suggests that plans to allow more smartphones, tablets and other portable devices to be used for business purposes in the workplace are in place in many cases.

IT managers specifically (who it must be remembered make up almost a third of the survey base) are again slightly out of step with their colleagues on this point. A lower than average number (41%) judged MDM and BYOD initiatives to be a primary area of digital transformation investment, though the administration and security aspects of integrating with existing system and application access policies may be a significant factor in their appraisal.

Transformation Challenges

Primary challenges to digital transformation ambitions



As we have seen on page five, implementing and maintaining effective data security systems and policies is an area identified for digital transformation for the majority of the IT professionals taking part in the IDG Connect survey.

Yet this is a process which is also regarded as a big challenge to the successful completion of those digital transformation initiatives, highlighted as a potential stumbling block by 62 percent of the research base on aggregate.

This finding illustrates a consistent trend amongst companies embarking on upgrade projects involving cloud migration and BYOD in particular. Changes to their existing data security platforms, policies and processes are often simultaneously identified as both a driver and a barrier as organisations struggle to move from A to B in procuring and building requisite security platforms and ensuring compliance with governing regulation and legislation.

Those in Germany particularly (where federal and industry regulatory environment is particularly stringent) have a greater emphasis on data security than their counterparts in the UK, France, the Netherlands and Belgium.

C-level executives also worry about data security more than colleagues in other job roles. However smaller businesses employing less than 500 people (typically those less likely to be subject to compliance rules) see effective security implementations as less of an issue.

Nor is the implementation of effective data security systems, policies and architectures considered the only challenge. A roughly equal number (64%) of respondents reported that they struggle to keep up with the pace of digital change as technology innovation and IT service delivery models continue to evolve.

And 63% struggle to find the right partners (whether service providers, vendors, consultants, or systems integrators for example) to assist them in their digital transformation journey, two findings which again reflect the difficulties organisations often face in procuring and implementing the systems they need to effect meaningful change.

The challenge identified by the smallest number (53%) was defining a clear roadmap, suggesting that in many cases they know the path they want or have to, take but just aren't too sure of how best to do it.

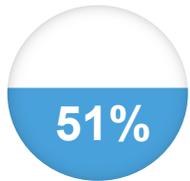
Investment Drivers

Investment drivers for digital transformation



Reduce the cost of IT service delivery by optimising legacy infrastructure

Most of the organisations surveyed across all five countries (57%) see digital transformation as a way to reduce the cost of current IT service delivery, which also suggests a tight focus on total cost of ownership (TCO) and return on investment (ROI).



Support greater product/service innovation

The absence of any significant variation in this finding according to the specific territory, company size or job role underlines the fact that this is a universal requirement for many. It also indicates that whilst organisations want to facilitate change they do not want to do so at any cost and will move forward only if they can prove that any new applications, systems and services they implement will offer better value over what they have already.



Need to improve customer experience and interaction

Half of those surveyed on aggregate see supporting greater product/service innovation and improving the customer experience and interaction as primary drivers for digital transformation investment, this is a strong sign that these elements are widely identified by respondents as sources of competitive differentiation in their respective markets, and are seen as routes to support the creation of new, or expansion of existing, revenue streams by delivering new products or services.



Address globalisation requirements

Compared to their colleagues, C-Level executives (49%) are less concerned about reducing the cost of IT service delivery and more focussed on fostering greater product and service innovation and improving the customer experience (57%). It is not unreasonable to assume that this group has a greater appreciation of the need to drive the organisation forwards on a strategic level to achieve long term business goals, and is therefore more focussed on transformation than others.



Streamline supply chain

While digital transformation initiatives are being driven by industry compliance guidelines and regulation in a minority of organisations (36%), that does not mean that data security initiatives are not getting attention as we shall see elsewhere in the research.

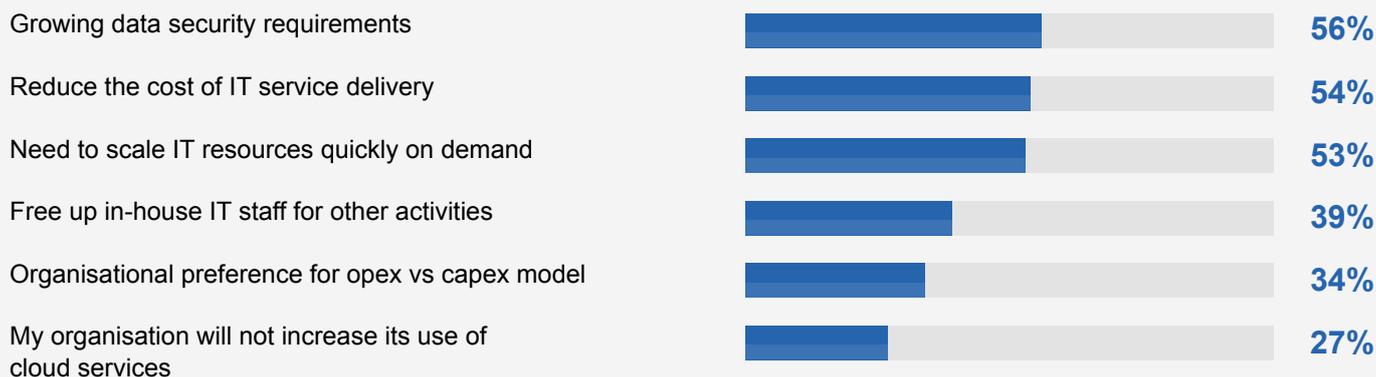


Meet government industry compliance guidelines and regulation

Drivers for Cloud Service Use



Drivers for increased cloud service use



The current aggregate usage of public and private clouds amongst organisations in the UK, Germany, France, the Netherlands and Belgium is weighted slightly towards private clouds (by a proportion of 46 to 54) that run virtualised workloads in their own, on-premise infrastructure or third party hosting environments based on dedicated rather than off-premise, shared resources.

That balance will shift further away from public clouds run by companies such as Amazon Web Services, Google or Microsoft over the next two years to a point where the volume of applications and services hosted in private clouds will outweigh those hosted in public clouds by a factor of almost 1 to 2 (37 to 63) on aggregate.

More companies in France specifically host a larger proportion of applications and services in public clouds today (55 to 45) but this will again shift more in favour of private clouds (41 to 59) by 2018.

Though they disagree on the precise definition and value of the market, multiple research companies including IDC predict that global investment in public cloud services will grow at a compound annual growth rate of 17-18% between now and 2018.

European companies are widely expected to make more use of software as a service (SaaS), infrastructure as a service (IaaS), platform as a service (PaaS) and business process as a service (BPaaS) propositions—either by leasing services for the first time or moving more on-premise applications and workloads into the public cloud for the first time.

A large majority of the respondents (73%) taking part in the IDG Connect survey expect that their organisations will migrate more applications and services onto some form of cloud platform over the next two years. Only 27 percent anticipate that they will not expand their current use of cloud services.

Growing data security requirements are partly behind the anticipated increase in cloud service usage. Over half (56%) of the organisations surveyed highlighted data security requirements as a driver, rising to 68 percent for those in the Netherlands and Belgium.

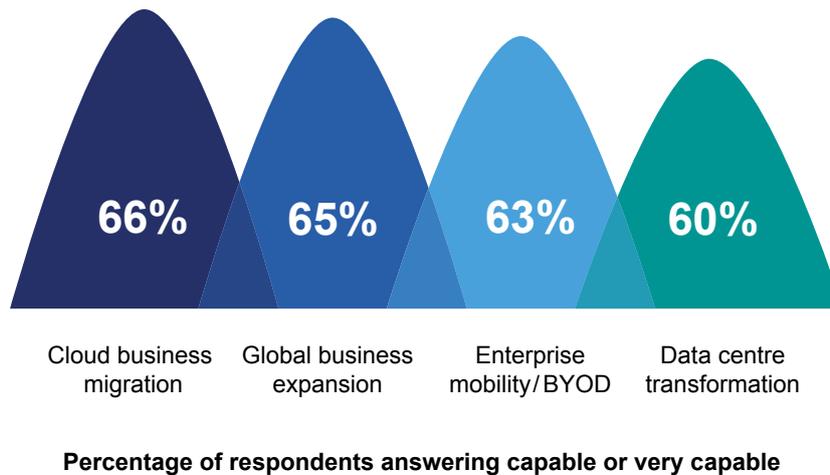
Though it is unclear which specific form of cloud (whether public, private or hybrid for example) is favoured by the IDG Connect respondents in this respect, it should be noted that public cloud providers including AWS, Microsoft and Google have launched enterprise focussed public cloud services with a strong emphasis on fulfilling corporate data security requirements in the last 12 months.

Many companies (54%) also see cloud migration as a way to reduce the cost of their IT service delivery. Almost as many are banking on it giving them the flexibility to scale available IT resources up or down quickly to accommodate rapid business growth, or fluctuations in demands caused by seasonal applications and services, short term development projects or regular processes such as monthly backups.

Network Infrastructure Capacity



Rated ability of current network infrastructures to support business needs



Percentage of respondents answering capable or very capable

All cloud services, whether public, private or hybrid need secure, reliable network bandwidth to function effectively. And strict latency, redundancy and service level agreement (SLA) requirements are exponentially more important when it comes to supporting mission critical enterprise applications and workloads that are sensitive to disruption and can result in significant loss of revenue during any downtime.

Yet a third of the organisations surveyed by IDG Connect (34%) expressed lukewarm levels of confidence in the ability of their company's network to support cloud application and service migration.

Networks were rated either capable or very capable of supporting that process by 66 percent of respondents, with similar numbers (63-65%) attributing the same level of competency in supporting global business expansion and enterprise mobility/BYOD initiatives.

The ratings were slightly lower for data centre transformation however (60%). On the one hand this may indicate a bigger problem for hosting facilities specifically where the LAN and server interconnect architecture is struggling to cope with the volume of virtualised traffic being carried.

But it may also be down to stronger awareness of localised problems due to greater visibility into the LAN, as opposed to the wide area network (WAN), due to better traffic monitoring capabilities.

Company size appears to play a part here as does the level of investment individual organisations have already made in LAN/WAN network architecture to date.

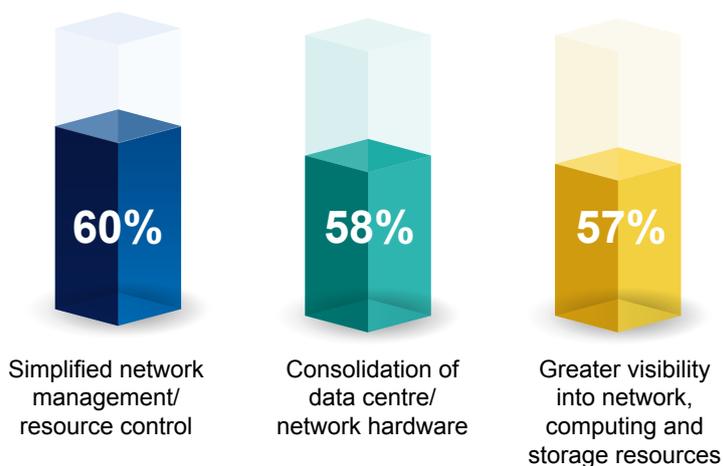
Only half of smaller companies (less than 500 employees) feel their network is well placed to support global business expansion. It may not be considered a high priority by these organisations in the first place, but there may also be a lack of available budget to fund network investment.

Conversely, 31% of those employing 25,000 people or more judged their networks very capable of supporting global business expansion, suggesting high levels of previous investment in tune with organisational spending power. Almost three quarters of the largest companies also appear happy with their network's ability to support data centre transformation (compared to just 54% of companies employing 500-999 employees).

SDN Benefits



Top three advantages associated with SDN deployments



Most organisations seem to be aware of software defined networking (SDN) and the potential benefits this technology approach can deliver when applied to their network and data centre architecture.

Foremost amongst these is simplified network management and resource control, indicating that many are not satisfied with current network provisioning, configuration and administration processes, especially where those functions are associated with cloud service delivery. Automated application and service provisioning through customer self-service portals is rated as an advantage by 53 percent alongside the ability to program network services with minimal hardware configuration (52%) for example.

Another 58% identify SDN as a route to the consolidation of existing data centre and network hardware, strongly suggesting that they may judge current architecture to be overly complex, expensive and out of date.

An almost equal number (57%) equate SDN with greater visibility into network, computing and storage resources which would allow their organisation to better match usage against demand and enable more accurate capacity planning in support of business expansion or specific application/service requirements.

Just over half again (56%) feel that SDN can be harnessed to enable easier testing and development of new application and services, whether these are commercial, customer facing propositions or built to serve the needs of the company's own user base. Existing test and development activity is often closely tied to in-house staff resources, with 55 percent identifying software defined platforms as a way to free up network engineers' time for other tasks.

Though the IT professionals surveyed by IDG Connect do appear to have a good appreciation of what SDN can do for their companies, current enterprise adoption is much harder to quantify. Research companies suggest new use SDN cases continue to emerge as start-ups, network equipment vendors and network service providers escalate customer deployments.

An estimate from IHS published earlier this year predicts that the global data centre and enterprise SDN market - including in-use for SDN Ethernet switches, SDN controllers, software-defined wide area network (SD-WAN) appliances and control and management - rose 82 percent in 2015 from the prior year to be worth \$1.4 billion.

Data Security Concerns



Loss of reputation and confidence is the biggest data security concern within organisations



When it comes to data security, what most organisations across all five countries fear is the damage to their brand and reputation which can come in the aftermath of a publicly disclosed security breach. This was highlighted as a concern by almost two thirds (64%) and is the single biggest source of worry for over a quarter (27%).

That damage is often measured in an acute shrinkage of customers and revenue as last year's Distributed Denial of Service (DDoS) attack and subsequent data breach involving UK broadband service provider TalkTalk demonstrated. TalkTalk estimated that the incident caused 101,000 subscribers to jump ship, resulting in a £15m trading impact and exceptional costs of up to £45m in the same financial quarter.

This is a particular concern for the largest companies, typically those that have the biggest reputations and revenue to lose. Such organisations are also subject to shareholder as well as regulatory scrutiny (the same is true for multinationals with the most number of offices across different countries).

Much of the £45m of exceptional costs listed by TalkTalk were attributed to the investments it was forced to make during the clean-up operations, another concern highlighted by 52 percent of the organisations on aggregate.

What is interesting is that on aggregate, fear of potential loss of reputation is more of a worry for a slightly higher number of companies than having insufficient defences to prevent such a breach in the first place or maintaining effective security provision. This perhaps reflects an increasing realisation that it is not possible to be completely protected against every type of malware attack, only better prepared to deal with its consequences when those attacks occur.

Slightly more organisations in the UK fear disruption to business operations, with those in France more likely to believe their data security infrastructure cannot prevent all attacks. Those in Germany are less concerned about compliance with industry and government data security regulation, probably more because they have already implemented effective measures to ensure compliance.

Change Factors

Factors likely to change the priority for data security



Multiple factors are likely to change current data security priorities in just over half of the organisations (52-58% on aggregate) surveyed by IDG Connect. However, the single biggest driver for change is the growing volume, diversity and sophistication of different malware attacks, which most companies know they will have to up their game to properly address.

Security vendor Symantec estimates that the number of new zero-day malware vulnerabilities discovered doubled to 54 in 2015 compared to the previous year, with the number of spear-phishing campaigns targeting companies employing over 2,500 employees growing 35%*. Kaspersky has predicted that malware attacks on mobile devices assisted by employees' bad personal security habits will proliferate in 2016, mostly targeted at Android smartphones and tablets and with increased incidents of ransomware.

Anxiety around the growing scale and diversity of the cyber threat landscape is particularly acute amongst larger companies. This is not surprising given that they typically have a bigger attack surface due to the higher numbers of staff they employ and the scale and complexity of the systems, applications and service architecture they need to secure as a result.

Just over half (52%) on aggregate also reported that any further expansion of their business operations to include more locations or headcount would alter their priorities for data security provision. Increased use of both mobile devices for business application access, and cloud services, were also identified as catalysts for change by 57 percent and 53 percent respectively.

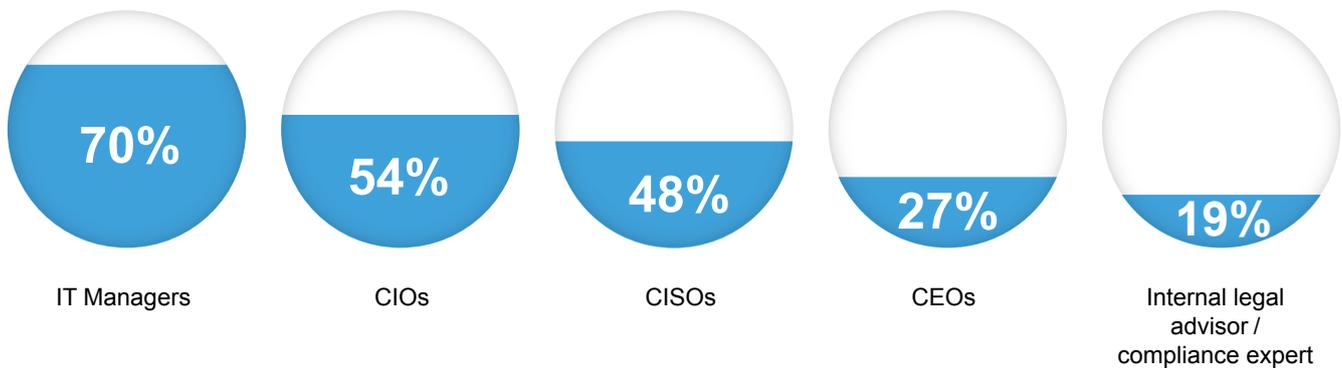
The factor least likely to alter current approaches is larger fines by the regulator, identified as a driver by 43 percent. This is despite forthcoming European Union (EU) General Data Protection Regulation (GDPR) which will give regulators the power to impose much larger fines than in the past - up to €20m, or 4% of a company's annual global turnover in the previous financial year.

GDPR compliance will become compulsory on May 25th 2018. It will apply not only to companies in EU countries, but also to those outside the EU which store or processing data that pertains to EU citizens on a 'large scale'. Irrespective of what form Britain's exit from the European Union finally takes, UK companies doing business in Europe will almost certainly still need to comply with either the terms of the GDPR itself, or whatever equivalent legislation the UK data protection authority imposes in its place.

* Internet Security Threat Report 2016, Symantec.

Data Security Budgets and Responsibility

Decision making involvement for security implementation and policy



Spending on data security specifically looks set to increase by 10 percent over the next two years as companies upgrade their current systems and policies to defend themselves against cyberattacks, minimise the risk of data loss and comply with existing and new data protection regulation.

Organisations in the UK, Germany, France, the Netherlands and Belgium report that they currently spend 45 percent of their total annual IT budget on data security today, with the proportion growing to 55 percent in two years' time.

The aggregate figure is skewed by higher levels of spending in the Netherlands and Belgium however. Organisations in these two countries specifically look set to invest 65 percent of their IT budget in 2018 on data security (compared to 51 percent for their counterparts in France and the UK).

This finding may point to greater anxiety around cyber security amongst Belgian and Dutch companies on the one hand, but it may also signify historically lower levels of investment in data security provision which organisations in those two countries will now hurry to rectify.

It is in-house IT managers who are most likely to take responsibility for procuring and implementing those security systems and policies. Almost three quarters (70%) of the organisations surveyed by IDG Connect on aggregate identified this job junction as the lead role here. IT managers are more likely to assume control of data security spending ahead of CIOs (54%), CISOs (48%), CEOs (27%) and internal legal advisors or compliance experts (19%). In many cases (and as the numbers attest) the responsibility will be shared across multiple job roles.

The IT manager is also more likely to take the lead in smaller companies employing 1,000 people or less (which inevitably may not have the budget or need to employ CIOs or CISOs) and also in organisations headquartered in the Netherlands and Belgium.

Conclusion

The research findings paint a detailed picture of the drivers and expectations for digital transformation amongst organisations headquartered in the UK, Germany, France, the Netherlands and Belgium. Roughly 60 percent of their current IT investment is focussed on transformation initiatives designed to support future business expansion and growth rather than keeping the lights on whilst multiple transformation projects will be funded over the next 18 months, led by Big Data analytics implementations, cloud application and service migration, data security upgrades and network modernisation schemes.

Current usage of public and private clouds across organisations in all five countries is mixed. But the next two years will see the balance shift slightly in favour of private clouds which host applications and services within organisations' on-premise infrastructure or dedicated third party data centres. Many enterprises are also adopting hybrid cloud strategies that combine elements of private and public cloud platforms to meet compliance and cost requirements. Certainly the majority are committed to cloud transformation - only 27% do not expect to increase their use of cloud services between 2016 and 2018.

Keeping up with the pace of digital change and new technologies and service delivery models coming onto the market is a constant test for IT professionals everywhere. Implementing and maintaining effective data security systems and policies is perceived as both a priority and a challenge as they struggle to find the best technology, service platforms, partners and vendors to help them strengthen their cyber defences for example. The growing reliance on cloud services in particular is changing underlying data security requirements by putting greater pressure on borderless network protection that needs to span multiple end points, devices and fixed/wireless connectivity infrastructure.

Malware attacks continue to increase in volume, diversity and sophistication and most companies know they will have to up their game to properly address them. This is a particular problem for larger companies with a bigger attack surface expanded by a greater number of employees, offices and end user devices. Two thirds are fearful of the damage to their brand and reputation that publicly disclosed data security breaches can wreak.

Given these anxieties, it is no surprise that the proportion of the annual IT budget spent on data security will grow by 10 percent in the next two years. In-house IT managers are largely responsible for procuring and implementing the requisite security systems and policies ahead of CIOs, CISOs and CEOs, though in most cases the workload will be shared.

Digital transformation brings many potential benefits to the business, but is most widely seen as a way to reduce the cost of current IT service delivery (though while organisations want to facilitate change they do not want to do so at any cost). Supporting greater product/service innovation and improving the customer experience and interaction is another key driver, with digital transformation identified as a source of competitive differentiation and a route to securing new revenue streams in commercial markets.

Organisations everywhere face complex challenges as they strive to make the best use of Big Data analytics, cloud computing, mobility, social network platforms, IoT and flexible working to reduce capex/opex and improve the customer experience as a source of that competitive differentiation.

Being able to seamlessly connect people, locations, processes, resources and devices to improve staff productivity, partner collaboration and customer communication is vital in driving organisational and commercial agility.

Conclusion

And the scale and diversity of the Internet of Things (IoT) - rapidly expanding to link billions of industrial sensors and monitors, vending machines, digital signage, kiosks and price tags – also depends heavily on the network to support successful service and business models.

Consequently any digital transformation ambition is likely to require investment in a secure, reliable, cost effective network able to reach customers and partners in every corner of the globe. As applications and services move into the cloud, high speed links that minimise disruption by interconnecting public, private and hybrid cloud platforms with legacy on-premise systems become progressively more important.

Software defined networking (SDN) and network function virtualisation (NFV) technologies are able to automate and reconfigure service delivery and reduce human intervention. Because of this, they are widely perceived as ways to speed up application provisioning and simplify management.

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