



Cisco TechWatch March 2013



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Foreword



In the future, the growth and convergence of people, process, data, and things on the Internet will make networked connections more relevant and valuable than ever before, creating unprecedented opportunities for countries, businesses, and individuals.

The intelligent network listens, learns, and responds with open interfaces for greater security, simplicity, reliability, and innovation at a scale like never before.

But today, more than 99% of things in the physical world are unconnected. We are at the start of an exciting journey that still has a long way to go.

Indeed, if we look at the state of play amongst many of the UK and Ireland's SME and enterprise organisations we see an IT environment and infrastructure facing increasing complexity and ill-prepared for the benefits which greater connectivity brings.

Today's IT and business leaders recognise that technology disrupts the market and creates new opportunities. They know that now is the time to seize those opportunities... and they know that if they don't do it, someone else will. But to fully realise this opportunity they must bridge the impasse between maintaining current systems which preserve the status quo, and seeking IT solutions that enable innovation, greater productivity and facilitate new ways of working.

Now is the time to ask, "How can all this connectivity help me grow my business, deliver better services and experiences, and open up new possibilities?"

TechWatch 2013 is about identifying the technology trends and business issues which exist now and finding a way to bring clarity to those challenges. Cisco prides itself on being a strategic partner who

understands the needs of businesses and who can guide organisations through change, helping them solve today's business problems and shape their organisation for the future.

Amazing things will happen and amazing experiences will be created as new people, process, data, and things join and interact on the Internet of Everything.

Thank you for your interest in Cisco TechWatch. Please feel free to follow me on Twitter @ifodderi and provide any feedback or thoughts you may have on this report.

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Executive Summary

2013 marks the beginning of a new chapter at the intersection between business and technology.

Businesses, both big and small, are increasingly becoming exposed to a variety of macro trends affecting the tech world. Current trends such as Bring Your Own Device (BYOD), cloud computing and big data, along with continuing advances in social media, have seen end users becoming increasingly demanding with the experiences they expect to receive. Not only do organisations have to carefully manage these growing trends, but with the continuing recession, there remains the need to balance investment against cost-cutting.

In order to better understand how businesses are responding to these macro trends, Cisco commissioned independent research amongst enterprises and SMEs in the UK and Ireland to fully establish the challenges and impact these trends present. The research follows a similar 'TechWatch' study conducted at the end of 2011 amongst enterprises only. Not only are the emerging trends applying pressure on network performance, but with networks becoming increasingly decentralised, concerns over data security and management are becoming more evident.

The research finds that in addressing such complexity, businesses are looking to get back to basics, prioritising the re-evaluation of their IT infrastructure. Three key pillars emerge, with an underlying focus on network performance:

- **Simplicity:** removing unnecessary complexity
- **Protection:** securing the network and company assets
- **Change & Growth:** making IT investments to stay ahead and improve competitiveness

Some highlights from the research include:

Strategic Priorities and Challenges

- Network performance (51%) and increased security threats (48% enterprises, 44% SMEs) are the most significant challenges facing businesses over the next 12 months
- After reducing overall IT costs (60%, 56%), improving IT security (60%, 55%) and maintaining or improving IT infrastructure (56%) are the main priorities over the coming 12 months

Impact of Technology Investment

- Businesses are split in their approach to communications investment: 58% are proactive and like to stay ahead, whereas 42% are reactive and only make investments when forced. Enterprises are more likely to be proactive (62%) than SMEs (54%)
- After improving the customer experience (58%, 60%), technology is having a substantial impact on companies by enabling better collaboration (54%, 55%) and flexible working (55%, 48%)

Figure A: Increasing complexity



Research Methodology

500 online interviews were conducted with IT decision makers in companies in UK and Ireland during December 2012. Half of interviews were conducted with SMEs (10-100 employees) and half were conducted with enterprises (1000+ employees).

Research conducted by Loudhouse, an independent research agency based in London.



Executive Summary

Tech Review and Spend

- Organisations are likely to have reviewed, or are planning to review, operational simplicity (89%) and operational savings (87%)
- In terms of technology investment, enterprises are more likely to have deployed collaborative software (79%) and network performance management (78%), but both enterprises and SMEs have prioritised the investment of remote access technology (78% and 77% respectively)

Next Generation Workspace

- Within the next 3 years, 76% of companies think operations in their organisation will be structured on the basis of the most efficient use of skills and resources, regardless of where they are located – 15% (1 in 7) say this is already happening
- Businesses are supporting their distributed work environment by providing remote access to email, (62%, 71%) mobile equipment (57%, 55%) and access to corporate servers (50%, 48%)
- Improved employee productivity (44%, 50%), reduced cost (48%, 44%) and improved employee engagement (40%, 42%) are seen as the biggest benefits of a more distributed work environment
- However, managing a diverse range of technologies and devices (38%, 42%), the cost of collaboration (36%, 40%) and difficulties in governance and control (40%, 34%) are some of the biggest challenges presented by a more distributed work environment

- 83% of SMEs think it would be useful (33% say very useful) to be able to centrally manage their network infrastructure (including wifi, switching, security and mobile device management) from the cloud

Enterprises and SMEs hold similar attitudes to the challenges they face with regard to technology in 2013. Key distinctions between the two groups are shown below:

Enterprise vs. SMEs: Highlights

- Approach to communications investment: Enterprises are more likely to be proactive (62%), making investments to stay ahead, compared to SMEs (54%). By way of contrast, SMEs are more reactive (46% compared to 38% amongst enterprises), only making investments when forced to
- Deployment of technologies: Enterprises are more likely to deploy or extend over a range of technologies, notably business analytics applications (77% amongst enterprises compared to 52% amongst SMEs), unified communications technology (76% vs. 53%) and virtualised servers (76% vs. 56%)
- Supporting distributed work environments: Enterprises go slightly further in supporting a more distributed working environment: In doing so, they are more likely to provide corporate intranet (54% compared to 33% amongst SMEs) and video conferencing (47% vs. 32%)
- Approach to adopting technologies: When it comes to adopting technology to support a distributed work

environment, enterprises show slightly more venture, with 36% of enterprises wanting to lead the way compared to 16% amongst SMEs. By contrast, SMEs are slightly more hesitant with 71% adopting new technologies once proven, compared to 55% amongst enterprises.

The 'Next Generation Workspace' is a key theme emerging from the research amongst both enterprises and SMEs alike, where companies unshackle themselves from the restrictions of location and embrace the opportunities that mobile devices and on-demand IT applications and services afford. Within the next three years, it is expected that the majority of companies will structure their businesses based on the most efficient use of skills and resources, regardless of where they are located. Consequently, work environments will become increasingly distributed, allowing networks to fully develop, and end users to become increasingly connected.

We are now entering the era of 'Internet of Everything' and the bringing together of people, process, data and things to make networked connections more relevant and valuable than ever. Forward looking businesses will be beginning to prepare for what is to come, identifying the potential benefits and risks.



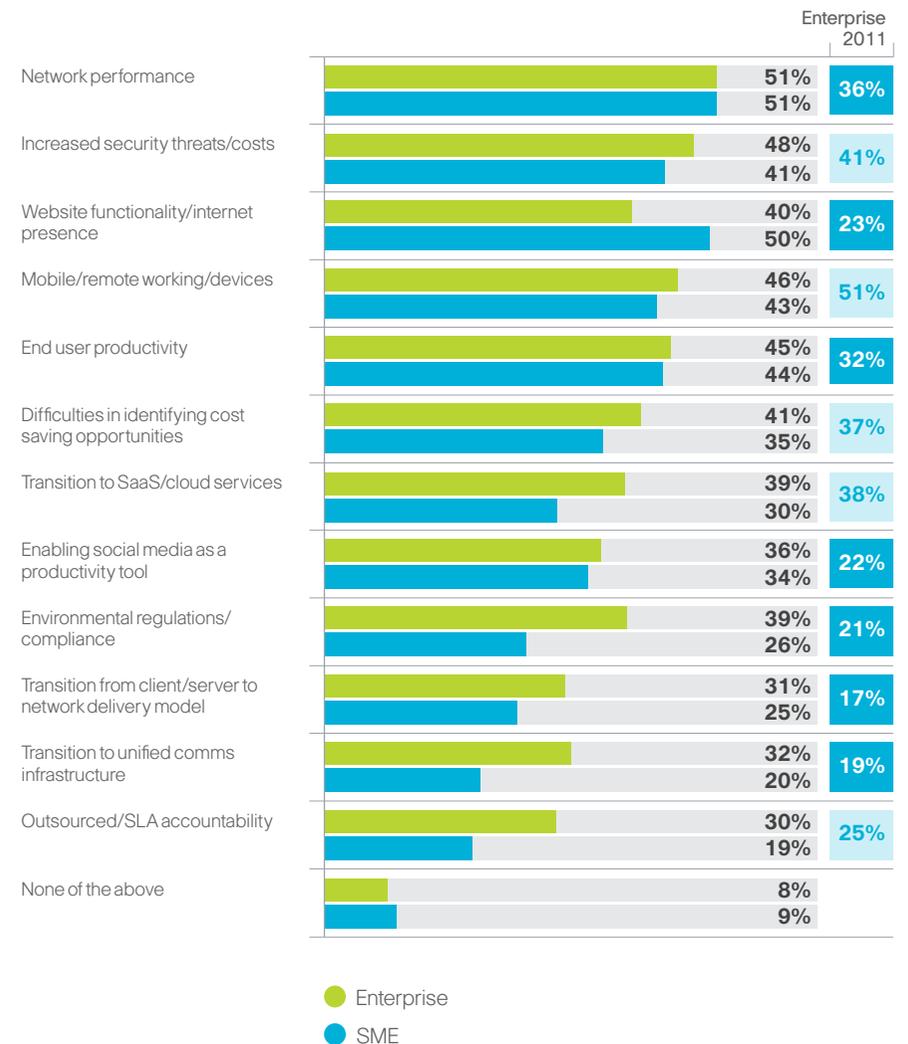
Strategic Priorities and Challenges

The consumerisation of IT has created a variety of benefits for employees and businesses alike. Popular trends such as Bring Your Own Device (BYOD) have allowed employees to be both flexible and productive in the way they work. However, whilst these advantages are well known, increasing demands from end users, coupled with growing trends such as cloud computing and big data, have placed unprecedented pressure on networks within today's organisations. Such is the significance of the problem, that over half of enterprises (51%) cite network performance as a key challenge affecting IT over the next 12 months (see **fig. 1**), a rise from 36% in 2011. This concern is also mirrored by SMEs (51%).

As these trends continue to take shape, so do the security implications surrounding them. Just under half of enterprise organisations (48%, a slight rise from 41% in 2011) and 44% of SMEs believe that increased security threats are a significant challenge for their company. Whilst businesses enjoy the benefits of user empowerment, such freedom can leave network defences exposed to unknown threats, and consequently, managing these risks is an important task for organisations.

How do organisations best manage user empowerment and the associated risks? Under half (46%) of enterprises (compared to 51% in 2011) and 43% of SMEs see remote working as a challenge in itself, and this poses the question of how it can be effectively integrated into their business. Yet, with all technology trends, companies must understand how they can be harnessed and used effectively for their business – 45% of enterprises, a rise from 32% from 2011, and 44% of SMEs see end user productivity as a particular challenge over the coming 12 months.

Figure 1: Significant challenges affecting IT



Strategic Priorities and Challenges

As organisations grapple with this new found complexity, so they are reassessing their IT investments and infrastructure. In the midst of a continuing recession, reducing overall IT costs is the most important priority for both enterprises and SMEs (60% and 56% respectively, see **fig. 2**). Yet, in light of the challenges this presents, organisations have shifted their priorities over the last year. With an increasing number of access points to a company's network and information assets, IT security is becoming a more pressing concern – 60% of enterprises (55% of SMEs) aim to improve their IT security over the coming 12 months, an increase from 39% in 2011.

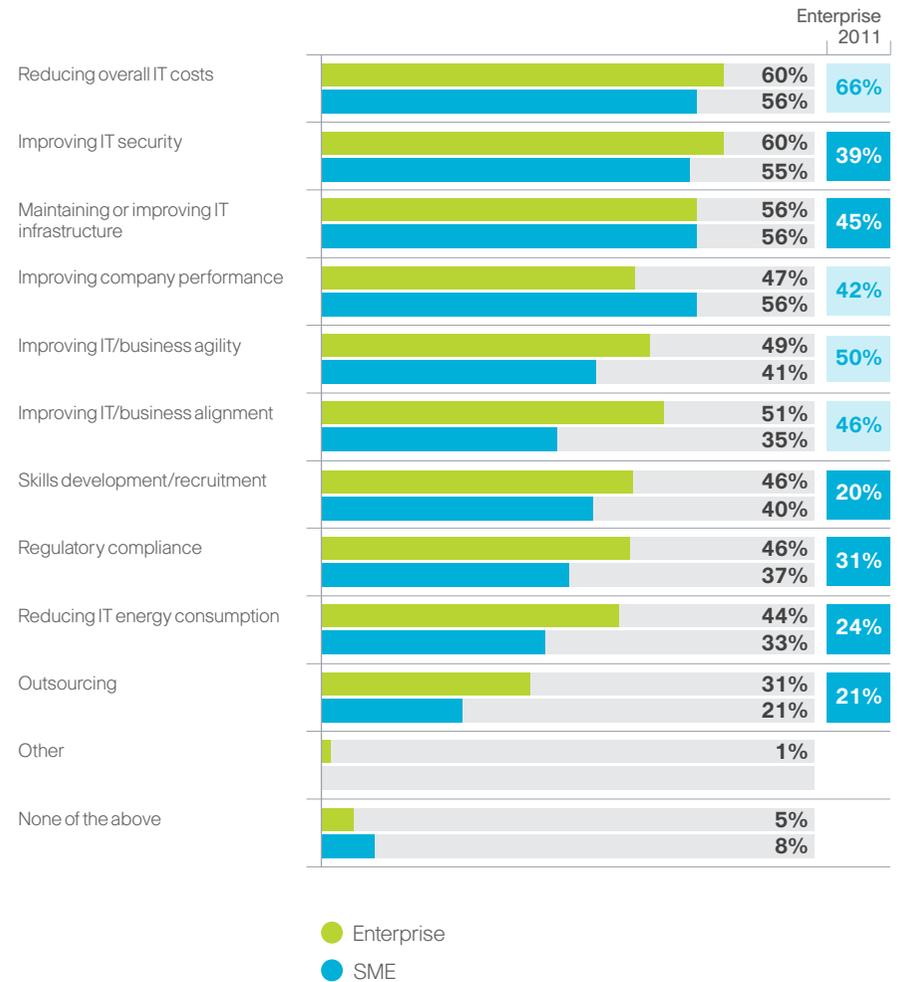
As these trends gather pace and begin to impact organisational productivity and competitiveness, businesses can no longer rely on out-dated systems and processes. More than half (56%) intend to maintain or improve their IT infrastructure this year, up from 45% in 2011. Rather than shelter from the 'tech storm', it seems that many businesses are looking to embrace change and grow.

One of the biggest changes from 2011 is the recognition of skills development and recruitment. Given the media's interest in the IT skills shortage and divide, the focus on this area is likely to increase in 2013.



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of enterprises (55% of SMEs) aim to improve their IT security over the coming 12 months.

Figure 2: Main IT priorities over next 12 months



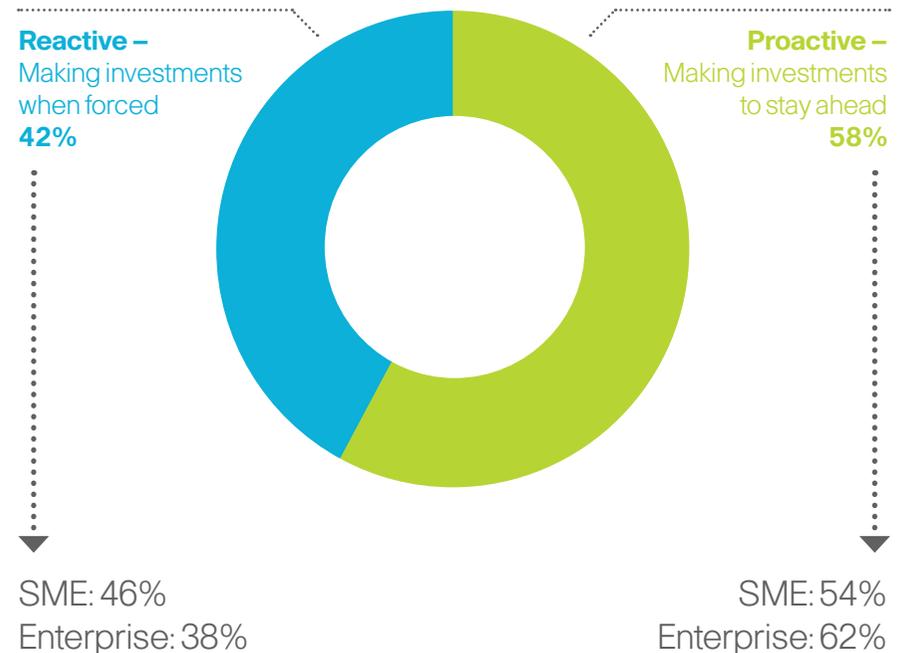
Impact of Technology and Investment

There are broadly two overarching attitudes towards communication investment amongst UK and Irish businesses; those who treat it as an opportunity or those who treat it as a threat. Over half (58%) of companies are 'proactive' when it comes to investing in their communications infrastructure (see **fig. 3**), making investments in order to stay ahead of the competition. By way of contrast, 42% of companies are 'reactive' and tend to only make investment decisions when forced to. Although a mixture of enterprises and SMEs exists in both groups, proactive organisations are more likely to consist of enterprises (62% compared to 52% of SMEs), whilst reactive companies are more likely to be made up of SMEs (46% compared to 38% of enterprises). Available budgets and resources will clearly have an impact on how a company views technology investment. SMEs may have the appetite to be more proactive, but may also lack resources to do so.

Across both enterprises and SMEs, however, technology investment is having a considerable impact on overall business performance. As social media continues to evolve and payment methods develop, the way companies engage and interact with their customers continues to progress. Tech investment has had a substantial impact on the way small and big organisations do business, with 58% of enterprises and 60% of SMEs (see **fig. 4**), claiming this has improved the customer experience within their company.

As social media continues to evolve and payment methods develop, the way companies engage and interact with their customers continues to progress.

Figure 3: Approach to communications investment



Impact of Technology and Investment

However, technology investment has gone further, refining business operations and redefining how end users work together. The continued evolution of BYOD, cloud computing and social media has created a platform for companies to work together and collaborate more easily (54% amongst enterprises and 55% amongst SMEs) whilst also facilitating flexible and mobile working (55% and 48% respectively) (see fig. 4).

Technology's main virtue, it appears, is its ability to create freedom in the workplace, break-down internal barriers and allow businesses to co-operate effectively and efficiently.

Figure 4: Areas in which technology investment is having an impact



Tech Review and Spend

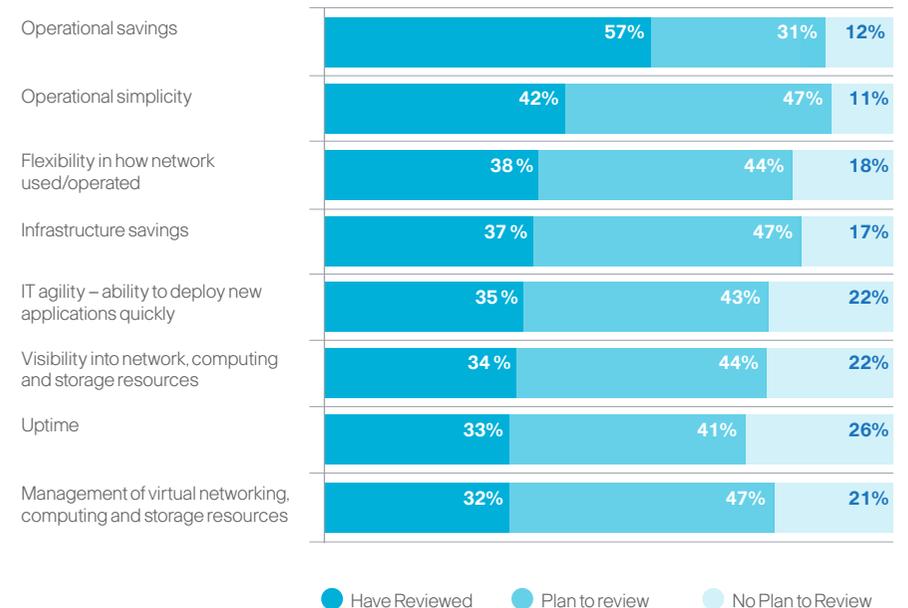
As the pressure on IT infrastructure continues to increase and diversify, organisations are having to review their network provision in order to adapt appropriately. Yet, rather than adding measures to tackle the problem, it appears that ease and simplicity are the watchwords for technology strategy as 2013 gets underway. Nearly 9 in 10 (89%) companies have either reviewed or plan to review operational simplicity (see fig. 5), with a further 87% doing the same with operational savings. Proactive investors are more likely to have reviewed all aspects of their network provisions compared to reactive investors, most notably reviewing their flexibility in how networks are used and operated (44% compared to 30% amongst reactive investors).

Interestingly, in the pursuit of simplicity and ease, companies allocate a larger percentage of their IT budget to maintaining their existing infrastructure, rather than installing new technologies. Just under half (47%) of their budget was spent on maintaining their existing assets and infrastructure. A further 30% was distributed to improve existing assets and infrastructure, with 23% spent on deploying new technologies. This is in line with the findings amongst enterprises a year ago. Balancing the need to evolve against cost constraints clearly remains a challenge for businesses.

Nearly
9 in 10
companies have either reviewed or plan to review operational simplicity.



Figure 5: Review of aspects of network provision



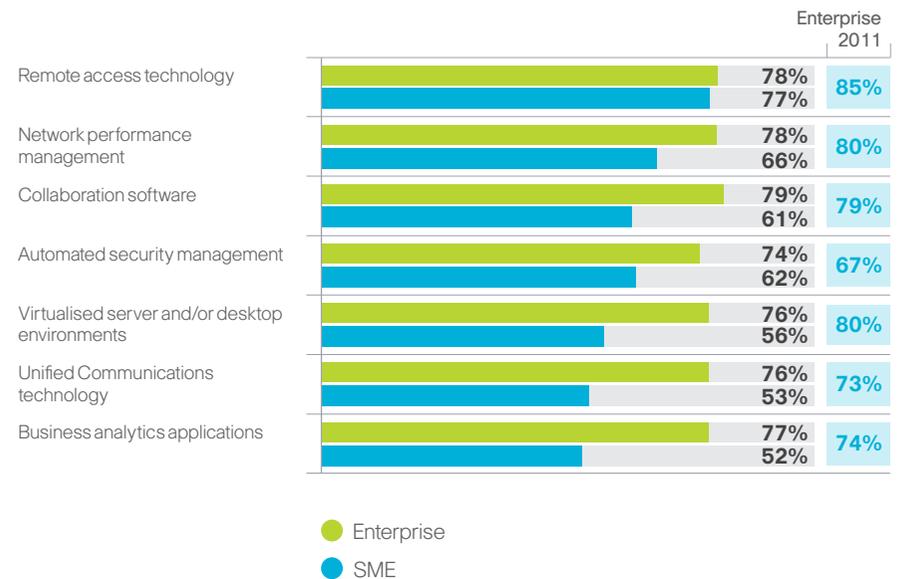
Tech Review and Spend

When it comes to the deployment of technologies, enterprises take a lead over SMEs (see **fig. 6**). Amongst enterprises, collaboration of software (79%) and network performance management (78%) are both technologies which are the most likely to be deployed or extended within their organisation, a pattern somewhat similar to 2011. Such investment, again, highlights the commitment of companies to strengthen their networks to enable better collaboration via a host of different technologies and business models now available. However, both enterprises and SMEs intend to equally deploy remote access technology (78% and 77% respectively) over the coming 12 months, suggesting that when it comes to technology to support the growing BYOD trend, the gap between enterprises and SMEs closes significantly.

One area where there has been a lot of discussion recently has been Software Defined Networking (SDN). The application driven nature of SDN allows for greater flexibility, innovation, dynamism and scale in networks, making SDNs particularly suitable to data centre and cloud environments. Interest in SDNs appears quite high with more than 60% interested in investing in this area. However, given the infancy of SDNs, this figure likely reflects significant confusion in the market around this technology shift.

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Figure 6: Deployment of technologies (% planning to deploy/extend over next 12 months)



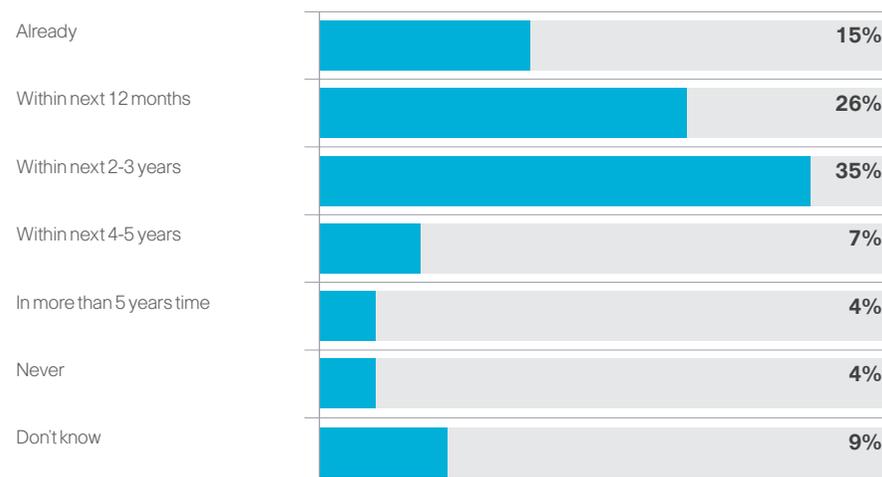
Next Generation Workspace

The idea of employees within an organisation centrally located in one office is becoming an old and dated image. Technologies like remote access are supporting a more distributed working environment, where end users have the power to work flexibly, openly and, to the company's benefit, more productively. Even now, companies are noticing that location is becoming irrelevant for their business. 1 in 7 (15%) believe that, already, operations within their organisation are structured on the basis of the most efficient use of skills and resources, regardless of where they are located (see **fig. 7**). What is even more striking is how quickly businesses are willing to adopt this alternative model. Within the next 2-3 years, three quarters (76%) of businesses will work in such a way.

Enterprises and SMEs differ slightly in their approach to supporting a more distributed working environment, but both are likely to provide remote access to email to end users (62% and 71% respectively) (see **fig. 8**). Allowing end users remote access to corporate network / servers is less widely adopted (50% and 48% respectively). Furthermore, in order to support remote access, both enterprises (57%) and SMEs (55%) are providing mobile equipment to employees.

Overall, organisations are quite hesitant when adopting technologies that support a distributed work environment. Only 1 in 4 (26%) businesses claim to lead the way, even adopting experimental technologies, ahead of other companies in their sector. The majority of businesses (63%) tend to adopt technologies once they are well established with a proven effectiveness. Only 1 in 10 (11%) admit that they are reluctant to adopt 'new' technologies. Enterprises show a greater level of endeavour, with 1 in 3 (36%) admitting they like to stay ahead of the competition and lead the way, compared to 16% amongst SMEs. 83% of SMEs think it would be useful (33% say very useful) to be able to centrally manage their network infrastructure (including wifi, switching, security and mobile device management) from the cloud, suggesting that SMEs too are willing to embrace new ways of managing the evolving strains on their network.

Figure 7: When will location become irrelevant?



Even now, companies are noticing that location is becoming irrelevant for their business. 1 in 7 (15%) believe that, already, operations within their organisation are structured on the basis of the most efficient use of skills and resources, regardless of where they are located.

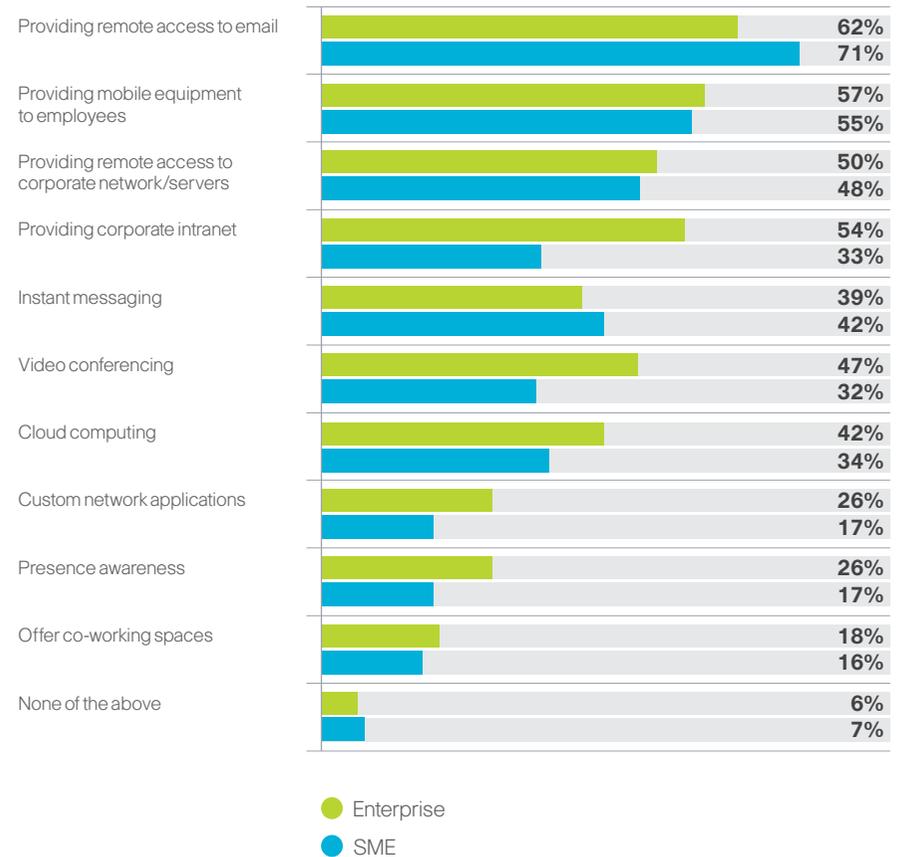
Next Generation Workspace

In supporting a more distributed working environment, 38% of businesses have adopted cloud computing. Currently, an average of 25% of IT applications and services are in the cloud, yet within 3 years time this is set to rocket to over half (52%) of all applications. This shift along with the growing impact of social media, mobile applications and big data, will drive the move towards the Next Generation Workplace, paving the way for The Internet of Everything and fundamentally changing how technology is provisioned and ultimately how and where people work.



25%
of IT applications and services are in the cloud, yet within 3 years time this is set to rocket to over half (52%) of all applications.

Figure 8: Distributed work practices

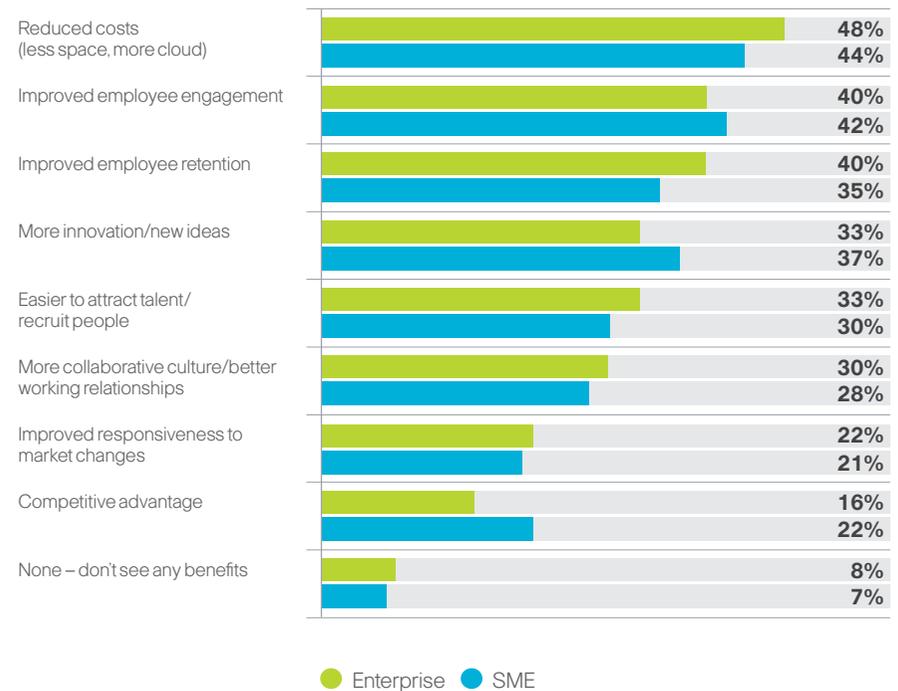


Moving Forward with Next Generation Workspace

The benefits of a more collaborative and flexible working environment are far-reaching (see **fig. 9**). With employees free from location, not only can a greater level of productivity be reached (44% amongst enterprises and 50% amongst SMEs), but organisations can also benefit from 'less space, more cloud usage' and consequently reduced costs (48% and 44% respectively). Yet, the real benefits of a more distributed working environment are longer-term. By empowering employees with a greater sense of freedom, 40% of enterprises and 42% of SMEs believe employees become more engaged with their work, and as a result, businesses are able to improve their employee retention (40% and 35% respectively) over the course of time. Therefore, not only can an increasingly remote network benefit a business commercially, but workers can feel more emotionally engaged with what they do.

However, despite the immediate and tangible benefits, businesses must overcome the presiding complexity that comes with it (see **fig. 10**). Having a distributed working environment results in control becoming decentralised, and as a consequence, the task of managing such a system intensifies – 38% of enterprises and 42% of SMEs admit that having to support a diverse range of technologies and devices is a significant challenge with remote networks. Furthermore, 40% of enterprises and 34% of SMEs have experienced difficulties with the way they govern and control such networks. The result is that senior management have to spend more time controlling their IT environments, potentially leading to a higher cost for businesses. Indeed, 36% of enterprises and 40% of SMEs believe the cost associated with implementing collaboration within their business is a great risk to their organisation. The danger is that any benefit seen from 'less space, more cloud', may be offset by these administrative and management costs.

Figure 9: Benefits from distributed work environment



By empowering employees with a greater sense of freedom, 40% of enterprises and 42% of SMEs believe employees become more engaged with their work, and as a result, businesses are able to improve their employee retention over the course of time.

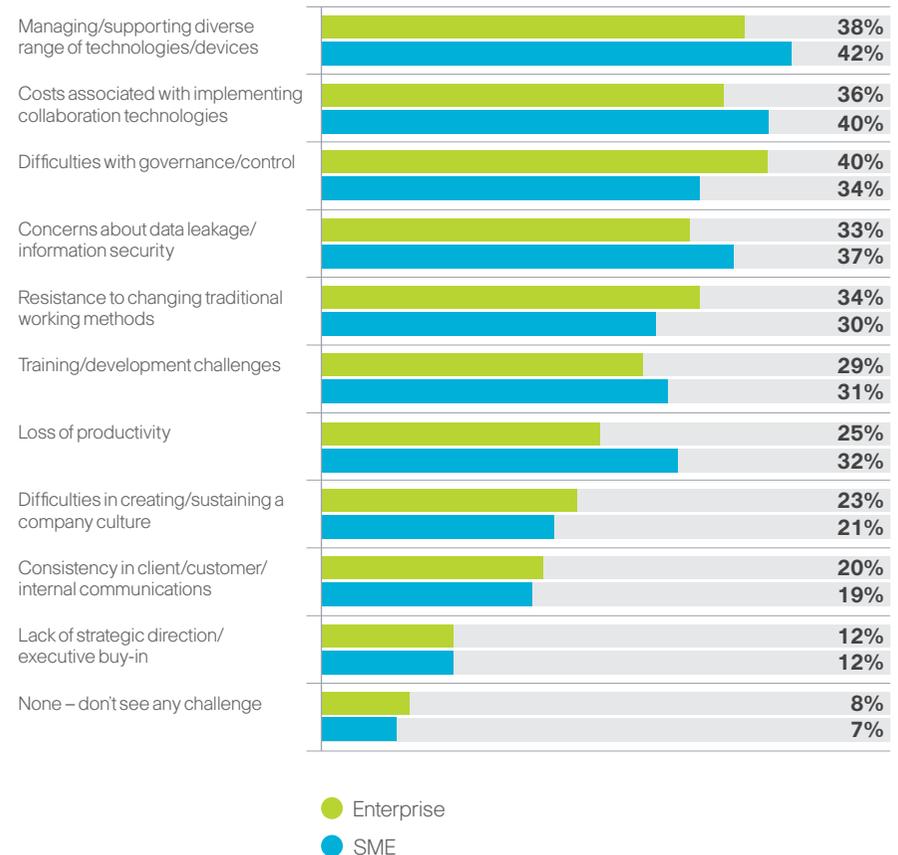
Moving Forward with Next Generation Workspace

There is no doubt about the rewards the Next Generation Workspace brings. 83% of businesses agree distributed work environments result in greater collaboration, with only 1 in 6 (17%) believing it ultimately reduces collaborative efforts. However, businesses are split over the implications this has on data protection. Amongst those who agree distributed working improves collaboration, 47% believe it improves data security, compared to 53% who believe it jeopardises it. Indeed, over 1 in 3 businesses (33% amongst enterprises and 37% amongst SMEs) have concerns over data leakages and information security within their distributed work environment. In order to fully utilise the benefits of collaboration, businesses must therefore be prepared to properly manage their data security going forward.



40% of enterprises and 34% of SMEs have experienced difficulties with the way they govern and control such networks. The result is that senior management have to spend more time controlling their IT environments, potentially leading to a higher cost for businesses.

Figure 10: Challenges with distributed work environment



Conclusion



Today's businesses find themselves caught between two pressure points. On the one hand, with a recession still ongoing, organisations are trying to cut IT costs wherever possible. On the other hand, consumers and employees are becoming ever more demanding and expect organisations to deliver an enhanced user experience. Advances in social media require businesses to have a more pervasive internet presence, the development of cloud computing puts a great strain on data security and the explosion of trends such as BYOD means employees expect to work remotely and freely. All of which has created a world of complexity, and puts an incredible strain on network performance.

However, rather than adding layers to solve the problem, businesses are looking to move back to basics. In reviewing their provision, companies are looking to simplify their existing processes, by removing inefficient practices and making savings whilst doing so. Remote networking, in particular, allows companies to break down barriers and inefficiencies, yet this brings with it many dangers. Businesses understand the consequences, and as a result, are taking measures to protect important information and ensure data is secure. However, simplifying and protecting an organisation's infrastructure can only take you so far. In order

for businesses to prepare themselves for the future, they must be willing to embrace change and use it to drive, rather than inhibit growth. Companies who are proactive in their technology investment are more willing to review their current structure, ensure they are fully protected and, importantly, willing to take the step to a new way of working.

With the careful adoption of key trends, businesses are moving towards the Next Generation Workspace. Organisations are now conducting their business based on their best skills and resources, regardless of where they are. Rather than this being a long-term vision, this is happening now. By 2016, 3 in every 4 businesses believe they will be operating in such a way. Yet managing this process is no easy feat. With such a distributed network, businesses will have to support a variety of technologies and devices, and without the right tools, governing such networks could prove difficult.

Through the midst of the 2013 'tech storm' lies a landscape where businesses can enjoy the benefits of greater productivity and improved employee engagement. The challenge for many businesses, however, is how they weather the storm. Treating the upcoming tech trends as a threat could result in businesses experiencing even more complexity. However, organisations that are more proactive and open could reap the benefits of the new age of connectivity as we move towards the Internet of Everything.

Through the midst of the 2013 'tech storm' lies a landscape where businesses can enjoy the benefits of greater productivity and improved employee engagement. The challenge for many businesses, however, is how they weather the storm. Treating the upcoming tech trends as a threat could result in businesses experiencing even more complexity.

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