New mobile workspaces and the business value of a shift to user centric computing

Why having a progressive end-user computing strategy is vital for process efficacy, business transformation, and enduring competitive advantage.
This paper is written by Ovum in collaboration with Dimension Data and Citrix. The research and analysis contained herein is based on original, independent research by Ovum, and the market experiences of Dimension Data and Citrix.
EXECUTIVE SUMMARY

Catalyst

Somewhat worryingly for enterprises, a significant proportion of the workforce are "doing IT" for themselves – often using their own devices, self-provisioned tools, and cloud services to get the job done. This situation has arisen as a result of under investment in the end-user computing environment and, in Ovum’s opinion, overly restrictive IT policies in many instances. Organisations must address this important aspect of enterprise IT or risk losing control and ownership of their digital business assets.

Ovum believes that factors affecting the end-using computing environment extend beyond enterprise mobility: there is a fundamental shift from the desktop-only end-user computing environment towards a device-agnostic, more user-centred one. Organisations are steadily moving towards a model where employees are able to use any sanctioned device to access applications and data from any location; increasing engagement and improving productivity as a result. While IT strategy may be to improve enterprise mobility, the realisation should always be to strive for better business outcomes.

Ovum View

A consensus is forming: Future competitive advantage will be created through data and analytics; business models will be shaped by cloud; and engagement will be powered by mobile and social technologies. Continued growth in the use of employee-owned devices and self-selected applications is changing the face of the end-user computing environment, yet many organisations continue with outmoded, desktop-only computing strategies that were conceived over a decade ago.

Marshall McLuhan, an eminent Canadian philosopher of communication theory, once said: "We become what we behold. We shape our tools, and thereafter our tools shape us." If we apply this to the enterprise, then we see that over time the tools used by the workforce do indeed shape the processes and products of the organisations that employ them.

Findings from a survey by Ovum of 100 UK IT decision makers support the Ovum view that workforce engagement must be a top priority if organisations are to flourish, and that those organisations adopting a more progressive end-user computing environment are more likely to succeed than those that are not. A key attribute of the customer-adaptive enterprise is an engaged workforce; one that is well-equipped and well-trained. There is little doubt in the minds of IT management that an engaged workforce contributes significantly to business agility, process innovation, and customer satisfaction.

Key Messages

- Customer-adaptive organisations place great focus on business innovation and employee engagement in order to maintain high levels of customer satisfaction. In addition, high-performing organisations pay close attention to all aspects of the mobile workspace, especially in the context of the end-user computing environment. Having a progressive end-user computing strategy is an important enabler of business innovation.

- There is little doubt that a well-equipped, well-trained workforce is more productive than one that is not. Moreover, adopting a progressive end-user computing environment not only improves productivity, but it reduces employee stress and improves work-life balance too.

- The consumerisation of IT has brought about an “experience gap” in the workplace, as employees use modern hardware, software, and services to lead their digital lifestyles.

- The combination of mobile devices and cloud services presents a real opportunity to fundamentally re-think business processes, and to alter the way work gets done. In addition, communication and collaboration can be extended well beyond the traditional desk-based employee and the corporate network.
- Establishing a coherent and progressive end-user computing strategy is no mean feat for the resource-constrained IT department. Senior IT managers are constantly grappling with issues relating to business risk and compliance while the business and technology landscape only ever increases in complexity.
- Good customer service starts with a well-trained, well-motivated, and well-equipped workforce. And in the digital age, being well informed and well-connected are of paramount importance, whether one is desk-based or mobile.
- A consensus is forming: Future competitive advantage will be created through data and analytics; business models will be shaped by cloud; and customer and employee engagement will be powered by mobile and social technologies.

**BUSINESS INNOVATION IS A KEY ATTRIBUTE OF A CUSTOMER-ADAPTIVE ENTERPRISE**

87% of senior IT management believe that business innovation is an important way to remain persistently relevant to customers

There can be no doubting the importance of business innovation in today’s hyper-competitive industry sectors. Every organisation offering a product or service, whether in a B2B or B2C setting, must ensure that its offerings are consistently relevant to its target customer base, as failing to do so will result in loss of business and opportunity. Maintaining this relevancy requires attention to a number of key attributes, one of which is innovation.

**Figure 1: IT management attitudes to business innovation**

IT management agrees: Business innovation is an important way to remain persistently relevant to customers

![Figure 1: IT management attitudes to business innovation](image)

Source: Ovum

Innovation is about preparing for tomorrow today and refreshing value so that customers will want to keep coming back. Most organisations leave innovation to serendipity rather than creating the environment supported by disciplines and technology to accelerate innovation. Although Ovum believes that innovation should be led by the CEO, it is the CIO who will be expected to provide the rich and fertile substrate for business innovation and change.
There's no disagreement: Having a progressive end-user computing strategy is an important enabler of business innovation

Business innovation has been a constant visitor to the IT agenda, most recently in the guise of enterprise social networking tools and platforms. Offerings from the likes of Jive Software, IBM, TIBCO tibbr, and Yammer provide a platform for ideation and innovation, but to be truly useful they need to be integrated with the end-user computing environment in an effective and purposeful manner.

Few organisations have the luxury of thinking holistically about the employee ICT environment, adopting instead a series of tactical projects to upgrade components of the knowledge-worker stack, such as hardware, operating systems, office productivity tools, desktop applications, and collaboration services. At best, this approach can be described as "staged", but it is far from the continuous improvement strategy that is so common in the manufacturing sector for example.

For reasons often beyond their control, many corporate IT departments are inhibited from being either progressive or liberal in their end-user ICT strategies. Ovum believes it is no coincidence that interest in BYOD has come at a time when spending on the end-user computing environment has been severely constrained. Employees with the ways-and-means of doing so are regularly finding their own IT solutions, leaving some IT departments with a sense that control and direction of the end-user computing environment has been lost.

Business innovation can only be cultivated if the workforce is engaged and aligned with organisational goals and objectives. Moreover, employees are known to disengage with the business (and its customers) if they feel ill-equipped and/or untrained. Most business managers know this, and yet other matters are constantly pushed to the top of the agenda and given priority. Ovum believes the time has come to refocus on employee-centric issues, particularly employee-centric business processes and their relationship with the end-user computing environment.

ADOPTING A PROGRESSIVE END-USER COMPUTING STRATEGY HAS A POSITIVE EFFECT ON THE PRODUCTIVITY AND CONTRIBUTION OF THE WORKFORCE

90% of senior IT management agree: A well-equipped, well-trained workforce is more productive than one that is not

Ask a manager why he doesn’t train his staff and he might say it’s because that would give the employee a better chance of getting a job elsewhere, perhaps with a competitor. Ask him which is worse, the risk of losing a well-trained employee to a competitor or having a poorly trained one not doing a very good job, and the imperative becomes obvious.

Just about everyone agrees that a well-trained, well-equipped workforce is important to the success of the company as they generally factor together to determine potential productivity. Exploiting this potential is a matter for process and staff managers, but if the potential isn’t there in the first place then an organisation is likely to lose its overall competitiveness in the market.

Trying to do today's job with yesterday's tools is counterproductive and costs companies money

The end-user computing environment that is so common across businesses today has evolved over more than a decade, and yet a “modern” laptop or desktop computer running Windows, Microsoft Office, and a Web browser would be instantly recognizable to a knowledge worker awakening from a decade-long coma. However,
he would probably be less familiar with the notion of cloud computing, the prevalence of social networking, and the emergence of truly mobile computing.

The business landscape has shifted considerably for many organisations over the last decade. Globalisation, disruptive market forces, changes in customer relationship management, and of course the prevalence of electronic commerce have all played a part in reshaping industries and markets. But, while enterprise applications, line-of-business systems, and industry platforms have evolved alongside new business models and processes, only now are we really starting to see significant change in the working environment of the average employee.

According to the mental health charity Mind, one in two employees claim to suffer stress and anxiety at work, and UK government statistics (www.hse.gov.uk/stress) tell us that millions of working days are lost every year due to stress at work. The 2011/12 Labour Force Survey (LFS) concluded that stress was responsible for 40% of work-related illnesses. The main work activity causing work-related stress (or making it worse) was workload, including tight deadlines, too much work, pressure, or responsibility. Not having the right tools to do the job clearly puts the employee in a stress-inducing situation, and not having the necessary training to use the technology provided is also viewed as a major contributor to work-related stress and anxiety.

Employee work-life balance is enhanced when there’s flexibility in the end-user computing environment

There has been little published research explicitly linking IT with stress-related work illness, but everyone who works with a computer is familiar with the challenges that software upgrades, bugs, and crashes can bring. The arrival of smartphones, particularly the Blackberry, kick-started the enterprise mobility market by providing access to email, calendar, and contacts on the go, but it was the Apple iPhone that drove mass adoption. Although targeting the consumer market, it was the arrival of the iPad that signalled the start of the second act, and with it the start of a new approach to corporate end-user computing, one with a human-centred design.

Despite the low cost of iPads and other tablet computers in comparison with laptops and ultrabooks, this new form factor is still seen by some organisations as the preserve of senior management. However, employees with the prerequisite disposable income are now acquiring these devices for themselves, using them to “workshift” and boost productivity. Moreover, this section of the workforce is also starting to self-provision ancillary services to improve the continuity of their multiscreen behaviour.

Non-sanctioned file sync-and-share products, cloud-based collaboration services, and consumer-oriented communication tools are now in regular use by employees, especially those trying to meet deadlines and be in two places at once. The employee is trying to establish a work-life balance by shifting when and where work gets done, but in so doing they may inadvertently be in contravention of corporate IT policies. Proactive IT departments provide “safety barriers” and steer employees in the right direction when they stray “off-piste”. Moreover, they also contribute to the business risk assessment process itself, providing evidence-based insights to employee behaviour and subsequent consequences.

IT consumerisation, and the arrival of the millennial workforce, is putting pressure on the seams of existing end-user computing environments

In a great many organisations, the IT department has been given the job of the “enforcer” when it comes to information-management policy, so it often sees no other option but to block or ban the use of non-sanctioned devices or IT services. Such actions often produce contention in the workplace, with the IT department seen as a “preventer” rather than an “enabler” of productivity, innovation, and change.

Every business clearly needs to have rules, regulations, and guidelines, but when there is no malicious or malign intent from the employee, one has to question the sometimes draconian regimes that appear to have been erected around the end-user computing environment. On occasion, such regimes are put in place to give
other parties a sense of security and authenticity, but there can be no doubting that locking down the desktop generally reduces the functionality of the equipment being provided to the employee.

Ovum’s survey of UK IT management suggests that most end-user computing environments are being stretched by the demands of the workforce. While there appears to be a slight demographic edge to the data, it would seem to be the more general trend of IT consumerisation that is pushing the IT department to deliver more from the end-user computing environment. An increasing percentage of employees now have access to more modern equipment and more user-friendly tools at home than they do in the office or workplace. This can result in frustrated employees with low morale becoming disengaged with the business – words that no business leader wants to hear.

Surveys over the last decade have indicated that employees generally regard themselves as somewhat ambivalent when it comes to business IT, basically having a “take it or leave it attitude.” But CIOs cannot ignore the changes in attitude that are coming about as a result of innovation in consumer technologies. Just as the PC changed the place where data processing took place (i.e. on the desktop), the tablet computer and similar devices are now changing the place where applications are consumed and data analysed. New devices, apps, and interfaces are being used to engage customers via the mobile Web, and these same technologies are applicable to the enterprise too. “Joy-of-use” is not a category one usually finds on a user acceptance testing sheet today, but Ovum maintains that is should be.

The voice of the employee is starting to be heard as its volume increases

In Ovum’s survey, 46% of the respondents agreed with the statement that “Employees have a strong voice in decisions affecting the end-user computing environment.” This suggests that engagement levels between the general workforce and the IT department are increasing. However, a significant percentage of organisations have yet to start actively listening to the voice of the workforce when it comes to matters of IT, so one assumes a prescriptive approach is deemed necessary.

![Figure 2: Voice of the employee on matters relating to the end-user computing environment](source: Ovum)
One of the challenges that IT departments face in large organisations is the sheer variety of employee computing scenarios. If IT departments were to ask every employee what they required from their computing environment, one might suppose an endless list would emerge, with niche requirements that would require a huge army of IT professionals to address. But if one looks at the patterns emerging from IT consumerisation, then we see clear signs that indicate where current end-user computing environments are heading and by comparison where corporate IT strategies may be lacking.

As an example, if 10% of the workforce decides to set up its own enterprise social network using a freemium offering, then clearly a local or more general business need is not being met. Likewise if employees use consumer-oriented file sync-and-share products or audio/video conferencing tools – these are clear indications that something is missing or not quite right. A recent study by Ovum suggest that 18-24 year-olds are the ones most likely to go out and self-source an alternative tool or application if their need isn’t being met by the IT department, but they are certainly not unique in this regard.

The democratisation of IT continues to be a popular theme at IT industry conferences and in vendor PR. It is also implicit when discussing BYOD and associated initiatives. But, while recognition and acknowledgement of the employee voice is growing, the business still expects thought leadership and guidance from the CIO and IT management team. Providing this to the business requires well-informed insight and analysis which in turn requires time and attention – neither of which are available in abundance. To address this issue, IT professionals need to establish relationships with trusted suppliers and advisors.

THE END-USER COMPUTING ENVIRONMENT HAS BEEN LANGUISHING IN THE DOLDRUMS FOR WHAT SEEMS LIKE AN AGE

92% of UK enterprises are now running Windows 7, but Windows XP is still more prevalent than Windows 8

The Windows PC, in its various guises, continues to dominate the end-user computing environment of small, medium, and large enterprises. While the arrival of Windows 8 produced contention and discussion in the consumer market, most organisations continued with their migrations from Windows XP to Windows 7. Despite reaching end-of-life on April 8, 2014, Windows XP is still in use at 39% of UK organisations according to Ovum’s survey. Anecdotal evidence suggests that most enterprises have a rolling programme of system upgrades, but fragments of Windows XP are likely to exist for some time to come.

Windows 8 is being used in 33% of those organisations surveyed – a number Ovum expects to climb only slowly. The follow-up to Windows 8 (and 8.1) - codenamed Windows “Threshold” – is slated for release mid-2015. Just as Windows Vista became a somewhat tarnished brand, so Windows 8 has a stigma attached to it that may prove difficult to shift.

Windows 7 is extremely well established within the enterprise on desktop and laptop computers, and organisations wishing to deploy tablet computers appear to be generally satisfied with Apple’s iPad (even though 24% or organisations have slates and tablet computers running Windows 8 Pro). This being the case, Ovum cannot see much of a future for Windows 8 in mainstream business use, other than where a very specific use case demands it or a “Bring your own” or “Chose your own” strategy encompasses it.
Microsoft has lost its vice-like grip on the end-user computing environment as corporately owned Apple computers become more common in the workplace

According to Ovum’s survey, 53% of UK enterprises are now running Apple OS X computers – a huge shift from just five years ago. As an accepted component of the end-user computing environment, organisations and employees now have an extra dimension when it comes to enhancing the employee computing experience. The Windows PC is seen as a “necessary evil” for many organisations, but there are others who see the switch to OS X as a real opportunity to revitalise user engagement, especially with corporate IT services.

Virtualisation solutions, such as those provided by Citrix, have enabled Apple Macintosh computers to sit reasonably comfortably within traditional corporate IT landscapes. It is by no means a coincidence that 56% of organisations report using thin- or zero-client terminals, as desktop virtualisation technology can be used to support a whole range of end-user computing scenarios, including BYOD – a strategy being formally adopted by 28% of those organisations surveyed.

### Figure 3: The shape of the end-using computing environment in 2014

**What does the current end-user computing environment look like?**

<table>
<thead>
<tr>
<th>Description</th>
<th>Yes (%)</th>
<th>No (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>We have some corporate laptop/desktop computers running Microsoft Windows XP</td>
<td>61</td>
<td>39</td>
</tr>
<tr>
<td>We have some corporate laptop/desktop computers running Microsoft Windows 7</td>
<td>92</td>
<td>8</td>
</tr>
<tr>
<td>We have some corporate laptop/desktop computers running Microsoft Windows 8</td>
<td>33</td>
<td>67</td>
</tr>
<tr>
<td>We have some corporate slates/tablets running Windows 8 Pro</td>
<td>24</td>
<td>76</td>
</tr>
<tr>
<td>We have some corporate laptop/desktop computers running Apple OS X</td>
<td>53</td>
<td>47</td>
</tr>
<tr>
<td>We have some corporate thin- or zero-client terminals</td>
<td>56</td>
<td>44</td>
</tr>
<tr>
<td>We are using virtualized desktop infrastructure products and technologies</td>
<td>54</td>
<td>46</td>
</tr>
<tr>
<td>We accommodate employee-owned Windows/Mac OS X personal computers at the IT department's or manager's discretion</td>
<td>44</td>
<td>56</td>
</tr>
<tr>
<td>We operate a formal bring-your-own/choose-your-own/use-your-own program, for employees that want to use, where appropriate, their own PC(s)</td>
<td>28</td>
<td>72</td>
</tr>
</tbody>
</table>

Source: Ovum
Mobile device management is becoming mainstream as enterprises start to deploy mobile apps

Enterprise mobility, in the guise of corporate laptops and BlackBerry smartphones, has been a facet of the end-user computing environment for the best part of a decade. So much so that 82% of UK managers are issued with a corporate smartphone, and an even higher number, 93%, are issued as corporate laptop as standard.

Figure 4: The shape of the end-using mobile computing environment in 2014

What does the current end-user mobile computing environment look like?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managers are typically issued a corporate smartphone</td>
<td>82%</td>
</tr>
<tr>
<td>Managers are typically issued a corporate laptop</td>
<td>93%</td>
</tr>
<tr>
<td>Managers are typically issued a corporate tablet</td>
<td>44%</td>
</tr>
<tr>
<td>Corporate smartphones are issued to the workforce when the role requires it</td>
<td>87%</td>
</tr>
<tr>
<td>Corporate laptops are issued to the workforce when the role requires it</td>
<td>99%</td>
</tr>
<tr>
<td>Corporate tablets are issued to the workforce when the role requires it</td>
<td>61%</td>
</tr>
<tr>
<td>We are using mobile device management (MDM) tools</td>
<td>55%</td>
</tr>
<tr>
<td>We are using mobile application management (MAM) tools</td>
<td>61%</td>
</tr>
<tr>
<td>We are deploying/using third-party mobile apps</td>
<td>50%</td>
</tr>
<tr>
<td>We are developing/commissioning mobile line-of-business apps</td>
<td>50%</td>
</tr>
<tr>
<td>We accommodate employee-owned devices at the IT department’s or manager’s discretion</td>
<td>48%</td>
</tr>
<tr>
<td>We operate a formal bring-your-own/chose-your-own/use-your-own program, for employees that want to use, where appropriate, their own mobile devices</td>
<td>30%</td>
</tr>
</tbody>
</table>

Source: Ovum

But one cannot deny the fact that the tablet computer, and specifically the iPad, has significantly extended the reach and range of enterprise mobility strategies. Ovum’s survey suggests that 44% of UK managers are now typically allocated a corporate tablet computer – a huge take-up in such a short period of time. However, there is still a significant (39% of organisations) residual reluctance to issue tablet computers to other segments of the workforce, even when the role of business requirement appears to warrant it.

Ovum believes that part of this reluctance to roll-out iPads whenever the business need arises is linked to use of mobile device management (MDM) solutions. Ovum’s survey suggests that 45% of UK organisations have
not yet deployed MDM solutions, even though 61% say they have mobile application management (MAM) solutions in place. The overlap in numbers would suggest that IT managers are less worried about devices being lost, stolen, or compromised than they are of applications being inappropriately used.

50% of organisations are now deploying/using third-party mobile apps, and the same percentage are developing/commissioning mobile line-of-business apps. It would seem, therefore, that use of the phrase “mobile first” is not without substance. The challenge for developers of mobile business apps is that of meeting the expectations of consumer persona of the employee; one that is generally exposed to slick, easy-to-use, and highly engaging apps from their preferred app store.

UK enterprises aren't relying on BYOD initiatives when it comes to equipping the workforce with new technology

BYOD was the buzzword of 2012. It was followed in 2013 by a not insignificant amount of hype relating to how it was going to transform the workplace and the established notion of enterprise IT. Today, in mid-2014, only 30% of organisations operate a formal bring-your-own/choose-your-own/use-your-own mobile device program according to Ovum’s survey; however, 48% of organisations tell us that they accommodate employee-owned devices at the discretion of the IT department. This gives a combined figure of 78% of organisations making use of employee-owned mobile devices – an important indication of the acceptance of non-corporate owned devices.

The acceptance of employee-owned devices lends itself to new opportunities and use cases in the workplace, but serious thought must be given to the pros and cons of such opportunities. There will undoubtedly be those in the workplace who want to use the latest-and-greatest kit, but Ovum believes that most employees will expect the employer to provide IT equipment that is “fit for purpose”.

MODERNISATION OF DIGITAL WORKSPACE INEVITABLY BRINGS ABOUT NEW WAYS OF THINKING AND NEW WAYS OF DOING

Over half of UK enterprises are seizing the opportunity to do things differently by using mobile devices

Ovum’s survey indicated that 58% of UK enterprises are already reassessing specific business processes and activities to take advantage of developments in mobile devices; however, a surprising 23% are either adopting a wait-and-see approach or have no foreseeable plans in this regard. Ovum believes that computing device form factors are a significant stimulus when it comes to business innovation and process improvement, and that further developments in this area – including “wearables” – will further extend the envelope of the end-user computing environment.

Apple’s domination of the tablet market looks set to sustain in the corporate market for the near term, but Google and Android believe that their enterprise-centric apps and services will increase the appeal of their respective platforms as they mature. Of the two, Microsoft would appear to be in the favoured position due to the continued domination of its office productivity suite, business collaboration platform (SharePoint), and relationship with the IT department.

When considering the impact of enterprise mobility on business processes, it helps to have a method or an approach rather than relying purely on experimentation or hit-and-miss. The availability of new mobile devices should prompt four key questions in regard to business processes:

- Which business processes could be enhanced using new mobile devices?
- Which business processes could be made obsolete because of new mobile devices?
- Which business processes could be reversed because of new mobile devices?
Business models and their processes are already being reshaped by cloud technologies

55% of organisations are already reassessing specific business processes and activities to take advantage of developments in cloud services, and a further 29% plan to do so within the next 24 months. Inter-company collaboration lends itself, of course, so cloud-based solutions, and is the primary reasons why leading vendors in this domain have adopted "cloud-first" strategies.

Microsoft Office 365, IBM SmartCloud for Social Business, and Google Apps for Business may be the most common early destinations for cloud-based enterprise collaboration services, but SAP, Salesforce.com, TIBCO, Jive Software, Oracle, and Citrix all offer attractive cloud products that meld together aspects of business process management with enterprise collaboration and employee productivity.

The confluence of new mobile devices, new cloud services, and new social collaboration models presents a fertile plain on which new business processes can be built and existing ones augmented. Taking the thought-provoking prompts from above, organisations should be considering the following questions:

- Which business processes could be enhanced using new cloud services?
- Which business processes could be made obsolete because of new cloud services?
- Which business processes could be reversed because of new cloud services?
- Which business processes could be retrieved/brought back using new cloud services?
IT DEPARTMENTS NEED THE HELP OF STRATEGIC PARTNERS IF THEY ARE TO COPE WITH THE ACCELERATING PACE OF TECHNOLOGICAL CHANGE

67% of senior IT management say that issues relating to business risk and compliance are inhibiting progressive end-user computing strategies

Enterprise IT management covers a broad set of areas, ranging from the purely technical to the company political. When it comes to managing business risk and compliance it often seems that other departments look to the IT team for a solution when, in fact, another layer of technology is not always the optimum way forward.

Many of the employee niggles and complaints relating to the end-user computing environment are, in Ovum’s opinion, the result of overly restrictive, and sometimes draconian, IT security measures. The IT security industry is apt to use the levers of fear, uncertainty, and doubt to sell their wares when other options, such as better IT training, would offer a more flexible solution.

Figure 6: Obstacles blocking development and implementation of a progressive end-user computing strategy

Which of the following barriers are you currently dealing with as you try and develop a progressive end-user computing strategy?

<table>
<thead>
<tr>
<th>Issue</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of board-level commitment and buy-in</td>
<td>32%</td>
<td>68%</td>
</tr>
<tr>
<td>Lack of a coherent end-user computing strategy</td>
<td>37%</td>
<td>63%</td>
</tr>
<tr>
<td>Lack of appropriate products and technologies</td>
<td>41%</td>
<td>59%</td>
</tr>
<tr>
<td>Lack of investment capital</td>
<td>38%</td>
<td>62%</td>
</tr>
<tr>
<td>Issues relating to business risk and compliance</td>
<td>67%</td>
<td>33%</td>
</tr>
<tr>
<td>Lack of knowledge and insight</td>
<td>34%</td>
<td>66%</td>
</tr>
<tr>
<td>Lack of appropriate IT management tools</td>
<td>33%</td>
<td>67%</td>
</tr>
<tr>
<td>Lack of suitable skills and/or resources</td>
<td>45%</td>
<td>55%</td>
</tr>
<tr>
<td>Company culture</td>
<td>31%</td>
<td>69%</td>
</tr>
</tbody>
</table>

Source: Ovum
CIOs and IT management do not perceive their role to be that of policing the workforce, but this is often how employees see it. There will always be a need to put in place solutions to enforce certain corporate policies, but Ovum would advise organisations to take a step back every once in a while to assess the impact of policy enforcement solutions. If employees complain of slow, sluggish, unresponsive end-user computing environment then someone needs to investigate why this is, as vanilla PC systems, tablets, and other mobile devices are never like this when they are brought to market.

Over a third of enterprises struggle to produce a coherent end-user computing strategy

The increasing pace of change and sheer breadth of IT developments means that IT leaders cannot expect to cover all aspects of IT strategy without a good deal of help. Moreover, actively engaging in business-led projects can result in missed opportunities elsewhere within the business unless someone is actively monitoring the market on behalf of IT decision makers.

Ovum knows too well that today’s busy IT executives do not have the time they would like to devote to methodical and detailed research into areas that may affect efficacy of IT operations and business agility. Combine this with industry-driven agendas, and Ovum believes that the end-user computer strategy seldom reaches the top of the IT agenda. As a result, some IT departments now fear they’re losing control of this realm, as employees adopt a self-service approach to certain aspects of IT provision.

Freemium cloud services are being used and SaaS-based products are being put on expenses to create what some call “shadow IT”. Technology products and services not sanctioned by the corporate IT department are not necessarily harmful to the business or a security risk to the organisation, but it is important that IT departments at least keep track of what is being used. This is not a trivial undertaking when it comes to apps – millions of which are downloaded every month by employees trying to find better ways to get the job done.

The IT skills gap is looming large within 45% of enterprises: skills, knowledge, and insight are all in short supply

Shortages in the IT skills market continue to present challenges to organisations, not only in terms of staffing major transformational IT projects, but in maintaining the momentum of rolling programmes, such as desktop refresh and system upgrades. The end-user computing environment is more complex than it has ever been, and it therefore requires a level of knowledge and expertise not readily found in-house or through general IT contracting services.

Advisory services, such as those offered by Ovum, go some way to plugging the knowledge and insight gap, but deep technical skills and real-world implementation experience are essential if an IT project is going to be successful. This is where companies like Dimension Data play an important role; helping organisations to address some of the most common issues relating to the end-user computing environment, such as:

- How can I continue to support the specific requirements of the desktop – such as moving to Microsoft Windows 7 and 8 – and extend my operations to support mobile devices such as tablets and phones?
- How do I approach BYOD and enterprise mobility?
- How can I use virtualisation to automate labour- and time-intensive tasks?
- How do I give my users the desktop experience they want, while keeping my environment secure?
CUSTOMER SERVICE, COMPETITIVE ADVANTAGE, AND BUSINESS PROFITABILITY ARE INEXTRICABLY LINKED WITH WORKFORCE AGILITY

New digital workspaces offer increased levels of location flexibility and mobility

Ovum’s survey of 100 UK IT decision makers indicates that today’s workforce is split 50/50 between those who work from a single, fixed location (such as an office, manufacturing plant, or shop floor), and those who do not. A small drift towards increased workforce mobility is predicted by 2016. Traditional end-user computing environments have been very much geared towards the static employee, based in an office using a desktop computer or a docked laptop. But with 50% of employees out in the field or working from differently locations, Ovum believes the time has come to adopt an “outside-in” approach to corporate IT, particularly from the perspective of the end-user computing environment.

The increasing prevalence of cloud-based workspaces, collaboration solutions, and vendor “mobile first” strategies suggests that a tipping point is now being reached. When half of the workforce works from somewhere else, everyone in effect becomes a “remote worker”. The employee working from home or from a client site no longer considers himself as the remote person. Indeed, when an employee engages on a B2B or B2C project or activity with an external body they do not specifically think of themselves as a “remote” worker or collaborator.

For many enterprise employees, the word “work” is now associated with something that is required to get the job done, and not necessarily the place that one goes to in order to do it. It is important to understand this change in mindset as it signals a new approach and a revised set of expectations.

Having a flexible workforce contributes to the profitability and competitive advantage of most organisations

71% of the respondents to Ovum’s survey agree with the statement that it is important from a revenue and/or profitability perspective to have a flexible workforce, able to access applications and data at any time, from any place, using any sanctioned device. In fact, only 8% actively disagreed with this statement. Just as there are businesses where everyone works from a single, fixed location, there are those that do not see the need for a highly mobile workforce when it comes to generating revenue and/or profitability. But these organisations are now in the minority, and in all probability this percentage will continue to shrink over the coming decade as new, as yet unimagined technologies, enter the working environment.

78% of IT management believe that good customer service starts with a responsive and flexible workforce

Profitability is not the sole driver of increased enterprise mobility. Over three-quarters of IT managers responding to Ovum’s survey agreed with the statement that having a flexible workforce, able to access applications and data at any time, from any place, using any sanctioned device, was important in terms of providing good customers service. A similar percentage also believes that enterprise mobility is an important factor when considering competitive advantage, thereby strengthening the business case for investment in this area of the end-user computing environment.
Over half of senior IT management recognises the importance of a flexible and personalised digital working environment when trying to attract top talent

Inevitably, there are those industries and business segments that compete more fiercely than others when it comes to recruiting graduates and top talent. Such companies have to pay close attention to a range of employment aspects, with package remuneration usually at the top of the list. But it is clear that offering employees the opportunity to use their own devices is now recognised as an important factor when creating an attractive and appealing place to work.

Flexibility is sought from both employers and employees these days, so having an end-user computing strategy that actively supports the needs of both parties is highly desirable. Being able to use a personal device, such as smartphone, tablet computer, or home computer, to access line-of-business applications and corporate data is all about flexibility rather than preference, as most employees still expect their employer to provide the IT equipment required to do the job. Virtualised desktop infrastructure (VDI) solutions can be used to support these use cases and, in many cases, improve the support of the end-user computing environments.

CONTINUED IMPACT OF SOCIAL, MOBILE, AND CLOUD ON UK BUSINESSES

71% of senior IT management confirm that smartphones and tablet computers will have an impact on their businesses throughout 2014

Smartphone and tablet devices have already had a big impact on some industries and segments of the workforce, and UK IT management expects this to continue throughout 2014. New form factors, new apps, new sensors, new communication mechanism, and new market entrants all point to a highly dynamic market for the
foreseeable future. Ovum expects an increased variety of mobile processors and data connections as the "Internet-of-things" becomes a more tangible factor in enterprise IT.

Figure 8: Smartphones and tablet computers continue to have an impact throughout 2014

![Pie chart showing impact of smartphones and tablet computers on end-user computing strategy]

What impact will smartphones and tablet computers have on your end-user computing strategy in 2014?

- Disruptive impact: 11%
- No impact: 29%
- Some impact: 30%
- Little impact: 30%

Source: Ovum

Every IT manager knows that the Windows PC has its strengths and its weaknesses. A great deal of effort from IT departments, corporate developers, and third parties has been put into addressing these weaknesses over the years. All of this effort has created layers of complexity that have increased the drag on the corporate Windows PC and the end-user computing environment, so starting afresh with a new mobile platform and operating system does offer significant appeal.

However, the world of consumer-centric devices is quite unlike that of the enterprise market, so IT and business managers need to consider matters relating to long-term support and obsolescence more closely than has been the case before. Microsoft currently supports versions of the Windows operating for around 10 years, whereas others have shorter product lifecycles. Asset management will become more important in the years ahead, no doubt merging with today's MDM and MAM product markets.

The impact of file sync-and-share and enterprise social networking will be felt by 80% of UK enterprises throughout 2014

Consumerisation of the end-user computing environment continues to have a growing influence on corporate IT strategies. B2C companies have arguably felt the effect of IT consumerisation more than the B2B companies have, but business social software, such as enterprise social networking and enterprise file sync-and-share, continue to find their way into organisations of all shapes and sizes, and not without some disruption either.

Enterprise social software is transforming the way many employees communicate and collaborate, both internally and externally. Even SharePoint, which was marketed as "the document management system for the masses," is being upstaged by a range of enterprise file sync-and-share products, many of which are able to
provide a more user-friendly interface to corporate documents and collaboration workspaces. Traditional infrastructure vendors, such as Citrix, have stepped into this new market of enterprise-ready, consumer-centric experiences, with products such as ShareFile and Podio. Such offerings work with existing end-user computing components, but they extend the digital workspace well beyond the walls of the enterprise and its tethered Windows PCs.

Two-thirds of UK enterprises surveyed say that cloud-based communication and collaboration products will have an impact on their end-user computing strategy throughout 2014

Cloud-based communication and collaboration solutions are combining with new device form factors to change the way that work gets done. Face-to-face meetings, phone calls, emails, and Windows PCs are not going to vanish overnight in favour of video conferences, social networks, and iPads, but the next two years will see the development of a much more heterogeneous end-user computing environment; one that is not dominated by a single hardware platform, operating system, or computing model. Two-thirds of IT management already see this coming their way, and are expecting it to have an impact on their end-user computing strategy. The challenge, therefore, is to prepare the business and the IT department for change.

Ovum believes that a clear consensus is now forming:

- Future competitive advantage will be created through data and analytics
- Business models will be shaped by cloud
- Customer and employee engagement will be powered by mobile and social technologies

Most organisations recognise the emergence of new mobile workspaces and the business value of a shift to user-centric computing, but not every company is adopting a progressive end-user computing strategy, one that is going to power the next phase of process efficacy, business transformation, and enduring competitive advantage. Becoming a customer-adaptive enterprise is one way of ensuring company longevity and increased market relevance, and several key attributes of the customer-adaptive enterprise (engaged workforce, collaborative environment, continuous innovation, and connected business processes) are intertwined with the end-user computing environment.

RECOMMENDATIONS

Engage the workforce in matters relating to their digital workspace. Be more flexible when it matters and less prescriptive unless mandatory. Educate and train the workforce in the use of new technology in order to gain competitive advantage. Become a customer-adaptive enterprise.

Embrace the opportunities afforded by developments in new device form factors, computing models, and collaborative working: As an organisation: think differently, act differently, and work differently.

Backfill the IT skills shortage by establishing proactive business relationships with trusted suppliers. Focus on extracting business value from the knowledge and insights of others: peers, subject-matter experts, and communities of practice.
ABOUT DIMENSION DATA

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

Dimension Data believes the forces in play extend beyond mobility. There is a fundamental shift from a desktop-centric computing approach towards a highly user-centric one. We’re moving to a model where individuals will be able to use any device to access applications and data, from any location – and be productive. We’re focusing on ensuring we can help our clients build a user-centric computing model, firstly by abstracting the user from the device and then abstracting the device from the data.

Dimension Data’s End User Computing solution helps organisations to:

- Assess their client computing and desktop needs
- Identify a next-generation desktop strategy
- Develop a technology architecture roadmap
- Implement solutions in a progressive manner to effectively deploy, manage and operate the new desktop environment
- Extend the existing processes to support tablets and smartphones
- Review and define the necessary policies and considerations around BYOD

ABOUT CITRIX

Citrix (NASDAQ: CTXS) is a leader in mobile workspaces, providing virtualization, mobility management, networking, and cloud services to enable new ways to work better. Citrix solutions power business mobility through secure, personal workspaces that provide people with instant access to apps, desktops, data, and communications on any device, over any network and cloud. This year, Citrix is celebrating 25 years of innovation, making IT simpler and people more productive. With annual revenue in 2013 of $2.9 billion, Citrix solutions are in use at more than 330,000 organisations and by over 100 million users globally. Learn more at www.citrix.com.

METHODOLOGY

This paper was written by Ovum in collaboration with Dimension Data and Citrix. The research and analysis contained herein is based on original, independent research by Ovum, and the market experiences of Dimension Data and Citrix. The survey instrument comprised 23 questions and the responses were gathered through telephone interviews with 100 business IT decision makers in medium to large UK enterprises. The industry scope was predominantly private sector, with distribution across financial services, manufacturing, pharma, retail, and transport/logistics.