

A Forrester Consulting Thought Leadership Paper Commissioned By Dimension Data

The Client Virtualisation Imperative

IT Leaders Embrace Virtual Desktops That Require Hybrid Tools, Skills And Managed Services

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FORRESTER

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Executive Summary

With server virtualisation now well established in the world's data centres, IT leaders are turning their attention to client virtualisation to address some of their greatest computing challenges. But vendors often offer conflicting guidance and there are endless architectures and technology options to consider. Because there's no one-size-fits-all solution for all user types and application workloads, IT managers are finding that it will take a combination of technologies and solutions to deliver the richest computing experience to their increasingly distributed and mobile workforces.

Forrester Consulting recently completed a commissioned study on behalf of Dimension Data of 546 enterprises with 500 or more employees concerning their client virtualisation and end-user computing plans. The survey found that organisations are still in the early stages of their next-generation desktop and mobile deployments and that more than half of the organisations surveyed have client virtualisation as a critical or high priority over the next 12 to 18 months as they strive to deliver more flexible computing solutions to their workforce.

Key Findings

Forrester Consulting's study yielded three key findings:

- **Organisations of all sizes, industries and geographies are embracing client virtualisation.** IT managers who support hundreds if not thousands of desktops and applications quickly realise the complexity associated with delivering a modern PC experience built on a modern operating system (OS) and client virtualisation due to their impact on the applications, infrastructure, support processes and IT staff. The migration to a new OS in particular represents a unique challenge for two reasons: 1) Typically it's the first major OS transition in the last five to eight years, i.e. as organisations move directly from Windows XP to Windows 7, and 2) a significant portion of applications that work in the previous OS will need adjustment for the new system. Organisations around the world are still in the early stages of their desktop transformation, but there's never going to be a better time to tie desktop and application virtualisation technologies to their upgrade plans.
- **IT managers are embracing hybrid architectures for their segmented workforces.** IT managers looking to embrace client virtualisation technologies face an overwhelming variety of technology options. While nearly 40% of their workforce is located at the corporate headquarters, they also support populations out of branch or remote offices (27%), large or regional offices (15%), external worksites (7%), mobile workers without a 'home' (6%) and home office workers (5%). User diversity and decentralised and mobile workforces are forcing organisations to take hybrid approaches that balance their technology options with cloud-hosted, streamed, on-premise and thick client solutions that are optimised for heterogeneous environments.
- **IT leaders should turn to systems integrators for deployment and management support.** IT leaders must realise that neither the data centre nor the desktop team alone has sufficient experience or visibility to make the decisions required in the planning and deployment process, nor the tools to manage the resulting hybrid environment effectively. Isolated planning leads to inappropriate and impractical decisions about hardware, software, and tools. The results are always disappointing if they ultimately deliver reduced availability and performance, higher operational costs or poor end-user satisfaction. Because of these challenges, organisations are turning to systems integrators and infrastructure outsourcers that can provide a holistic client virtualisation

and end-user computing migration strategy mapped to client requirements and underpinned by proven experience, comprehensive services and automated tools.

Progressive Businesses Are Embracing Client Virtualisation

Various flavours of client virtualisation have existed for more than 20 years. During this time, it has suffered a number of ‘false starts’ as IT decision-makers struggle with the cost and complexity of the technology. This has been exacerbated by vendor, media and analyst hype around solutions that have failed to live up to expectations. Today, however, a number of compelling factors are converging to drive it towards mainstream adoption status, including the pressures to lower ongoing costs, the ever-present demands to support employee-owned devices and the long-term vision of becoming device- and OS-independent.

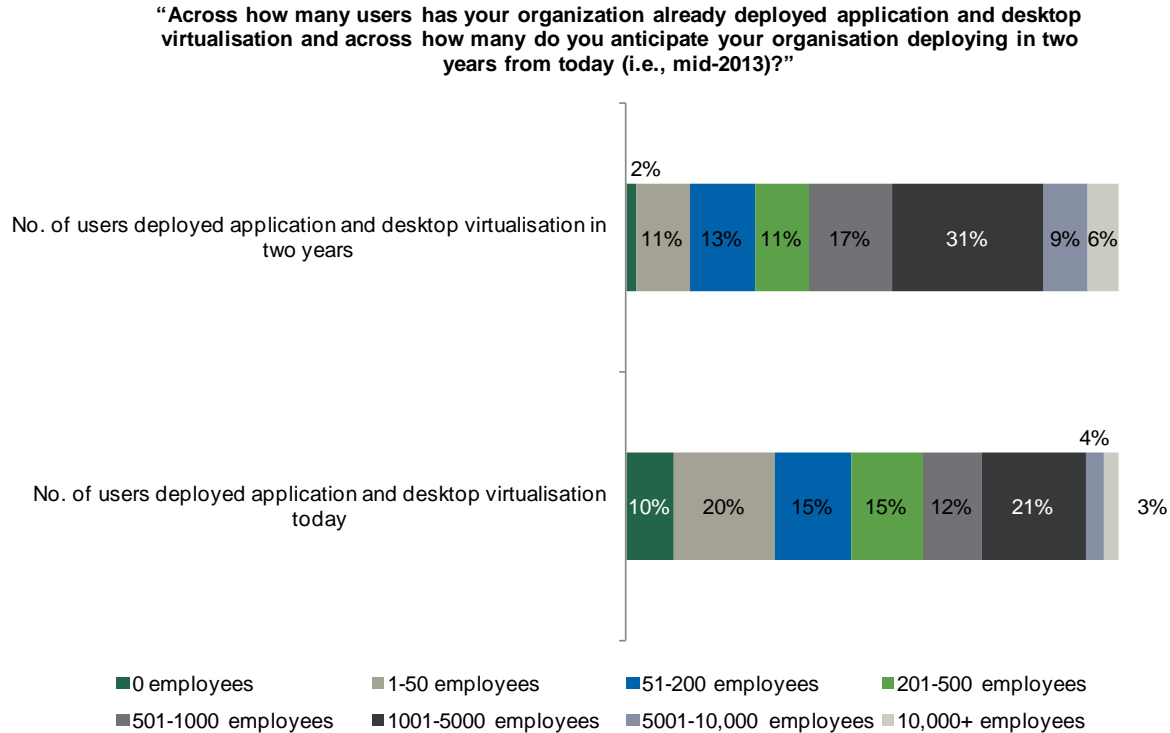
Arguably, the most compelling justification for IT leaders is that they’ve been locked into a seemingly never-ending ‘rip-and-replace’ refresh cycle for more than 20 years — turning over desktops and laptops every three to five years. When you need to deploy a new OS, you’re forced to invest millions to prepare your software and hardware ecosystem for native compatibility. And at the end of the day, what’s your reward? You’ll have to do it all over again in another three to five years when those systems reach their end of life. Desktop and application virtualisation, when used together, will reduce the dependencies that OSs have on the hardware, and applications have on the OS, and will enable organisations to gradually move away from this incessant cycle. Modern OSs are driving an inflection point today, and we recommend that IT teams use this time to get started on their journeys.

- **The revolution is here; virtualisation and cloud computing represent the future of the corporate client.** Client virtualisation and cloud computing can help IT managers bring a measure of control to an increasingly chaotic environment, while not stifling employee flexibility and innovation. By leveraging these emerging technology tools, IT managers can support user choice and manage the essentials of consumerisation. In parallel, organisations must aggressively upgrade users to modern desktop environments to reduce costs, maximise productivity and improve business efficiency and customer satisfaction. The study found that, while most organisations’ existing deployments touch less than 500 employees today, they have plans to scale these deployments to thousands — and ultimately tens of thousands — of users over the next two years (see Figure 1).

“Our ‘New Ways Of Working’ group has been a very collaborative experience between the business and IT, and it’s been interesting to see the shift that has happened over past 12 months. IT has come alive about their support of consumerisation, and it is very much leading the effort now. It’s not just meeting expectations but exceeding them and bringing new thinking to the table. Conversations that were completely impossible 18 months ago are now happening.” (Infrastructure architect, engineering company)

Figure 1

Virtualisation Deployments will be Scaled Out to Thousands More Employees Over the Next Two Years



Base: 294 global enterprise IT decision-makers

Source: A commissioned study conducted by Forrester Consulting on behalf of Dimension Data, August 2011

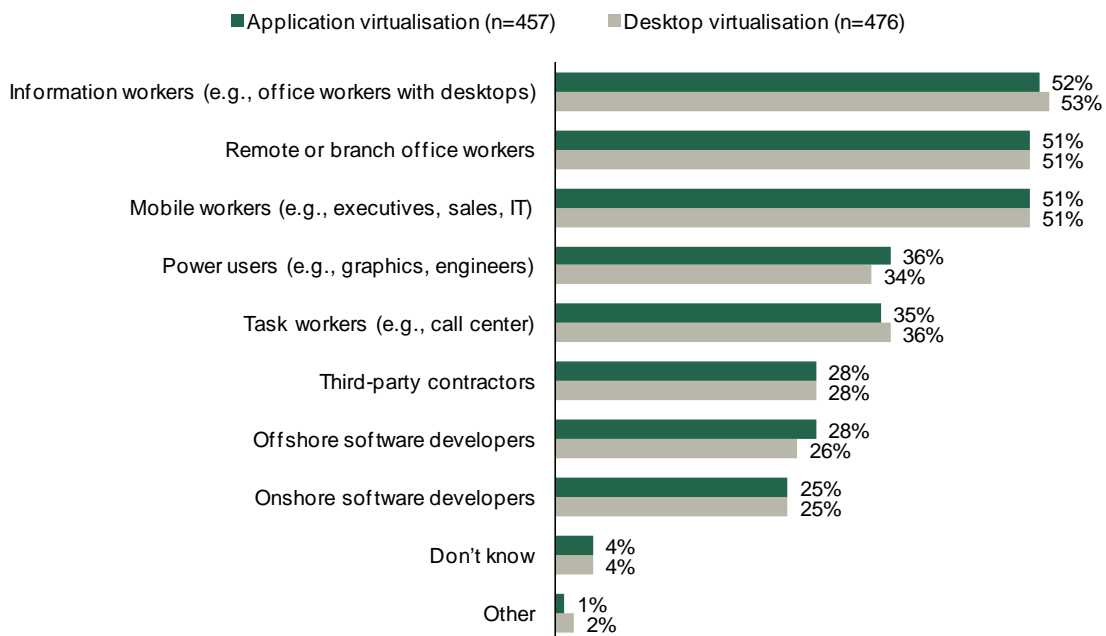
- Early adopters are no longer limited to heavily regulated industries in North America and Western Europe.** Client virtualisation is primarily deployed in heavily regulated industries such as financial services, insurance, healthcare, and public sector organisations. These industries have unique security, compliance, manageability and business continuity requirements that enhance the business case for client virtualisation. Desktop and application virtualisation is also becoming widely deployed in industries such as hospitality, legal, business process outsourcing, education, telecommunications, manufacturing, retail and transportation. Additionally, the study found that countries like China, Germany, the US, India, Australia and New Zealand had the most aggressive client virtualisation deployment plans. So when does a technology officially transition from emerging to mainstream? When it eclipses a pure number of installations, market share, dollars generated, or end-user interest and adoption. Bottom line: It's happening today with client virtualisation.
- End-user segmentation will play a critical role in the success of next-generation end-user computing upgrades.** IT managers traditionally segment their workforce into three rudimentary profiles: task workers, information workers and power users. However, these categories aren't granular enough to successfully map to client virtualisation strategies. Organisations should conduct a workforce segmentation project prior to defining

their next-generation client computing strategies. The lines of business or end-user segments more commonly identified with client virtualisation include call centre workers; administrative professionals within a finance, legal, or HR department; internal software developers; third-party contractors; and offshore and remote developers. Following the success of these initial pilots, IT often extends its implementations to a much broader set of users, including information workers, executive managers, temporary employees and even primarily mobile workers. Each brings its own unique set of requirements and challenges to deliver against (see Figure 2).

Figure 2

Most Virtualisation Will Be Implemented For Information, Remote And Mobile Workers

“To what types of users are you planning to deploy application/desktop virtualisation?” (select all that apply)



Base: Global enterprise IT decision-makers

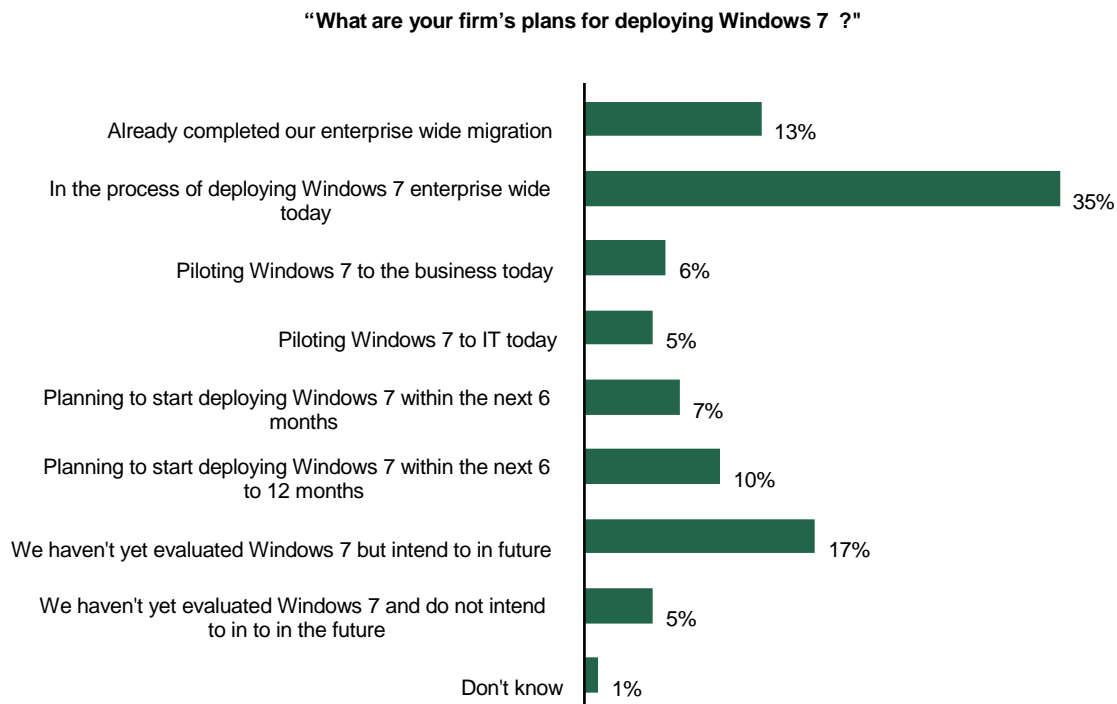
Source: A commissioned study conducted by Forrester Consulting on behalf of Dimension Data, August 2011

- New OSs and consumerisation / Bring Your Own Device (BYOD) strategies represent two major market enablers for client virtualisation.** Organisations worldwide are still in the early stages of transforming their desktop infrastructures from legacy systems such as Windows XP (supported by 47% of organisations) to modern platforms such as Windows 7 (supported by 31% of organisations, see Figure 3). IT managers are also feeling heavy pressure from the business to support the consumerisation of IT. Today's users are highly influenced by the technology — hardware, software and services — that they use in their personal lives and also expect to use in their professional lives. So, in addition to transforming their desktops, organisations are also aggressively considering BYOD strategies that encompass smartphones, slates, and even laptops (see Figure 4).

Because virtualisation reduces dependencies between the hardware, OS, applications, user settings and data layers, organisations are selectively taking advantage of this technology as they architect modern and more flexible systems for their users.

“About a year and a half ago, I put together an application and desktop virtualisation strategy. Unfortunately, we then sat on it for a couple of months — but virtualisation’s importance re-emerged with mobile devices. We realised we needed to diversify our computing ecosystem, as we felt we had been locked into proprietary platforms. Today we’re focused on iOS support for iPhone and iPad; next up will be Android.” (Enterprise architect, pharmaceutical company)

Figure 3
The Majority Of Windows 7 Adopters Are Already In The Process Of Deployment

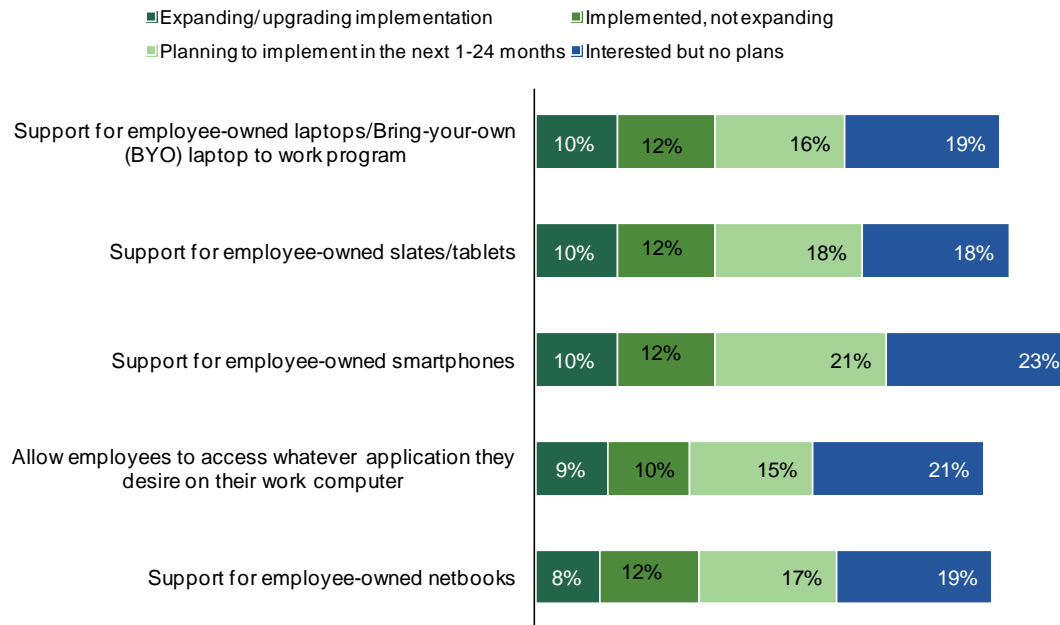


Base: 546 global enterprise IT decision-makers

Source: A commissioned study conducted by Forrester Consulting on behalf of Dimension Data, August 2011

Figure 4
Support For Employee-Owned Devices Is Growing

“For each of the following examples, would you say your firm is interested to selectively embrace or wanting to avoid consumerisation of IT?”



Base: 546 global enterprise IT decision-makers

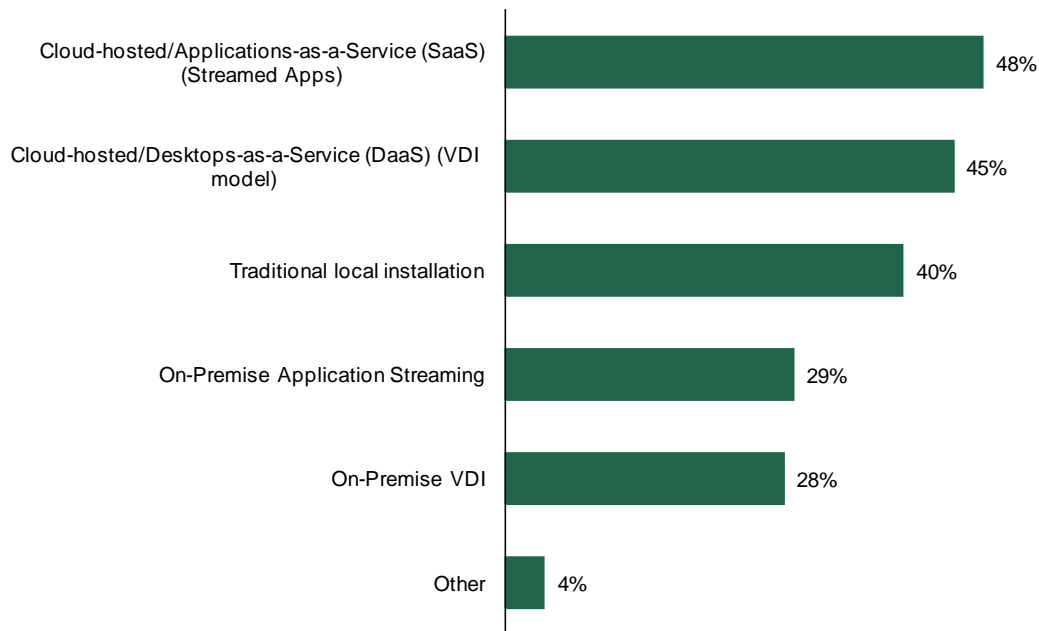
Source: A commissioned study conducted by Forrester Consulting on behalf of Dimension Data, August 2011

- The inevitable desktop transformation is the perfect opportunity to embrace hybrid architectures.** As organisations consider the technical options for their next-generation desktops, IT managers are increasingly leaning toward cloud-hosted architectures — particularly in China, New Zealand, the Netherlands and the US — rather than on-premise solutions (see Figure 5). New applications, more efficient remote access for mobile devices and quicker time to deploy are driving organisations to question whether deployments always need to be insourced and on-premise. Organisations are increasing their investments in cloud-hosted and managed applications and infrastructure services across most domains. Capex savings and reduced staffing requirements are driving increased interest and adoption. Cloud access and delivery opens up new possibilities for mobility and end-user computing and IT managers are increasingly turning to hybrid systems as they balance their legacy infrastructure with new capabilities and investments.

Figure 5

Cloud-Hosted Deployments Are The Preferred Method For Application And Desktop Virtualisation

“What operational models are you considering as you plan your company’s new and/or continued investments in application and desktop virtualisation?”



Base: 546 global enterprise IT decision-makers

Source: A commissioned study conducted by Forrester Consulting on behalf of Dimension Data, August 2011

Client Virtualisation Adoption Levels Rise With Hybrid Architectures

For too long, the industry has used the term ‘virtual desktop infrastructure’ (VDI) to represent all the dimensions of client virtualisation. In fact, there are at least five forms of desktop and application virtualisation to consider, including (see Figure 6):

- **Hosted desktop virtualisation.** Hosted desktop virtualisation — more commonly known as VDI — is where the desktop environment executes in a protected state on data centre servers, as opposed to locally in a more traditional thick client desktop or laptop model. The virtual machine runs directly on a data centre server alongside other virtual machine (VM) instances, allowing multiple users to remotely connect to their desktops simultaneously.
- **Application virtualisation and streaming.** Application virtualisation isolates an application’s resources, eliminating the risk of conflict with other applications. The application can stream from a server, leaving no

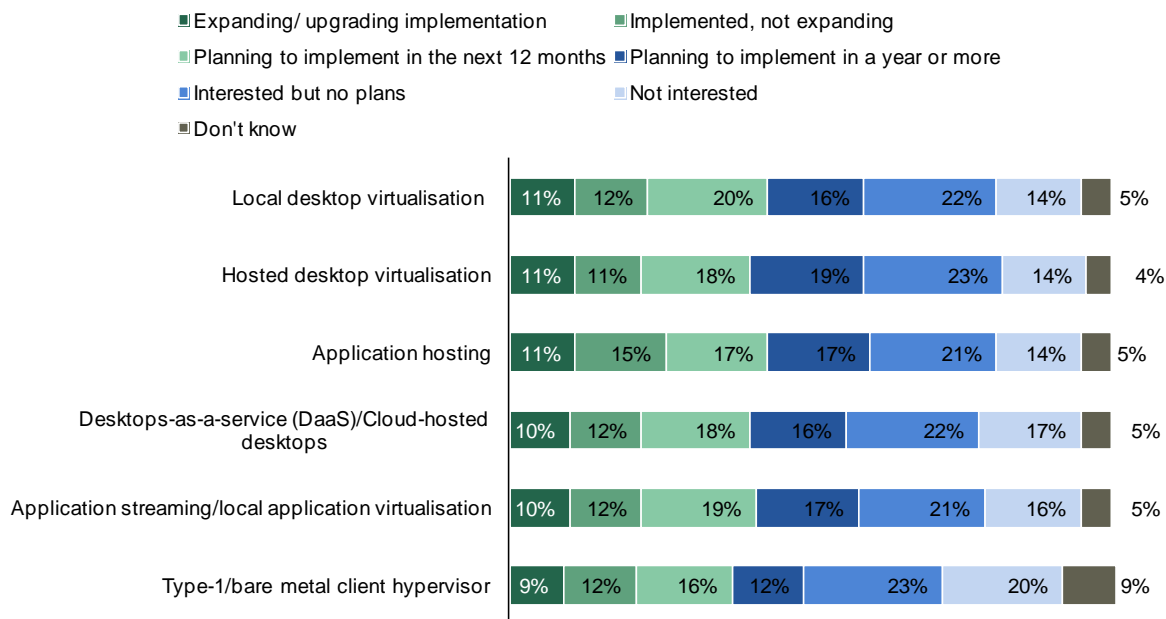
footprint on a PC, or it can be cached locally. Application virtualisation works well when there is known bandwidth (for streaming) and a fixed number of known applications are in use.

- **Local desktop virtualisation.** With local desktop virtualisation, the entire desktop executes in a protected environment on the user's PC. This isolated environment runs on top of the underlying hardware and host OS. Virtual machines run like any other application directly on top of an installed OS but are still independent from any software that has been deployed. Local desktop virtualisation enables desktop managers to provision virtual desktops as files rather than as individual, physical PCs. This desktop is fully managed and secured by the same policies that govern physical PCs. Because a virtual desktop has all the attributes of a file — albeit a large file — it can be encrypted and backed up, helping streamline regulatory compliance and business continuity processes.
- **Bare metal hypervisors.** There continues to be debate about whether bare metal hypervisors (sometimes referred to as type-1 client hypervisors) make sense for large businesses, and whether they create more issues for IT managers than they solve. So much so that some type-1 solutions have been delayed for the immediate future, while competitors have chosen to attempt to establish first-mover advantages in the market. Despite this, IT managers should note that there are start-ups that moved to offer type-1 solutions before their larger competitors.
- **Desktop as a service (DaaS).** Many in the industry lump together hosted desktop virtualisation and DaaS or cloud-hosted virtual desktops. But doing so misses a key differentiation between the two deployments. Although delivering a consistent, managed desktop to a set of users and centrally storing the intellectual property they create are common characteristics of the two, it's storing that IP on a public, multi-tenant service that makes DaaS difficult for some IT managers to justify. Security is the most significant barrier for this service, as the managed content is inherently personal and highly valuable.

Figure 6

Adoption Of Different Types Of Virtualisation Are Spread Evenly Across The Various Models

“What are your company’s plans to adopt the following types of application and desktop virtualisation?”



Base: 546 global enterprise IT decision-makers

Source: A commissioned study conducted by Forrester Consulting on behalf of Dimension Data, August 2011

Organisations Should Think Long-Term As They Build Their Business Cases

Building the business case for client virtualisation is arguably the top challenge facing IT leaders who appreciate the technology’s benefits but struggle to translate them to tangible business outcomes. Any hosted technology that requires back-end infrastructure upgrades across server, storage, network and systems management environments can disrupt a positive return on investment. And OS licensing density drives further complexity for IT managers who often need to communicate software assurance requirements to their sourcing and vendor management colleagues. Despite these challenges, thousands of organisations have successfully deployed client virtualisation and many have scaled their environments up to hundreds and even thousands of desktops.

We recommend that IT leaders build their business cases with the following benefits in mind (see Figure 7):

- **Extending the life of existing PCs or migrating to lower-cost and lower-risk thin/zero clients.** One form of desktop virtualisation transfers the heavy processing from endpoint devices to data centre servers. Historically, the useful age of PCs averages three to five years, because older PCs can’t support the increased processing demands of new applications. If the ‘heavy lifting’ can be offloaded, existing PCs can be repurposed until they

are mechanically exhausted — often extending the life of the asset by an additional one to three years. Extending the useful life cycle of PCs is helping organisations to fund client virtualisation projects. Furthermore, because client virtualisation enables entire desktops to be hosted in the data centre or the public cloud, thin and zero client devices are becoming viable options for a broad spectrum of user types. Thin and zero client devices introduce operational savings — such as improving your security posture and reducing the need to manage an endpoint OS — that helps bolster the payback of your business case.

- **Increasing data security and centralised patch management.** IT managers who have successfully deployed client virtualisation have experienced dramatic improvements in their data security processes and patch management efficiencies. Why? Because the technology enables organisations to remove all data from the user machines and instead host it in the data centre or public cloud. Now, the impact of a lost or stolen machine represents little more than the cost of the physical replacement, instead of the potential data security breach that used to keep IT professionals up at night. For many organisations, simply avoiding the cost of embarrassing and time-consuming disclosure procedures can make the case for client virtualisation.
- **Increasing user productivity and improving employee satisfaction.** Client virtualisation helps increase user productivity and employee satisfaction in a number of ways. Your workers can access the same desktops and applications that they could previously, but with the added benefit of doing so from any device and any physical location. This enables workers to be productive from places such as home offices or hotel kiosks, instead of only in the office on their corporate desktop. In addition, unmanaged PCs, such as an employee's or third-party contractor's own laptop, can now run corporate applications. This has proven to lead to an increase in worker productivity as well as end-user satisfaction.

“Because of what’s going on in the marketplace with the diversity of platforms and the demand on IT to support this continuum of devices, our vision is that we don’t care what you use but these are the applications we’ll provision you with and here’s how you’ll access them. We want to get to the device-agnostic point that we don’t care from what device or location you connect. I don’t know if we’ll get there in the next few years, but that’s the primary reason we’re exploring client virtualisation.” (CIO, public sector organisation)

- **Lowering support costs and reducing the need for desktide visits.** Onsite visits are one of the most expensive areas associated with PC support. An onsite support visit can cost eight times as much as a phone-based support call. Client virtualisation can make desktide support a thing of the past, because a centrally managed data centre now handles all computing. This means that IT staff can fix desktop or application problems simply by logging into the server. For PC or thin client problems, organisations are finding that it’s less expensive to replace the old or low-cost hardware than spend time and resources troubleshooting issues. Client virtualisation can also reduce support costs because its isolation capabilities eliminate application conflicts. IT managers have told us that application virtualisation decreases their application support costs by as much as 80%.
- **Faster time to complete mergers and acquisitions.** Mergers and acquisitions are time and resource-draining endeavours, particularly for those charged with ‘on-boarding’ new employees. Client virtualisation enables IT to provide employees with access to applications or desktops relatively simply, when compared to the traditional method of full desktop provisioning. Additionally, IT can virtualise a desktop environment and enable workers to run the new virtual machine on their previously provisioned machine. At one insurance company, the

employees of a newly acquired organisation were all up and running within two days, thanks to client virtualisation, as opposed to the six weeks it would have taken with physical desktops.

- **More easily support third-party contractors and unmanaged workers.** Before client virtualisation, IT professionals had three choices when it came to providing access to contractors: 1) provision them with a full PC; 2) provision them with access to corporate resources using a virtual private network or 3) require that contractors use their own machines. None of these options were ideal. With client virtualisation, there are a number of ways to provide unmanaged workers with secure, managed access to corporate resources. For example, using desktop virtualisation, organisations can create a virtual image and allow contractors to run it on unmanaged machines. This allows IT to fully manage and secure the corporate image while it runs on an unmanaged device. Likewise, IT can provide a hosted environment that contractors can access from any device, while they are under contract with the organisation.
- **Building out business continuity and disaster recovery plans.** Client virtualisation should be part of your organisation's business continuity and disaster recovery plans. Why? Because it allows workers to remotely access what they need to continue working, with minimal interruption. The majority of workers will have the ability to work from home or from any other location (using any device) while still having access to the applications they need to do their job. For example, one financial services firm was able to maintain productivity for its day traders when a water pipe burst in its New York headquarters. Traders were able to go home or relocate to a standby facility and resume using their desktops with the same applications and sessions still open. They only lost an hour of productivity instead of a day or more.

Figure 7**Security, Cost And Manageability Are The Main Drivers For Desktop Virtualisation**

Base: 476 global enterprise IT decision-makers, multiple answers accepted

Source: A commissioned study conducted by Forrester Consulting on behalf of Dimension Data, August 2011

A Number Of Challenges Remain, Particularly Regarding Mobile Immaturity And Business Prioritisation Issues

Organisations are still grappling with the following challenges:

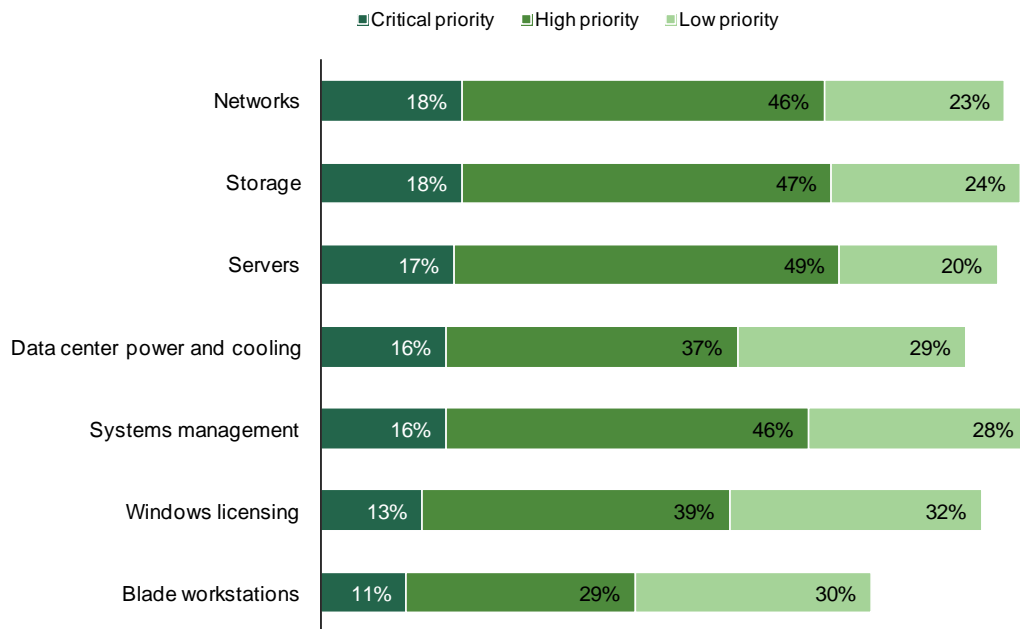
- Project prioritisation issues and lack of executive sponsorship.** Today’s key IT priorities include improving security, business continuity and disaster recovery, data centre consolidation and server virtualisation. Client virtualisation doesn’t always make the top of the list. And because client virtualisation brings together traditionally isolated roles within IT, organisations often lack an executive sponsor to break down political barriers and delegate tasks to the client virtualisation project team. The study found that nearly 40% of the organisations are overcoming this issue by assigning enterprise architecture professionals to lead these initiatives, as opposed to delegating them to the data centre or desktop teams.
- High back-end infrastructure costs and ever-present OS licensing challenges.** Client virtualisation technologies enable heterogeneous environments, but some short-term challenges remain. As organisations deploy and manage their environments, IT decision-makers face challenges associated with driver model updates, scaling unified communications within virtual machines, measuring and optimising audio and video quality of service, supporting remote printing, overcoming management complexity of hybrid environments,

server thrashing associated with boot storms, and the ever-present OS licensing challenges that require close collaboration with sourcing and vendor management counterparts (see Figure 8).

Figure 8

Investment For Virtualisation Focuses On Core Network Features

“Which of the following software and infrastructure domains will your company invest in over the next 12 to 18 months in order to support your application and/or desktop virtualisation deployments?”



Base: 485 global enterprise IT decision-makers

Source: A commissioned study conducted by Forrester Consulting on behalf of Dimension Data, August 2011

- An isolated approach, poor project team co-ordination, and an internal shortage of skill sets.** Client virtualisation initiatives require cross-team and cross-technology collaboration. Unfortunately, most virtual desktop projects are carried out in an isolated fashion by either the data centre team or the desktop team. Typically, when data centre teams lead these initiatives, they first seek to leverage existing hypervisor technology skills and then try to make the data centre elements of the environment as secure and easy to manage as possible, even if their decisions will impact end-user accessibility, or result in a less useful service. How well will the client virtualisation solution perform on the network? How will end users request access to new environments? How will the client pieces be rolled out and updated globally? These are considered someone else’s problem to solve. When desktop teams lead, they tend to think about end-user experience and access — which is correct — as well as how to manage the virtual desktops across widely distributed geographies. However, they usually fail to consider critical data centre issues, for example, how server capacity will be

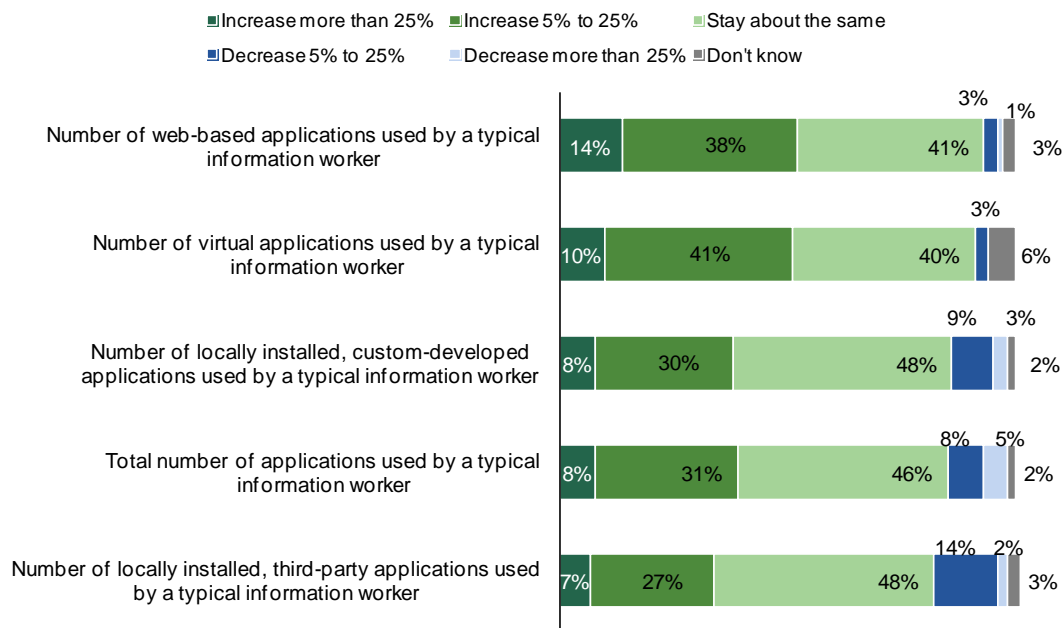
monitored and expanded, how network segments need to be routed for roaming users as well as data backup and recovery needs. To compound the problem, oftentimes critical infrastructure teams such as networking and storage are either not consulted at all or, if they are consulted, their advice isn't acted upon due to schedule or resource constraints. This makes it far more difficult for them to plan and deliver an optimised infrastructure to support client virtualisation initiatives.

- A lack of governance over application library and the pervasiveness of rogue applications.** One of the first steps organisations need to take in the preparation for OS migration is to assess the state of the application ecosystem. This usually entails inventorying applications, tracking down application owners, tiering applications, testing for compatibility, and subsequently remediating applications via retirement, upgrading, recoding, shimming and virtualising. Historically, IT had to give full local administrative rights to a larger percentage of users than perhaps they would have preferred due to limitations in the OS. This enabled users to introduce many rogue, or unmanaged, applications that the business now relies on. According to the study, organisations knowingly support an average of 314 applications worldwide across a mix of delivery architectures (see Figure 9). And keep in mind that these figures don't include the rogue and unmanaged applications that IT doesn't yet govern.

Figure 9

Web And Virtual Applications Will See A Rise In Deployment Over The Next Two Years

“How do you expect the number of end-user applications used on a typical information worker’s PC to change in the next two years?”



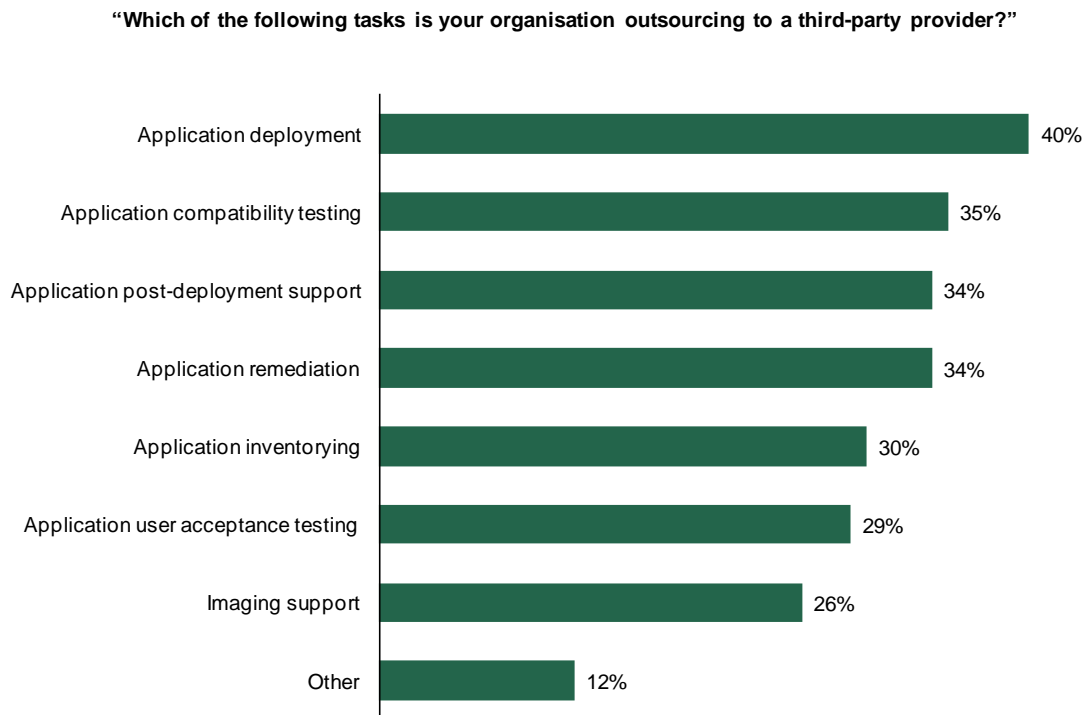
Base: 546 global enterprise IT decision-makers

Source: A commissioned study conducted by Forrester Consulting on behalf of Dimension Data, August 2011

- Overcoming on-premise and web application compatibility issues.** IT managers must conduct an application inventory to identify all the applications that need to be governed by IT. IT managers must also test applications in a nonproduction test laboratory. We recommend considering the impact a new OS has on custom-developed applications in addition to off-the-shelf or third-party applications and whether their hardware and device drivers are compatible. IT managers often overlook web-based applications when evaluating their readiness for an OS migration and all too frequently underestimate web browsers as a barrier to upgrading. In fact, the study found that approximately 55% of locally installed third-party applications, 73% of locally installed custom-developed applications, and 74% of web applications will require some remediation to run on new OSs and web browsers. Organisations are embracing application virtualisation and managed services to overcome these application compatibility issues (see Figure 10).

Figure 10

Use Of Third Parties Is High For Application Deployment



Base: 546 global enterprise IT decision-makers, multiple answers accepted

Source: A commissioned study conducted by Forrester Consulting on behalf of Dimension Data, August 2011

KEY RECOMMENDATIONS FOR MAKING STRATEGIC CLIENT VIRTUALISATION INVESTMENTS

IT managers should start with a five-step approach to striking the right balance between enabling business productivity without compromising security, manageability, and cost:

- **Embrace desktop and application virtualisation: It's here and it's mature.** Client virtualisation can help IT managers bring a measure of control to an increasingly chaotic environment while not stifling employee flexibility and innovation. By leveraging these emerging technology tools, IT can support user choice and manage the essentials of the consumerisation of IT. In parallel, organisations must aggressively upgrade users to modern desktop environments to reduce costs, maximise productivity, and improve business efficiency and customer satisfaction.
- **Build a collaborative client virtualisation team.** Client virtualisation brings together traditionally isolated roles across a mix of IT functions and business decision-maker roles. The core team across IT should include desktop, server, storage, network and systems management architects; they all have a role to serve in the strategy and design of the infrastructure and ongoing operations. But the core team should also benefit from the inclusion of application development, security and risk, and content and collaboration professionals, and from the leadership of enterprise architects who focus specifically on end-user computing. As data and processing shift from the endpoint to the data centre and public cloud, staffing ratios will also be affected — for the better. IT executives should resist the temptation to downsize desktop and help desk engineers because patch management is more effective and help desk request volumes will decline. Rather, reassign senior managers to tackle more strategic projects and take on new investments. Client virtualisation also opens the door to better IT and business collaboration as IT deepens its engagement with line of business managers to ensure they have the input they deserve into future technology requirements and expansion of capabilities.
- **Tie virtualisation investments into OS migration plan.** Decide which applications should be retired, upgraded, shimmed, recoded, or virtualised; IT managers must work hand-in-hand with their application owners within the business. Organisations should centrally manage the user acceptance testing, which should be done by application users themselves. While the continued shift to web-based and virtual applications will lower complexity over the long term, the study found that most organisations need six to 18 months to complete the application compatibility testing and remediation processes.
- **Prepare the application ecosystem for the physical to virtual (P2V) shift.** IT managers should start by scanning their networks and discovering applications that reside on corporate PCs. Incomplete lists can unexpectedly delay migration plans upon discovery. Centralised IT administrators should be tasked with removing applications with overlapping functions and engaging application owners as necessary. Organisations must also plan for extending applications to alternate OSs for various devices. This is where application virtualisation really benefits IT's responsiveness to the business and also saves the time and complexity associated with recoding applications from the ground up for native platform support.
- **Embrace desktop and virtualisation services to accelerate planning and deployment.** Tools and managed services are available that can test applications for compatibility. The optimal approach is to test in a real-world environment with a production-ready image running the desired OS. After testing on-premises, web-based and virtual applications, administrators can assign green, amber or red status to applications based on whether the application is natively compatible; not natively compatible but there's a known workaround, such as shimming or repackaging; or not natively compatible and there's no known workaround, meaning the application is a candidate for retirement, replacement, redevelopment, or virtualisation. Completing the migration on schedule requires understanding the potential, making informed decisions, laying the path for success, and executing with minimal disruption. Half of the organisations surveyed will leverage third-party assessment and migration/deployment managed services and approximately one-third of the overall migration budget will go to vendors with strong

partnerships to OS providers, extensive expertise and experience, and services for any and all phases of the transition.

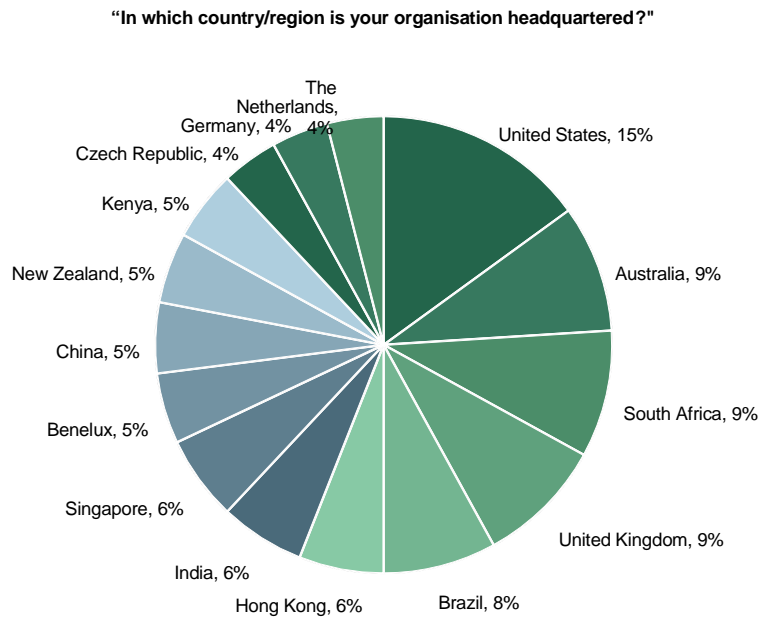
Appendix A: Methodology

In this study, Forrester conducted an online survey of 546 organisations across all industries in Australia, Belgium and Luxembourg, Brazil, China, Czech Republic, Germany, Hong Kong, India, Kenya, Netherlands, New Zealand, Singapore, South Africa, United Kingdom, and the United States of America to evaluate the commercial opportunity of desktop and application virtualisation and to establish current knowledge in the marketplace to determine key bottle necks and potential next steps. The online survey was enriched using data from 10 follow-up phone interviews. Survey participants included decision-makers in managerial roles and above for enterprise organisations (more than 1,000 employees in developed economies and more than 500 employees in developing economies). Questions provided to the participants asked, “Which of the following initiatives are among your IT/IS organisation’s major technology-related priorities over the next 12 to 18 months?”, “How is/did your organisation deploying/deploy Windows 7?”, “Is implementing or expanding use of desktop and/or application virtualisation likely to be one of your organisation’s top IT priorities over the next 12 to 24 months?”, and “Which features are driving your firm’s interest in application[/desktop] virtualisation?”. Respondents were offered access to the published paper and a complimentary Forrester report as a token of thanks for time spent on the survey. The study began in July 2011 and was completed in August 2011.

Appendix B: Demographics

Figure 1

Country of origin

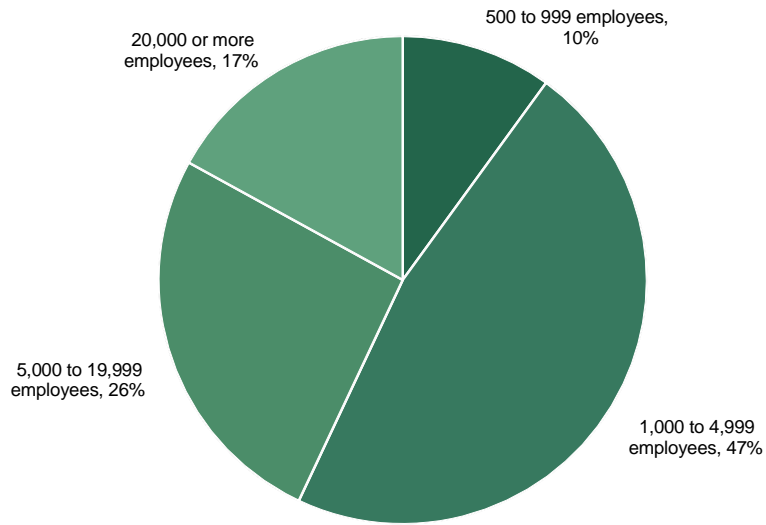


Base: 546 global enterprise IT decision-makers

Source: A commissioned study conducted by Forrester Consulting on behalf of Dimension Data, August 2011

Figure 2
Company size

“Using your best estimate, how many employees work for your firm/organisation worldwide ?”



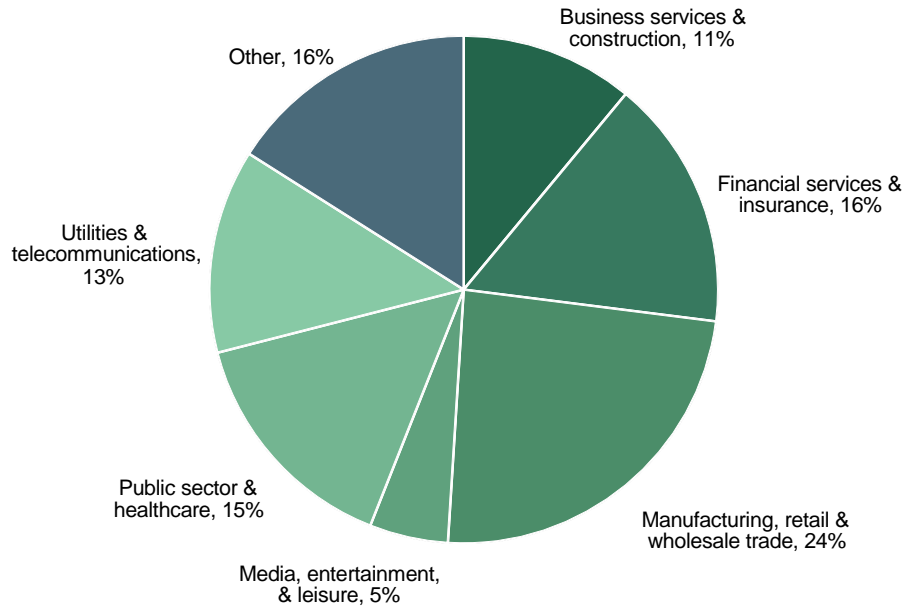
Base: 546 global enterprise IT decision-makers

Source: A commissioned study conducted by Forrester Consulting on behalf of Dimension Data, August 2011

Figure 3

Respondent industry

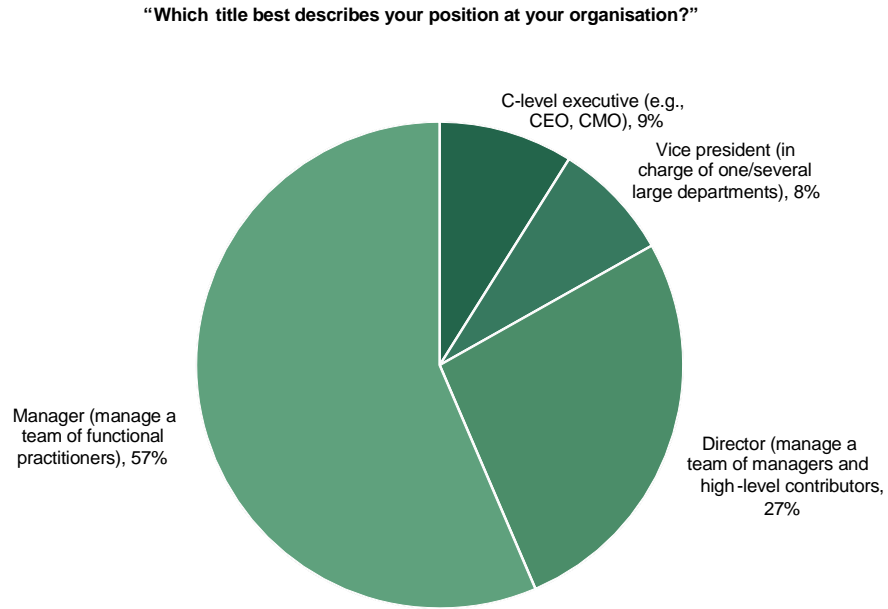
“Which of the following best describes the industry to which your organisation belongs”



Base: 546 global enterprise IT decision-makers

Source: A commissioned study conducted by Forrester Consulting on behalf of Dimension Data, August 2011

Figure 4
Respondent job title



Base: 546 global enterprise IT decision-makers

Source: A commissioned study conducted by Forrester Consulting on behalf of Dimension Data, August 2011
