

# Desktop Virtualization: Implementing the Workplace of the Future, Today

A Market Insight by Frost & Sullivan in collaboration with Fujitsu

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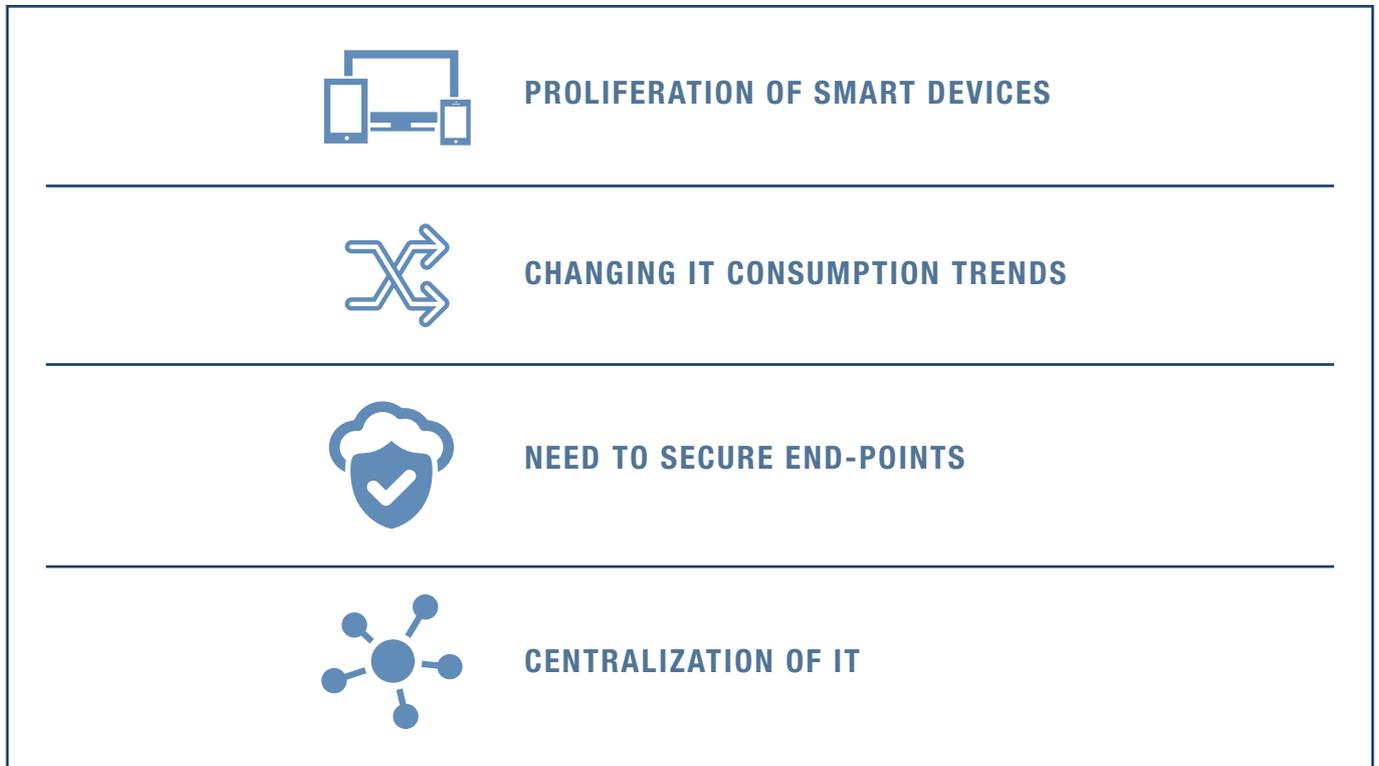
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# WORKPLACE OF THE FUTURE

The workplace of today is transforming the way employees carry out their daily activities. Enterprises are moving beyond being desktop-centric to a multi-device anywhere, anytime workplace. Employees today take electronic notes, collaborate using social media and video-conference either on their tablet PCs or via HD conference rooms.

Four critical factors drive these changes: smart devices, changing information technology (IT) consumption trends, security requirements, and centralization of the IT infrastructure.

Figure 1: Factors Driving Evolution of the Workplace



Source: Frost & Sullivan



## PROLIFERATION OF SMART DEVICES

The proliferation of smartphones, tablets and wearables poses significant management and security challenges. These days, IT departments need to support a greater array of devices and operating environments than ever before to satisfy employees' demand for anywhere, anytime access to their workplace.



## CHANGING IT CONSUMPTION TRENDS

Increasing adoption of cloud computing and social media is shifting control away from IT departments and reinforcing security concerns. Organizational data is now increasingly stored outside the corporate network and shared in new ways, this gives rise to Shadow IT<sup>1</sup> services. Likewise social media, while an excellent collaborative tool, also raises new challenges for the security and privacy of sensitive information.



## NEED TO SECURE END-POINTS

With an increase in vulnerabilities penetrating end-points, organizations are now moving towards virtualized environments, reducing the perimeter of exposure as information is kept within a fortified data center as opposed to a home drive on a traditional end-user device.



## CENTRALIZATION OF IT

With highly virtualized and cloud-based environments expected to dominate the future, the centralization of IT becomes inevitable.

The growing computing power in the hands of end users is creating new pressure points for IT departments in areas such as regulatory compliance, Intellectual Property (IP), business agility, maintenance costs and productivity. This Whitepaper analyzes how virtual desktops can help to alleviate the challenges for IT departments to facilitate the workplace of the future, today.

<sup>1</sup> Shadow IT refers to IT systems and solutions built and used inside organizations without organizational or IT team approval.

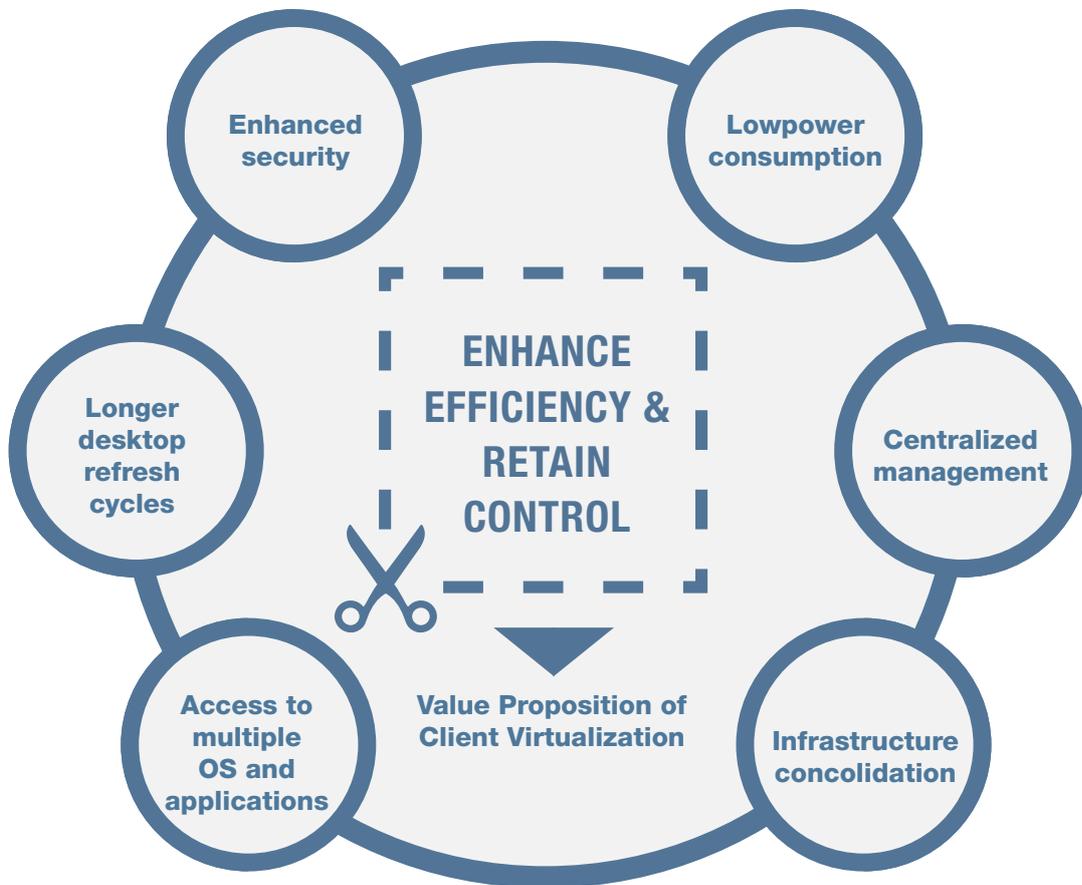
## WHAT IS DESKTOP VIRTUALIZATION?

In general, IT departments manage enterprise end-point devices by providing standardized hardware and software to employees. While this approach has helped to reduce the overall cost of implementation and management, it is fast becoming outdated. Employees today demand unprecedented levels of flexibility; Bring Your Own Device (BYOD) is becoming the norm in most enterprises with more than 60%<sup>2</sup> of enterprises in developed economies embracing this policy. As a result, enterprise IT is increasingly resorting to desktop virtualization as a way to offer employees the flexibility they need while maintaining the same level of control and security.

Frost & Sullivan defines Desktop Virtualization as “Technology that equips the end user with a full-fledged virtual operating environment on their desktops, laptops, mobile phones or any other device that lacks the space and sophistication of a computer. Virtual desktops hide the physical existence of the actual desktop by offering virtual instances of desktops to the user.”

Desktop virtualization offers a strong value proposition for enterprises that require a solution to meet the challenges of the new IT landscape.

Figure 2: Value Proposition of Desktop Virtualization



Source: Frost & Sullivan

<sup>2</sup> Source: Frost & Sullivan research

The desktop virtualization value proposition offers the following business benefits for enterprises:

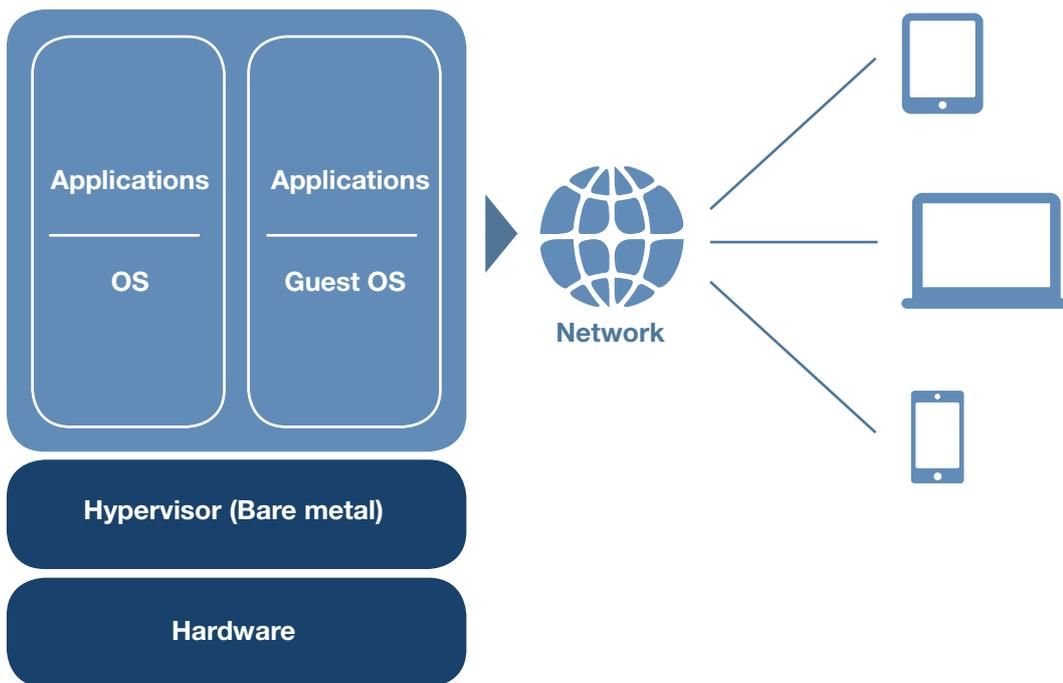
- Helps to reduce energy consumption, cooling costs and replacement rates that result in lower cost of ownership and higher return on investment.
- Centralizes control of hardware, software, and applications that leads to increased utilization levels and lower management costs.
- Enhances security, auditing, and other compliance from a central point of contact.
- Provides a wide range of operating systems and applications without the need to install individual desktops.

While the desktop virtualization market is still at an early stage, it is witnessing strong growth momentum. Enterprises are starting to realize the importance of client virtualization to manage the complex end-point environment of today. According to Frost & Sullivan, the strong adoption is expected to drive market growth with spending on desktop virtualization projected to exceed USD8 billion by 2017, growing at just under 40% per annum from 2014 to 2017.

Frost & Sullivan identifies two forms of desktop virtualization: local and remote desktop virtualization. Under local desktop virtualization, the hypervisor is set up on the client hardware and uses either direct hardware virtualization or an OS-based virtualization. However, local desktop virtualization has yet to achieve significant enterprise adoption with limited use cases.

On the other hand, remote desktop virtualization is seeing greater adoption among large enterprises across the world. Under remote desktop virtualization, or Virtual Desktop Infrastructure (VDI) as it is commonly known, the hypervisor sits on the server to host multiple unique and isolated client operating systems on a single server or group of servers in the data center environment. The virtual desktops are delivered to end users' devices via the network.

Figure 3: Remote Desktop Virtualization or Virtual Desktop Infrastructure (VDI)



Source: Frost & Sullivan

Another virtualization model that is becoming highly prevalent across the globe, and perhaps witnessing higher adoption than VDI, is application virtualization. Application virtualization involves running application software from a remote server eliminating the need for the user's computer where the application resides. This isolates the application from the local operating system, resulting in secure, remote access to the application from any place as any changes made on the target machine will not be reflected on the local machine. This offers significant cost-savings on hardware and provides the ability to use existing hardware optimally. It also provides a solution to incompatibility issues of an application with the underlying OS and secure execution of an application.

## VDI DEPLOYMENT MODELS

As VDI is not a one-size-fits-all approach, it is essential to understand its different forms and identify the most suitable one for your organization. Enterprises have the choice to run the VDI solution within their data center or opt for a hosted model offered by service providers. The deployment models<sup>3</sup> are outlined below:

- **In-house VDI:** Mostly adopted by large enterprises, this is the most prevalent form of virtual desktop services. Solution providers continue to develop innovative security offerings for virtual desktops with significant efforts being invested on how to reduce the costly hardware set-up required for deploying virtual desktops. This deployment allows enterprises complete control over software, hardware, and data. That stated, small and mid-sized firms do not hesitate implementing an in-house VDI model due to initial set-up costs, deployment complexities, and management skills required.
- **Desktop as a Service:** Several service providers offer virtual desktops as a managed offering that require lower initial set-up costs, as there is no need for a major server and storage infrastructure from the user and is less complex to deploy and manage. Virtual desktops can be accessed from either the Internet or via a private network. Although there is scope for personalization, user experience is rather limited due to poor streaming of multimedia content. However, technologies supporting high-definition content and more efficient processing are helping to overcome this challenge. Security and loss of control continue to be major stumbling blocks for this delivery model as most enterprises believe that an in-house solution is more secure than one hosted by a third-party. More recently, service providers and solution vendors have introduced cloud-based VDI solutions where initial set-up cost is minimized with cloud configuration. While security and data sovereignty remains a critical concern for cloud-based solutions, however, with high interest and innovation in this area, these limitations are likely to be addressed in the near future. In fact, there is a strong growth momentum for DaaS in the US. In a recent Frost & Sullivan survey<sup>4</sup> of US businesses, 55% of respondents stated that they are using cloud-based desktop virtualization.

<sup>3</sup> Deployment models are applicable only for remote virtualization. Local virtualization can only be performed on the client device.

<sup>4</sup> Source: Frost & Sullivan's 5<sup>th</sup> Annual Cloud User Survey of US-based IT Decision-Makers conducted in 2014 with 401 technology decision-makers participated in the survey.

## EVALUATING THE IMPACT OF VDI

While it has been established that VDI provides immense benefits to enterprises looking to change the way they engage and empower their employees, it is essential for businesses to gain a better understanding of the benefits and potential challenges of VDI implementation. A sound knowledge should help CIOs to make more informed decisions in formulating an effective strategy for workplaces of the future. Frost & Sullivan research with enterprise IT decision-makers highlight the following benefits and concerns with VDI.

### Benefits of VDI Implementation

**Lower Total Cost of Ownership:** By shifting to a VDI environment, enterprises are able to lower their total cost of ownership (TCO) for employee desktops. For example, an organization with 1,000 employees was able to save almost USD1 million or about 20-25% over a 3-year period by moving to Citrix's XenDesktop Platinum Edition. While the cost-savings may be limited at the infrastructure and software layers, they increase exponentially when evaluating time invested in setting up, managing and upgrading traditional desktops. The cost-savings are even higher in the DaaS delivery model where initial investment and management is the responsibility of the service provider or vendor.

**Operational and management challenges associated with the legacy set-up:** With the traditional computer infrastructure installation in any sector, operational issues or helpdesk requests take hours or days to be resolved, negatively affecting employee productivity. VDI allows real-time analysis of faults or issues, and either initiate automated corrective measures or provide IT administrators with proactive information to take the necessary corrective actions.

**Increasingly dynamic business requirements:** The scaling up and down of resources, concurrent access to different versions of the same application, and separate workstations for employees across different shifts are some of the business requirements in many sectors. Virtualized desktops are able to cater to all these requirements at minimal cost.

**Securing a flexible, multi-device environment:** With the proliferation of compact tablets and smartphones, the end user prefers these devices to a bulky laptop. Several users carry secure data in hand against their wishes due to necessity and lack of data mobility. According to industry estimates, nearly half of enterprises have experienced loss of data in a multi-device or a BYOD environment. By implementing VDI, enterprise IT can continue to control data across all devices, either at rest or in motion. Since all enterprise data resides in a central data center, there is no data residing on the end-points.

**Strong momentum for cloud computing:** The rapid growth of cloud computing is a direct driver for VDI adoption, as the emphasis of data processing and storage moves away from end-points and towards the server.

## Challenges with VDI Implementation

**Complex and capital-intensive initial set-up:** In order to generate several virtual desktop instances, a sophisticated infrastructure and software configuration is required. Setting up this infrastructure can be costly, complicated, and require extensive planning and robust hardware and software solutions. This can result in high set-up costs, especially when implementing an in-house VDI deployment model.

**Limited network availability:** Virtual desktops are generated in a central location and transmitted to the end user through existing networks. Virtual desktops require a considerable amount of bandwidth as all the desktops along with the operating environment is virtually loaded and streamed across the network.

**User experience:** Virtual desktops are unable to completely fulfill user expectations like a physical desktop can. Delays, increased operational time, and poor multimedia content streaming could negatively affect the experience, rendering graphics or computationally-extensive tasks. Greater initial investment and technical expertise are needed to overcome these challenges that may not always exist within the enterprise.

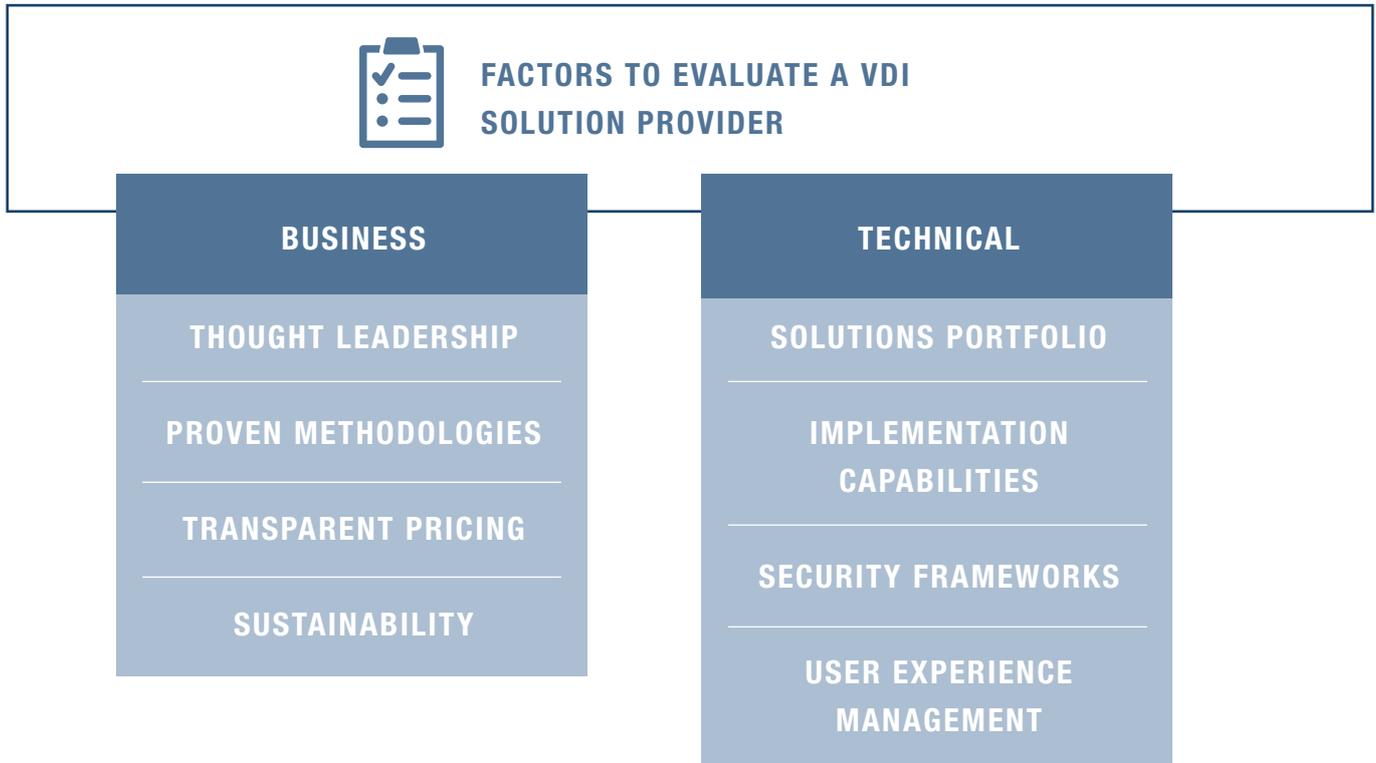
**Limited personalization:** Unlike server virtualization, virtualized desktops need to cater to a variety of users with different requirements. Right from the wallpaper to the applications on the desktop, users have individual preferences. Also, the content and information each user accesses vary daily. For example, a user may access video streaming one day and mostly check email the next.

**Complex security landscape:** With all client data residing on the server and desktops being virtual, the risk of being affected by an external threat increases significantly. Securing virtual environments require a new approach and implementation, such as agent-based security solutions. While security service providers continue to introduce focused solutions for the market segment, their comprehensiveness remains a key concern for enterprises.

## SELECTING THE RIGHT VIRTUAL DESKTOP INFRASTRUCTURE SOLUTION PROVIDER

Once a suitable deployment model is chosen for your enterprise, the next step is to choose the right VDI solution provider. According to Frost & Sullivan's survey of IT decision-makers, eight key factors emerge when evaluating a VDI solution provider which can either be classified under business or technical considerations as illustrated in Figure 4.

Figure 4: Factors to Evaluate a VDI Solution Provider



Source: Frost & Sullivan

### Business Factors

- **Thought Leadership:** With the IT industry evolving at a rapid pace, it is essential to partner with an industry thought-leader for your VDI solution. As a thought leader, the solution provider will be able to incorporate anticipated changes in the workplace and provide invaluable insights into managing the move to virtual desktops.
- **Proven Methodologies:** A concrete way to evaluate a solution provider is to look at their past track record to assess their expertise and services. A solution provider that has multiple successes of partnering their customers on this transformative journey will have the edge over newer entrants into the market. Hence, it is essential to cross check claims and promises against actual on-ground delivery.
- **Transparent Pricing:** Cost is a factor that is paramount in evaluating a shift to virtual desktops and selecting the right solution provider. It is essential to understand costs holistically and engage a provider that offers transparent pricing. This will enable the client to manage project expectations and costs better. Moreover, it prevents unexpected costs, for example, a significant spike in bandwidth requirements that may mandate increased expenditure.
- **Sustainability:** Decision makers need to carefully examine the solution provider’s long-term sustainability and financial stability, especially when engaging new market entrants. The management of virtual desktops requires new skill sets that may not be available in all enterprises. Furthermore, the viability of the solution over the long-term is essential to ensure implementation success.

## Technical Factors

- **Solutions Portfolio:** Desktop virtualization is an enterprise-wide activity and requires alignment across multiple technologies. Coordinating these domains and putting together a solution from multiple vendors creates challenges at various levels such as integration, compatibility and lock-in. Enterprises need to choose a solution provider that is able to assemble a solution that meets the business and technological requirements of the enterprise in the long run. Therefore, it is essential to select a service provider that can offer the entire value chain of offerings from the underlying hardware to the software management instead of a piecemeal-based solution.
- **Implementation Capabilities:** As each enterprise is different, their requirements and pace of change are also unique. This requires the solution provider to be flexible in managing the solution implementation. The solution provider should not only be able to tailor their offering according to the implementation stage, but also define the pace of implementation in line with the enterprise's ability to integrate new technology. Above all, the solution provider should be able to manage the end-to-end lifecycle of the transformation to virtual desktops.
- **Security Frameworks:** The implementation of a centralized desktop infrastructure does enhance security and privacy. However, enterprises need to be cognizant of managing the security of the virtualization platform and data at rest and in motion. For example, with workplaces now residing in the data center, it is essential to separate the underlying infrastructure from the one hosting mission-critical applications to help isolate any threats. While traditional security challenges such as patching and anti-malware do not go away, they do become easier to manage due to centralization. A service provider that clearly understands the changing security postures with the centralization of workplaces will be able to manage the enterprise security framework better and provide comprehensive protection.
- **User Experience Management:** With the entrance of Millennials in the workforce, collaboration and social media are becoming increasingly embedded in the workplaces of today. Employees expect a richer user experience on any device, anywhere, including access to all applications, content and rich media collaboration. What's more, they follow the 3-second rule where an application should respond within that brief timeframe to meet their performance expectations. Traditionally, desktop virtualization has faced challenges in supporting mobile and BYOD devices and providing high-quality communications, such as high-definition video. The solution provider needs to plan a comprehensive workplace experience that can be delivered to a broad range of fixed and mobile devices, without any compromise to the end user experience.

The factors above may be adapted to your enterprise's VDI solution provider selection guidelines. Ultimately, the chosen solution provider should be able to eliminate performance bottlenecks successfully, ensure end user experience and reduce clutter and complexity in managing workplaces.

## FUJITSU'S VALUE PROPOSITION AS A VIRTUAL DESKTOP SOLUTION PROVIDER

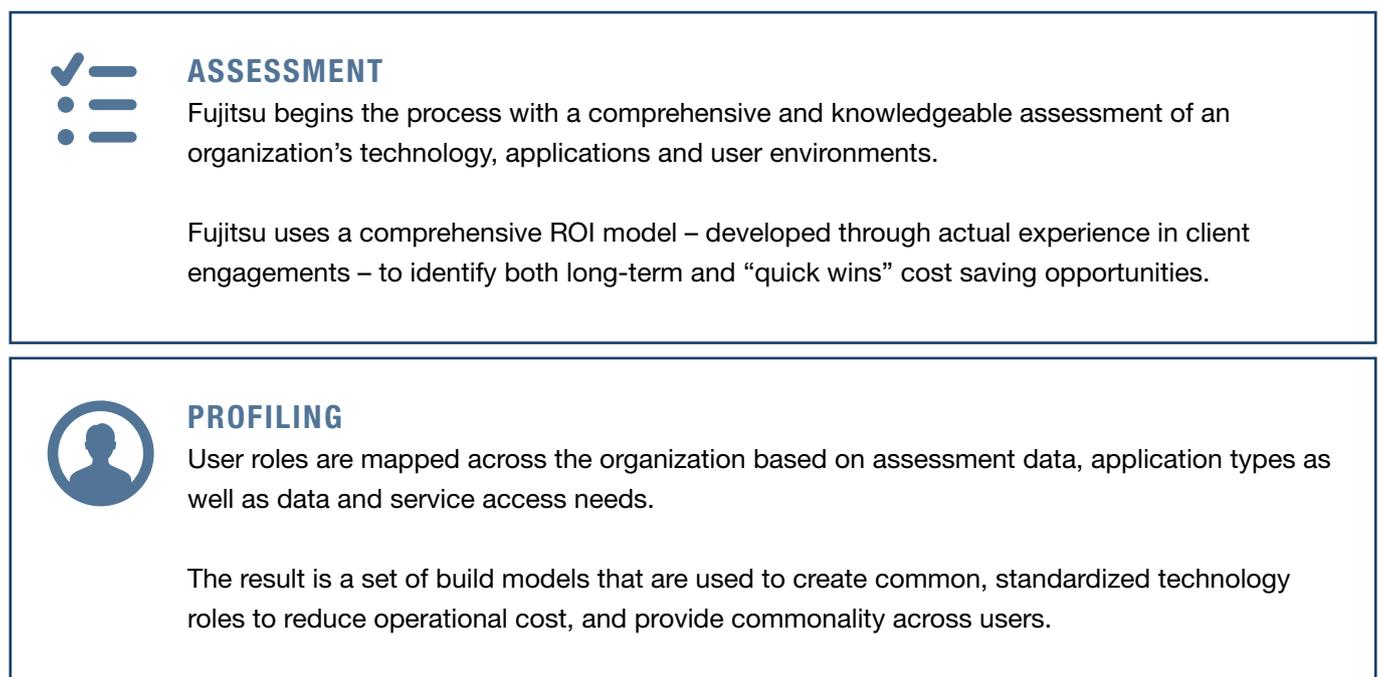
As a leading provider of IT services and solutions across the globe, Fujitsu envisions a future where human-centric ICT can help inspire a more intelligent society, a better environment for people and a better place to conduct business, creating a sustainable place to live and prosper.

FUJITSU Mobile Initiative is the latest of Fujitsu's ongoing efforts to leverage our vertical integration and customization capabilities to respond to the diverse mobile technology needs of customers and society. Through this initiative, Fujitsu will deliver customers ideal mobile solutions by putting in place a structure that encompasses the company's comprehensive lineup, ranging from mobile devices and network technologies, to security and mobile communication platforms and applications, together with its mobile integration and operational services that are backed by its long track record.

FUJITSU Workplace Anywhere value proposition is a blended managed workplace service that provides enterprise customers complete control and flexibility to end-points in a manner of their choosing without compromising on performance, security, control and costs. Fujitsu is committed towards delivering managed infrastructure services that enable employees to work productively, anytime and anywhere they choose. The service covers all key essential of a workplace solution from an end-to-end perspective.

Fujitsu offers a broad portfolio of workplace solutions to meet the differing needs of customers. It believes that "one size does not fit all" and hence, its extensive portfolio enables the company to handle any end-user service. This includes every aspect of the desktop lifecycle – from procuring and managing thick-and-thin clients, delivering hosted applications and virtual desktops, supplying cloud-based enterprise mobility services, providing managed print services, desk-side support and service desk services, to the responsible disposal or redeployment of technology at the end-of-life stage. Fujitsu's approach towards desktop virtualization engagements follows a 4-step process:

Figure 5: Fujitsu's Approach to Desktop Virtualization Engagements





### USER ENGAGEMENT

As the move to virtual desktops can a huge shift for many employees, Fujitsu leverages the profile data to provide a positive user experience through relevant user training and support.



### PLANNING

Fujitsu creates a comprehensive, informed delivery plan that enables enterprises to realize cost-savings in a short time-frame and at minimal risk to the organization.

*Source: Frost & Sullivan*

Fujitsu's clearly-defined approach provides the flexibility and agility to tailor desktop virtualization solutions to meet the unique needs of enterprises. Today, the company is responsible for managing approximately 5 million desktop devices globally, including 2.9 million across Europe – and is the number one desktop service supplier to the UK Government. In addition, Fujitsu is a leading global systems integrator for desktop virtualization projects, delivering some of the largest and most complex desktop transformations as Citrix's number one certified solutions integrator. A clear business case drives these projects providing business agility, supported by the requirement to reduce the costs of managing the end user environment. Overall, Fujitsu services save a typical customer up to 30% of their service costs. With the latest innovations around cloud-based "as a service", it expects enterprises to save up to 40%.

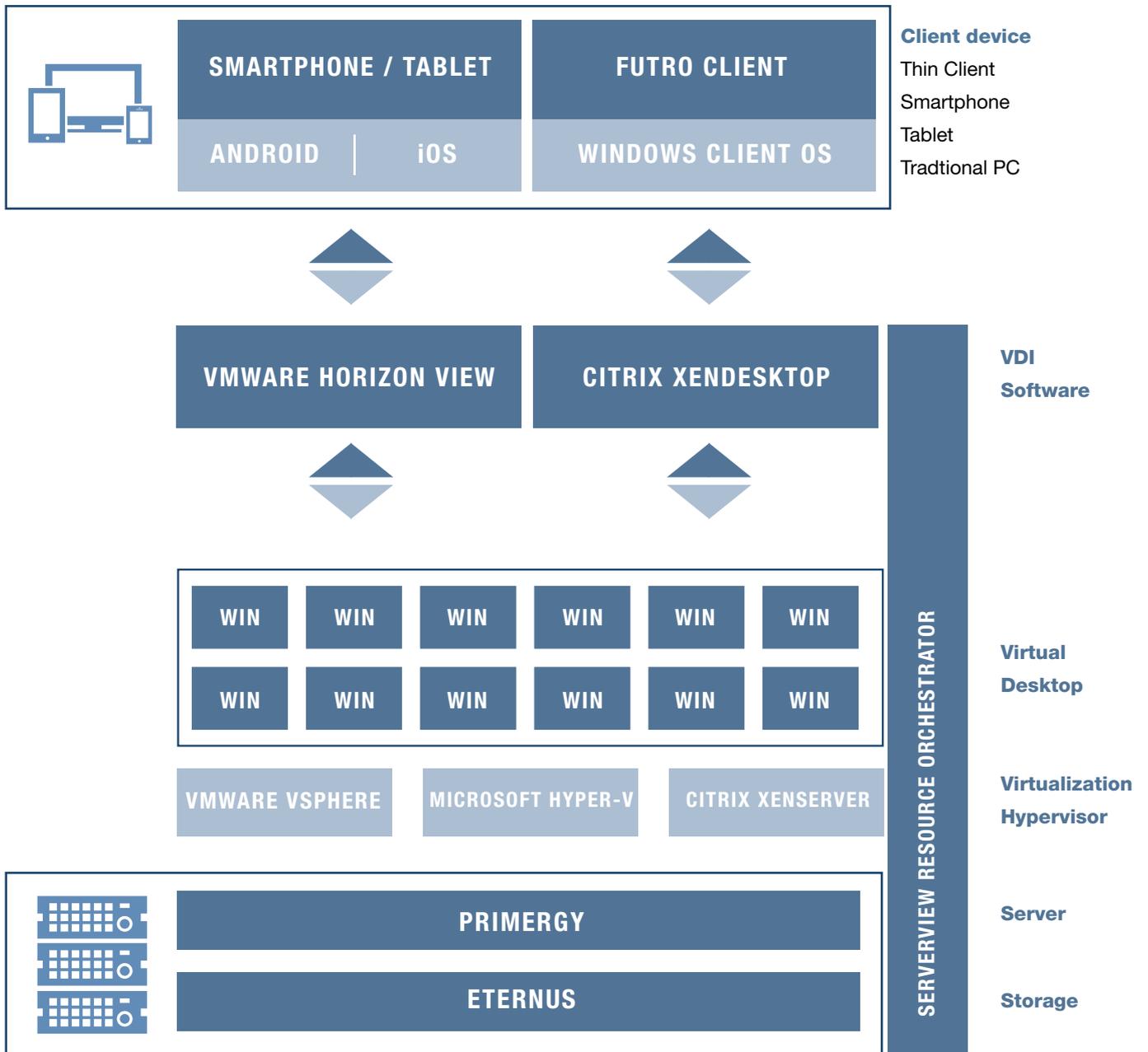
## The Fujitsu Desktop Virtualization Solutions

Based on its vast experience in creating and implementing virtual desktops for a number of clients across the globe, Fujitsu has established two desktop virtualization offerings: the Fujitsu VDI Solution for Enterprise and Fujitsu Virtual Client Services (VCS). While the former is suitable for customers looking to deploy an in-house VDI solution, the latter is targeted at customers looking to implement a flexible solution that leverages on Fujitsu's managed infrastructure services, business applications services, and an array of enterprise products. Both offerings have their unique benefits and can be implemented in varying business environments.

### Fujitsu VDI Solution for Enterprise

The Fujitsu VDI Solution for Enterprise is a packaged solution that delivers VDI benefits with a rich client user experience. With scalable VDI bundles, it is easier for companies to make the switch to a virtual desktop environment. The solutions offer users wider flexibility and allow an enterprise to run any application in the environment. At the same time, the template-based deployment solutions provide IT administrators the tools to centrally manage and virtualize the desktop and applications in a secure and efficient manner.

Figure 6: Fujitsu VDI Solution for Enterprise



Source: Fujitsu

Key features of the Fujitsu VDI Solution for Enterprise include:

- **Substantial solutions expertise** – Leveraging on its systems capabilities and proven processes, Fujitsu develops and implements high-quality solutions for multiple enterprises of varying sizes across the globe. Its solutions have been tested in partner environments and demonstrate strong performance levels against benchmarks.
- **Deep domain expertise** – Fujitsu brings its substantial experience of working with VDI solutions from multiple vendors such as VMware and Citrix, and an in-depth knowledge of the hardware that enables desktop virtualization. By incorporating its domain expertise and hardware capabilities into the solution, the company is able to add significant functionalities to the solution.
- **Enable cloud-based solution** – By enabling a cloud-based solution, Fujitsu provides enterprises with the ability to pool together resources to ensure better resource utilization; provide billing data for service charge; and ease of operation and management.

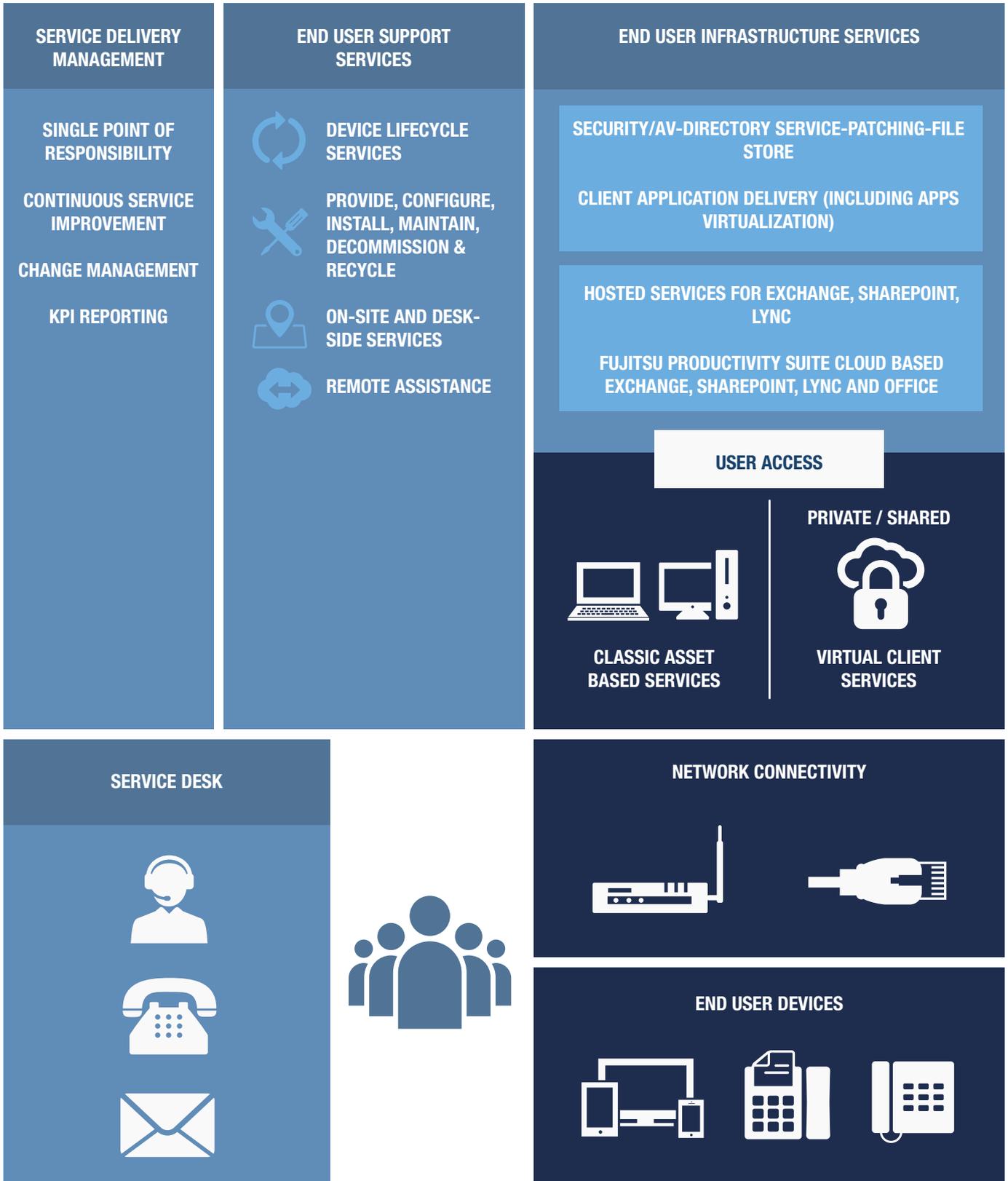
Apart from the benefits above, another point of differentiation for the Fujitsu VDI solution is software expertise. Fujitsu's ServerView® Resource Orchestrator Cloud Edition (ROR CE) is a cloud management platform that enhances the lifecycle efficiency of virtual desktops. Some of the main advantages of ROR CE working in tandem with the VDI solution include:

- Reduction of deployment time by up to 40%.
- Easier management of the VDI environment through a graphical portal which provides a unified view of the infrastructure and virtual PCs.
- Enhanced system reliability through resource monitoring and automatic failure prevention.

## Fujitsu Virtual Client Services (VCS) Offering

The Fujitsu VCS Offering is a tailored solution that delivers Hosted Virtual Desktops (HVDs), Hosted Shared Desktops (HSDs), User Virtualization and Application Virtualization through the integration of a series of hardware, software and service elements. These elements work in tandem to deliver a feature-rich environment that accommodates individual users and business objectives based on compute, application, and data requirements. Comparable to Fujitsu's VDI solution, VCS includes unparalleled expertise around solution design and deep domain knowledge; however, it is traditionally delivered with a mix of on-premise and hosted technologies which are entirely managed by Fujitsu.

Figure 7: Components of the Fujitsu VCS Offering



Source: Fujitsu

By offering a managed infrastructure service that blends the above facets of IT, Fujitsu is able to provide several critical benefits to customers, primarily:

Figure 8: Fujitsu Virtual Client Services' Benefits



Source: Fujitsu

Fujitsu is committed to providing a high-quality, unified and secure solution which is platform and device-agnostic. With a combination of desktop virtualization solutions, comprehensive IT services and solutioning capabilities, Fujitsu is firmly establishing itself as a dominant player in the desktop virtualization industry and one that should definitely be on most enterprises' shortlists.

## How Fujitsu’s VDI Solutions Help Customers

### Case Study 1: Schiphol Group

#### Implementing a “New Way of Working”, successfully

#### THE CLIENT

The Schiphol Group is an airport operator and developer of “airport cities”. In the Netherlands, the Group operates four airports: Amsterdam Airport Schiphol, Rotterdam The Hague Airport, Lelystad Airport and Eindhoven Airport. The company runs over 2,300 workstations.

#### FUJITSU’S SOLUTION

Fujitsu was contracted to manage the entire back office and IT Service Desk 24x7, as well as the virtualization of workstations in line with the “New Way of Working”.

#### CLIENT CONSIDERATIONS

The Group was aiming to implement a “New Way of Working” based on its employee needs and IT environment. The company wanted a completely new IT environment to support more flexible working practices. Elements of the new IT approach would include:

- Employees must be able to work from home with the same accessibility as at the office;
- Flexibility should be increased so that employees can work while on the move;
- Employees should be able to bring digital documents to meetings.

#### KEY BUSINESS BENEFITS

- Cost-savings in terms of office space thanks to flexible workplace; working on the move.
- Increased employee satisfaction.
- A more positive and progressive employer image.
- More attractive employment conditions for prospective new employees.
- Improvement in communication between colleagues due to flexible workplaces.
- More efficient and greener work practices, thanks to the ability to take digital documents to meetings.



#### CLIENT TESTIMONIAL

“At last, I can truly say we are an organization with a modern IT environment. IT supports the flexibility that we need for our business. The ‘New Way of Working’ suddenly seems quite normal!”

**Kees Jans, CIO, Schiphol Group**

Source: Fujitsu

## Case Study 2: Major Japanese Distributor

**Transforming Virtual PC administration through ServerView® Resource Orchestrator Cloud Edition (ROR CE).****BACKGROUND**

The client wanted to reduce costs associated with the management of PC equipment and increase the accessibility of remote access. Despite implementing a VDI solution, the client continued to face high costs of infrastructure management.

**FUJITSU'S SOLUTION**

Fujitsu deployed the ROR CE solution to meet the client's considerations. New capabilities included:

- Automation of operating and maintenance systems.
- Automatic deployment of virtual desktops and set-up for XenDesktop.
- Pre-failure functions to trigger virtual PC migration to other operational servers with zero downtime to PCs.
- Display of physical and virtual server mapping on GUI.

**CLIENT CONSIDERATIONS**

- The client had two key considerations:
- Reduce administrative workload involved with the delivery of virtual desktops.
- In the event of hardware failure:
  - o Virtual desktops should remain operational;
  - o Affected virtual desktop should be swiftly identified.

**KEY BUSINESS BENEFITS**

- One-third reduction in process steps through automation of the virtual desktop creation/XDC and AD server configuration. For example, it took only 6 weeks to introduce thousands of desktops.
- Easier confirmation on status of virtual desktops from the GUI, even for non-dedicated staff.

**CLIENT TESTIMONIAL**

“The provisioning of virtual desktops to employees is much smoother than it used to be. The simple GUI also makes it extremely easy to understand the mapping between the various virtual and physical servers. This ensures the system management is easier and more efficient.”

## THE FINAL WORD

Organizations depend on data, hardware and software assets to run their daily operations. The escalating amount of digital content in enterprises, demand for different applications and operating systems to increase business efficiency, and usage of regulatory and data compliance policies heighten the level of risk and vulnerabilities of digital assets for organizations.

To transform the workplace of today into a dynamic space that is able to adapt to the trends and challenges of the future, organizations need to strike an optimal match between workplace strategy and business requirements. Desktop virtualization enables enterprises to overcome these challenges by providing them with greater flexibility, efficiency, scalability, reduced total cost of ownership and increased return on investments. Enterprises can choose from a wide range of operating systems and applications that can be installed and accessed from a centralized data center which provides highly secure implementation.

As a leading player in the desktop virtualization space with an end-to-end solution value proposition, Fujitsu recognizes that a one-size-fits-all approach does not work for most businesses. To address the unique challenges of enterprises, Fujitsu combines hardware and software capabilities with key desktop virtualization solutions to introduce a plethora of options for end users. Leveraging its extensive experience, diverse talent pool and significant technological expertise, Fujitsu provides customers with tailor-made, future-proof solutions to fit their individual requirements. Frost & Sullivan expects Fujitsu to become a principal player in the desktop virtualization ecosystem due to its systems capabilities, proven processes and extensive implementation expertise to help steer enterprises in implementing the workplace of tomorrow, today.



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Frost & Sullivan, the Growth Partnership Company, works in collaboration with clients to leverage visionary innovation that addresses the global challenges and related growth opportunities that will make or break today's market participants. For more than 50 years, we have been developing growth strategies for the Global 1000, emerging businesses, the public sector and the investment community. Is your organization prepared for the next profound wave of industry convergence, disruptive technologies, increasing competitive intensity, Mega Trends, breakthrough best practices, changing customer dynamics and emerging economies?

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## About Fujitsu

Fujitsu is the leading Japanese information and communication technology (ICT) company offering a full range of technology products, solutions and services. Approximately 170,000 Fujitsu people support customers in more than 100 countries. We use our experience and the power of ICT to shape the future of society with our customers. Fujitsu Limited (TSE:6702) reported consolidated revenues of 4.4 trillion yen (US\$47 billion) for the fiscal year ended March 31, 2013.

For more information, go to [www.fujitsu.com](http://www.fujitsu.com).

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