



## Telecom Firm Cuts Costs, Speeds Provisioning, by Using Desktop Virtualization

### Overview

**Country or Region:** Italy

**Industry:** Telecommunications

### Customer Profile

Telecom Italia is Italy's largest provider of telecommunications services, with more than 71,000 employees and a network of 18.5 million fixed and 30.8 million mobile lines.

### Business Situation

Telecom Italia needed to replace 20,000 desktop computers, reduce IT capital and operating expenses, and simplify technology support for employees and dealers.

### Solution

Telecom Italia is deploying a virtual desktop infrastructure solution based on Windows Server 2008 R2 with Hyper-V and Citrix XenDesktop, by which users access virtual desktops that are hosted in its data center from thin-client computers.

### Benefits

- Saves millions of dollars on desktop hardware and maintenance
- Provisions desktops in one-fifth the time, eases software distribution
- Simplifies infrastructure management
- Improves user productivity, satisfaction

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Carlo Filangieri, Head of IT Infrastructure, Telecom Italia Group

Telecom Italia provides telecommunications services in Italy, Brazil, and Argentina. It wanted to replace 20,000 aging desktop computers used by call center and network operators, and find an easier, cost-effective way to support network-connected employees and dealers. The company implemented a virtual desktop infrastructure (VDI) solution comprising Windows Server 2008 R2 Enterprise with Hyper-V, Microsoft System Center Virtual Machine Manager 2008 R2, and Citrix XenDesktop. It saves millions of dollars annually by eliminating the need for field maintenance and for many employees to have two PCs for security purposes, and by using thin-client computers. This drastically simplifies IT management and improves user productivity. Telecom Italia expects to provision desktops for dealers in one-fifth the time previously required, and to streamline its migration to the Windows 7 operating system.



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## Situation

Telecom Italia, headquartered in Rome, Italy, provides fixed and mobile telecommunications services. Information technology is critical to enabling the delivery of efficient, reliable, and cost-effective services for the company, which realized revenues of €27.16 billion (approximately U.S.\$33.4 billion) in 2009. Nowhere is this more apparent than in the customer-facing operations of the Telecom Italia call center and its 7,000 Italian dealer storefronts.

"The 20,000 computers used by our call center and network operators were mainly more than six years old and performed slowly. In early 2009, we decided that we would need to replace them so that our representatives could provide more responsive service, but we were concerned that doing so would be very expensive," says Carlo Filangieri, Head of IT Infrastructure for Telecom Italia Group. With each new computer priced at about €400 (about U.S.\$491), the €8 million (U.S.\$9.8 million) refresh would be prohibitive.

Cost was also a factor in desktop maintenance, which averaged €180 (about U.S.\$221) per call-center computer every year, largely due to field assistance for hardware and software issues; this cost would remain the same for any replacement computers. The fact that 5,000 employees had two computers each exacerbated the issue. "They used one computer for office automation applications such as Microsoft Office PowerPoint, and the other to run network applications that required a higher level of security. This solution for enhanced security resulted in double maintenance fees, power consumption, and space requirements," Filangieri explains.

Supporting the dealers that sell Telecom Italia services was costly, as well. The company supplied these dealers with computers and software needed to run their telecommunications operations. Telecom Italia spent €300 (approximately U.S.\$368) per year on support for each of the 10,000 desktops that it provided to dealers. "Because our dealers are spread throughout Italy and operate in a fast-moving environment—where shops move, and new ones are established on a regular basis—it was too cumbersome for our IT staff to do on-site visits to troubleshoot computer issues," Filangieri says.

Also, delivering and installing new computers for dealers was time-consuming. It typically took five days from the time that a computer was requested to when it was available for use.

Software distribution was just as challenging. Telecom Italia IT workers deployed software, including application updates and security hotfixes, over the network using Microsoft Systems Management Server 2003 for employees and Microsoft System Center Configuration Manager 2007 R2 for dealers. But because they wanted to be sure that employees and dealers were on their computers when the software was delivered, they waited until the morning, when people would have turned on their devices. "This not only interrupted end-user productivity, but also stressed the network, since all of the updates were happening around the same time, namely when employees start their own PCs. About 10 percent of installations failed because of network or computer problems," Filangieri says.

Telecom Italia needed to find a simple, cost-effective, and reliable way to refresh its call center computers and support its employees and dealers.

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## Solution

In June 2009, Telecom Italia began investigating options for its computer refresh project and support challenges, and decided to explore virtual desktop infrastructure (VDI) solutions. VDI makes it possible for users to access desktops that are running as virtual machines on servers in the data center from thin-client computers, and for IT staff to manage all the virtual machines from a central console. It was a logical solution for structured worker profiles such as Telecom Italia employees and dealers who always work when connected to the network; task workers in the call center who share computers with people on other shifts; and network operators who require a secure solution for accessing data.

"We believed that, by using VDI, we would be able to provision, secure, and support desktops more efficiently, and would save money on field maintenance and on the computers themselves, since thin-client devices are less expensive than rich clients," Filangieri notes.

Telecom Italia noted that it considered Remote Desktop Services but turned to VDI instead. "VDI would guarantee a seamless user experience, limit application compatibility issues, and allow us to accelerate project deployment," says Filangieri. Telecom Italia evaluated an integrated VDI solution with technologies from Microsoft and Citrix Systems, including the Windows Server 2008 R2 Enterprise operating system with Hyper-V; Microsoft System Center Virtual Machine Manager 2008 R2 for centrally provisioning and managing virtual machines; Microsoft System Center Configuration Manager 2007 R2 for updating the infrastructure and virtual desktops; Microsoft System Center Operations Manager 2007 for monitoring status and performance of the virtual

desktop service and delivering enhanced uptime; and Citrix XenDesktop 4.0 for simplifying management of virtual desktops and dynamically delivering to users anywhere. "The Microsoft-Citrix VDI solution is mature and provided a good price/performance value," says Filangieri. "Not only is the solution secure and reliable, but also easy to manage and deploy."

Telecom Italia also found that the Microsoft-Citrix solution would be strong for multimedia applications, with Citrix HDX technology providing a high-definition user experience for virtual desktops. "Citrix XenDesktop with HDX technology enables us deliver virtual desktops to users over our existing network connection efficiently, including multimedia content such as teleconferencing video, which we often use for employee communication," says Pia Abbagnano, Desktop Virtualization Project Manager for Telecom Italia.

The telecommunications company worked with Microsoft Services and Citrix on the implementation for its employees, which began in April 2010. "The Microsoft and Citrix teams worked very well together and provided us with great on-site support. We were extremely satisfied," Filangieri notes. By May 2010, Telecom Italia had deployed 300 virtual desktops that are used by about 350 employees. It expects to deploy another 4,700 virtual desktops, which will be accessed by 14,000 employees, by the end of 2010, and eliminate the need for some employees to require two computers each for security reasons. All 20,000 desktops in the company's refresh initiative will be replaced with virtual desktops by December 2011.

Telecom Italia will begin its VDI implementation for dealers in July 2010 and plans to have 3,500 dealers using the

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solution by December 2010, and all 7,000 dealers using it by March 2011.

At the end of 2010, the Telecom Italia VDI solution will comprise 142 Hyper-V-based virtual machines running on 10 server computers, about 2,500 thin-client computers, and 2,500 of the company’s existing desktop computers. Telecom Italia will no longer need to supply its dealers with computers; instead, the dealers will use their own devices to access the Microsoft-Citrix VDI virtual machines.

### Benefits

By employing a virtual desktop infrastructure, Telecom Italia is significantly reducing the money spent on computer hardware, maintenance, and electricity; accelerating deployment of software and desktop computers while simplifying infrastructure management; and encouraging user productivity.

“The VDI solution will help us save millions of dollars, while enabling us to provide secure resources and support for our employees and dealers in a much more efficient, timely way,” Filangieri says.

### Saves Millions of Dollars on Desktop Hardware and Maintenance

By purchasing 10,000 thin-client computers—instead of rich desktops—by the end of 2010 to refresh its employee computers, Telecom Italia will save €250 (about U.S.\$307) per device, and a total of €2.5 million (about U.S.\$3 million). The company also will realize significant savings in maintenance. “Because we can manage everything centrally, we won’t have to spend money on on-site support for employee computers. That will save about €180 (approximately U.S.\$221) per computer each year,” Filangieri says.

Dealers will be using their own computers, so Telecom Italia pays nothing for field maintenance. “Dealers will maintain their hardware themselves, and we can handle any virtual machine and software support from our data center,” Filangieri adds. As a result, Telecom Italia will no longer spend €300 (U.S.\$368) per year on third-party support for each of the 10,000 desktops that it had supplied to dealers, ultimately saving another €3 million or so (nearly U.S.\$3.7 million) annually.

Telecom Italia will spend less on power consumption, as well. Its thin-client computers require only 8 watts of electricity, compared to the 150 watts used by rich-client devices. “We expect to reduce power-consumption-related costs for our desktop computers by more than 50 percent, even when considering the additional power consumption for the server farm,” says Filangieri.

### Provisions Desktops in One-fifth the Time, Eases Software Distribution

Telecom Italia will be able to provision virtual desktops to new dealers in one-fifth of the time that it took to supply them with new physical computers. Instead of requiring five days, it will take just one day. “Setting up new dealers will be so much easier with the Microsoft-Citrix VDI solution, and dealers will be able to get up and running much faster,” says Abbagnano. “Provisioning a virtual desktop takes just minutes. The rest of the time is needed for communicating with the dealers and creating dealer accounts, including activating their credentials.”

Software distribution, too, is significantly simpler—and more reliable. Instead of pushing applications over the network, Telecom Italia just deploys the software on its server computers using Microsoft System Center Configuration Manager

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2007 R2. This also eliminates the chance of installation failures on the desktop computers. "By using VDI, we achieve 100 percent success with software distribution and we don't stress the network," Abbagnano notes. "It's also easier and more expedient to deliver security hotfixes, since we can apply them immediately to the server computer instead of waiting for a software distribution system to reach remote physical desktops."

#### **Simplifies Infrastructure Management**

Resolving software issues is also easier. For instance, instead of sending a technician to a dealer's site, Telecom Italia IT workers will use System Center Virtual Machine Manager to swap in a virtual machine without leaving the IT office. According to Filangieri, "By centralizing management of virtual machines, we will be able to resolve issues and update client devices with minimal effort."

Security is also improved by the centralization of virtual machines. "Because users connect to a virtual machine hosted in the data center, the applications and data associated with desktops never leave the data center. This helps our organization keep intellectual property secure," Filangieri says. Furthermore, each time users log off, their virtual desktops are refreshed back to the initial, base template. This removes the chance of any viruses that may have infiltrated the system remaining on the hard drive.

Telecom Italia can eliminate the need for 5,000 employees to have two desktop computers each, one of which was dedicated to secure network applications, because those users now can access all of their applications from secure virtual desktops. This will greatly reduce space and support requirements, and decrease costs

associated with power consumption and hardware purchases.

Telecom Italia also expects an easy virtual desktop migration from the Windows XP operating system to the Windows 7 operating system, which is scheduled to begin in July 2010. Without VDI, migrating users would require sending a technician onsite, backing up and restoring each user's data, and then installing and configuring the operating system and applications. "In the past, the Windows 7 migration would have been a slow, costly process, but with VDI, the operating system, applications, and user data are stored centrally in the data center. We could simply change the master virtual desktop image and replicate it to all virtual desktops. Ideally, we could switch users to Windows 7 in one night," Filangieri says.

#### **Improves User Productivity, Satisfaction**

By using VDI, Telecom Italia eliminates the disruptions to users that occurred in the past when software was updated and hotfixes were distributed. "There's no need for users to wait until software is installed on their computers, and no need to reboot," says Filangieri.

VDI also delivers better performance than was possible on the older Telecom Italia computers. "The feedback we've had from employees who are using virtual desktops is that the performance is better than the older PCs. And because thin clients don't emit noise and warm air from fans the way rich desktops do, employees have commented that the working environment is quieter and more comfortable," Filangieri notes.

## For More Information

For more information about Microsoft products and services, call the Microsoft Sales Information Center at (800) 426-9400. In Canada, call the Microsoft Canada Information Centre at (877) 568-2495. Customers in the United States and Canada who are deaf or hard-of-hearing can reach Microsoft text telephone (TTY/TDD) services at (800) 892-5234. Outside the 50 United States and Canada, please contact your local Microsoft subsidiary. To access information using the World Wide Web, go to:

[www.microsoft.com](http://www.microsoft.com)

For more information about Citrix Systems products and services, call (954) 267-3000 or visit the Web site at:

[www.citrix.com](http://www.citrix.com)

For more information about Telecom Italia products and services visit the Web site at:

[www.telecomitalia.com](http://www.telecomitalia.com)

## Microsoft Virtualization

Microsoft virtualization is an end-to-end strategy that can profoundly affect nearly every aspect of the IT infrastructure management lifecycle. It can drive greater efficiencies, flexibility, and cost effectiveness throughout your organization. From accelerating application deployments; to ensuring systems, applications, and data are always available; to taking the hassle out of rebuilding and shutting down servers and desktops for testing and development; to reducing risk, slashing costs, and improving the agility of your entire environment—virtualization has the power to transform your infrastructure, from the data center to the desktop.

For more information about Microsoft virtualization solutions, go to:

[www.microsoft.com/virtualization](http://www.microsoft.com/virtualization)

### Software and Services

- Microsoft-Citrix Virtual Desktop Infrastructure
- Microsoft Server Product Portfolio
  - Windows Server 2008 R2 Enterprise
  - Microsoft System Center Configuration Manager 2007 R2
  - Microsoft System Center Virtual Machine Manager 2008 R2
  - Microsoft System Center Operations Manager 2007

- Technologies
  - Hyper-V
  - Citrix XenDesktop 4.0

### Partners

- Citrix Systems
- Microsoft Services