

Telecommunications white paper

## 5 Ways to Enable Digital Transformation in Telecom

The telecommunications industry is no exception to the widespread trend of digital transformation. With increasingly demanding customers, strict compliance regulations, and complex operational concerns, telecoms are in dire need. At the center of this transformation is data.

The Hyper-Availability of data is the key factor in optimizing operations, staying compliant, meeting the demands of modern customers, and remaining competitive in an evolving market. But outdated legacy tools and processes are struggling to keep up with new technologies and the growing volume, criticality, and sprawl of data. Telecoms require advanced tools that can enable 24.7.365 availability, seamless backup, and quick data recovery, while also meeting strict requirements around data protection and compliance. In the digital age, Hyper-Availability determines the survival and future of telecom companies.



The digital transformation of telecom companies is well underway, bringing with it reduced costs and increased agility—both crucial to helping telecoms stay relevant in a highly competitive environment. But this digital transformation also places a heavy emphasis on ensuring Hyper-Availability of a resource that is growing in volume and criticality: data.

Ensuring data is always available and protected is a challenge compounded by the fact that telecom companies are increasingly virtualizing their data centers and networks. As they do, they're finding that outdated legacy backup and recovery tools are struggling to meet the demands of these new virtual environments. That puts telecom data centers—and the data they house—at risk of unplanned downtime. And few, if any, industries have a lower tolerance for it than telecommunications, because customers have zero patience for downtime.



Customers now have multiple devices consuming telecom services, which produce data that must be transmitted over carrier networks and, in some cases, housed in their data centers.

Telecom companies likewise have stringent security requirements: they must stay compliant with industry regulations covering issues such as protecting customer credit card data, and fulfill data requests regarding national security. A backup and recovery tool that can meet these requirements in a highly virtual environment is essential to remaining compliant.

Telecom firms must take a fresh look at their data management strategy and the solutions they use to support it. They need to consider

the issues coming to the fore, and outline the requirements of backup and recovery tools that can keep their companies Hyper-Available while meeting data protection requirements and compliance mandates.

## Dealing with Growth

At the root of all this change is the proverbial good problem to have: telecom companies are experiencing rapid growth.

That growth comes from a number of factors, beginning with customers who now have multiple devices consuming telecom services. In addition to phones that support voice, data, and video, many users also have tablets and laptops outfitted with network connections, whether wired or cellular. All of these devices produce data that must be transmitted over carrier networks and, in some cases, housed in their data centers.

To maintain a competitive advantage, telecoms are expanding their service offerings and capabilities. A modern firm may offer traditional landlines, IP voice, cellular voice, and data, television, and internet connectivity. Others are getting into the smart home business, offering security services including video monitoring and door control, as well as energy management and water detection services.

Underpinning these systems is the hyper-growth of data. Operations systems depend on critical data to ensure each customer receives prescriptive services delivered without interruption. In addition, data drives billing platforms that ensure customers are billed accurately, including any overage charges and credits. Telecoms rely on customer relationship management (CRM) tools to ensure they reach customers with the ideal offers at the optimum time, all driven by customer data.

## Overcoming Challenges

An industry experiencing such rapid growth will demand that its leaders continue to innovate to stay ahead. With competition comes many challenges. For one, traditional telecom companies that own and operate all of their own infrastructure face challenges from over-the-top (OTT) providers that offer voice, data, and/or video services on top of networks owned by other companies. Without the capital and operational expenses of owning and operating the underlying network, OTT providers can focus all of their resources on delivering services to customers, making them increasingly agile and prone to innovate.

Protecting customer data is another challenge, given not only its importance to effective telecom

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# 35%

How Telecom Companies Can Win in the Digital Revolution  
McKinsey & Company



operations, but also its legal requirements. The telecom industry is heavily regulated and closely monitored, putting the onus on telecom firms to effectively address the following issues:

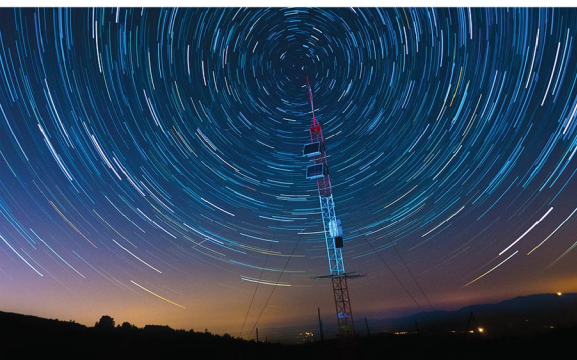
- Retention policies on phone calls and data, which can range from **a few months to several years**
- Compliance with the **Payment Card Industry Data Security Standard (PCI DSS)** for consumer data
- Ensuring they can share data upon request for national security purposes, such as those outlined in the **USA Freedom Act**

## Digitizing for Success

While facing these challenges, telecommunication firms are undergoing a fundamental change: a digital transformation. Landline and mobile voice services now account for less than a third of total traffic, down from 55% in 2010, according to **McKinsey & Company**. During the same period, revenue from data services has risen from 25% of total revenues to 65% today.

Digitization “offers telecom companies an opportunity to rebuild their market positions, reimagine their business systems, and create innovative offerings for customers. Not surprisingly, most executives consider digitization to be one of their top priorities,” McKinsey says. “We calculate that digitization could enable telecom operators to improve their profits by as much as 35%.”

To capitalize on the digital opportunity, telecoms must transform their approach to data management, becoming more efficient, agile, and dependable. Virtualizing servers is one key step on this journey; by increasing utilization, it greatly reduces the number of servers required. It is a key underpinning of cloud computing, and makes possible the sort of automation and agility that McKinsey describes.



Some telecom companies are also adopting network function virtualization (NFV), which reduces the number of necessary network

devices by enabling multiple functions to be delivered via software running on a single server. Similarly, software-defined networking (SDN) allows network control and forwarding functions to be provided in software, making them highly programmable, dynamic, cost-effective, and more easily manageable.

## Availability and Security Best Practices

While the changes triggered by digital transformation bring plenty of undeniable benefits, they also create new challenges when it comes to ensuring reliable, constant access to data.

The problem is that the backup and recovery tools many telecommunications companies use are based on an architecture that dates to the 1980s and 90s, one that is ill-suited to meet the growing demands of today’s highly virtual environments.

Research firm IDC has studied the cost and complexity challenges that such legacy backup infrastructure presents, and has developed **best practices** to ensure Hyper-Availability in an increasingly digital environment.

It starts with a “virtual first” approach to data protection solutions, meaning the offerings should be specifically designed and optimized for virtual environments, including heterogeneous networks.

Companies need to increase their use of automation to deal with growing volumes of data, while maintaining the kind of flexibility and agility that a Hyper-Available data center requires.

IDC also advises companies to modernize their backup infrastructure. Contemporary solutions can help improve performance by meeting more aggressive recovery time objectives (RTOs) and recovery point objectives (RPOs), while improving storage management and data deduplication capabilities. This helps companies adhere to service-level agreements (SLAs), an issue that’s crucial for telecommunications firms.

## Vodafone Adopts a Solution

Vodafone Netherlands faced many of the challenges common to a highly virtualized telecom environment. As its customer base grew, its data tripled. At the same time, the company virtualized its IT environment using VMware vSphere to help automate business operations such as telecommunications delivery, customer support, and billing.

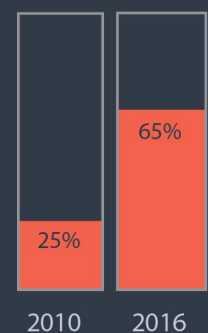
As the infrastructure approached 90% virtualization, the number of virtual machines (VMs) increased to hundreds across multiple



Telecommunications firms are undergoing a fundamental change: a digital transformation. Landline and mobile voice services now account for less than a third of total traffic. Meanwhile, revenue from data services has risen from 25% to 65%.

### Data Service Revenue

As percentage of total revenue



SOURCE: How Telecom Companies Can Win in the Digital Revolution McKinsey & Company, October 2016

data centers. Vodafone's outdated legacy backup and monitoring tools struggled to keep up; backup and recovery processes slowed.

The company implemented a new tool across all its data centers to remedy the situation. Because it was built to handle virtual environments, the tool performs backups 80% faster than Vodafone's legacy solution, and recovery is five times faster. The company now performs daily backups of not only all of its production VMs, but development VMs as well, with critical loads backed up even more frequently.

## Telefónica Finds a Fix

Telefónica Germany was in a similar situation. The company relies on its network management system to keep its network up and running. The system comprises business-critical applications (totaling 300 TB) that run on 600 VMware vSphere VMs. It's vital that the management tool be available 24.7.365, because an outage would affect millions of people and cost hundreds of thousands of euros.

But Telefónica's backup tool couldn't recover VMs fast enough to guarantee full-time availability. So Telefónica, too, deployed a solution that not only backs up the 300TB management

tool on 600 VMs across two data centers, but also replicates VMs between the data centers, providing business continuity.

With the new tool, Telefónica added real-time, automated performance monitoring and reporting across its virtual infrastructure, as well as performance forecasting and capacity planning. Now Telefónica knows when computing or storage resources are expected to max out, so there's no guesswork involved in ensuring the company has all of the resources it needs to satisfy customer demand.

## Meeting the Challenge

Vodafone and Telefónica are just two examples of the many companies in the throes of digital transformation. As their stories show, this is a period of transition—one with significant challenges but also tremendous opportunity. The demands of the digital age require telecoms to rethink their data management approach and IT infrastructure, and transform it into a more agile, automated process capable of delivering applications and services far more quickly than in the past. It also requires them to recognize the value of their data to their ongoing success, and to take steps to ensure that it is always protected and Hyper-Available.

# 5 Keys to Ensuring Hyper-Availability

Telecom companies need to look for an Intelligent Data Management platform and strategy that addresses the best practices IDC describes. That amounts to a solution that addresses five key areas:

- 1 Data loss avoidance**  
 The solution needs to support end-to-end encryption of data at the point of origination, when in transit and at rest. It should also support multiple backup options, including the ability to perform backup and replication at the same time, and to replicate either on-site for high availability or off-site for disaster recovery.
- 2 Complete visibility**  
 A backup solution should have real-time monitoring and alerting capabilities, and notify users of backup and VM performance issues. Such capabilities are crucial to enabling telecoms to avoid downtime and meet SLAs.
- 3 Verified recoverability**  
 Support for high-speed recovery for VMs, files, and applications is essential. Leading solutions support the ability to run virtual applications directly from a backup, rather than requiring users to extract the backup and copy it to a production environment.
- 4 Capacity planning and forecasting**  
 The ability to perform capacity planning and forecast resource usage and utilization is vital for telecom companies to keep up with demand. Ideally, the solution should include "what-if" modeling capabilities, and alert users when resources are overcommitted. Some systems also enable visibility into the costs of compute, storage, and backup repository resources, which is useful for chargeback and billing purposes.
- 5 Leveraged data**  
 Telecom companies need assurance that their backup solution will be able to perform a recovery when necessary, which means they must routinely test recovery processes. Only by verifying recovery jobs can they be sure they'll be able to recover every file, application, or virtual server when needed. Given the impracticality of manually verifying every recovery job, automation.

## Learn more

Veeam is the leader in Intelligent Data Management for the Hyper-Available Enterprise. Veeam Hyper-Availability Platform is the most complete solution to help customers on the journey to Intelligent Data Management in a world that demands the Hyper-Availability of data. We have more than 294,000 customers worldwide, including 75% of the Fortune 500 and 58% of the Global 2000. Our customer satisfaction scores, at 3.5X the industry average, are the highest in the industry. Our global ecosystem includes 55,000 channel partners; Cisco, HPE, and NetApp as exclusive resellers; and nearly 19,000 cloud and service providers.

For more information visit [Veeam](https://www.veeam.com).

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