THE STATE OF IT TRANSFORMATION FOR TELECOMMUNICATIONS

An Analysis by Dell EMC and VMware

Dell EMC® and VMware® are helping IT groups at telecommunication organizations transform to business-focused service providers. The State of IT Transformation for Telecommunications is an analysis of customer data provided by telecom organizations that have assessed their current state and identified their biggest gaps. This report identifies only a handful of key drivers that we believe will help propel IT transformation within the telecommunications industry over the next few years.

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Executive Summary

Information technology for the telecommunication industry—as well as the industry itself—is constantly being redefined. As older services are used less, new services need to be deployed. Competition from non-traditional over-the-top (OTT) providers is putting tremendous pressure on revenue and is transforming business models. IT professionals within the telecommunication industry may be strapped for resources; some are forced to work with legacy systems that make it difficult to offer the type of strategic services that more nimble companies can provide. To stay competitive, attract new customers, and retain the ones they have, companies need to deliver reliable services while driving the IT transformation needed for greater flexibility, agility, and scale.

Have you ever wondered how your plans for transforming your IT organization stack up against those of your telecommunication industry peers? It is a natural part of the planning process for IT professionals and business unit leaders to seek best practices from similar companies. Understanding the IT transformation process, Dell EMC and VMware have compiled information from telecommunication organizations to help provide a new view on where they are currently and, more importantly, where they want to be in the near future.

The State of IT Transformation in Telecommunications is a companion report of a larger analysis conducted by Dell EMC and VMware. Data was collected from a variety of companies, including telecommunications, that participated in an IT Transformation Workshop, which is specifically designed to help companies assess the gaps in their IT transformation, benchmark their current state against their peers, gain consensus among executives on prioritizing their goals and determine the immediate next steps in achieving those goals. For the purpose of the report, telecommunication includes both telecommunications as well as media companies.

This report focuses only on the responses from the telecommunication industry and provides key highlights and insights on trends that impact IT transformation for telecommunications and media companies. It will expand on the overall report by providing our view on three major drivers (applications, operating model, and infrastructure) for these organizations looking to achieve IT transformation. The entire 2015 State of IT Transformation report, along with additional industry companion reports, is available on dellEMC.com.
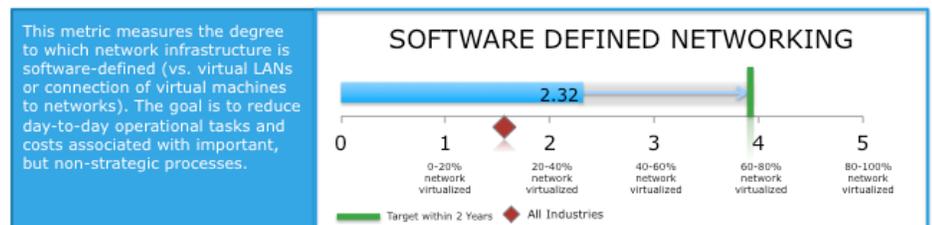
[1] Source: An analysis of clients by McKinsey and Dell EMC

Driver 1: Infrastructure

One of the major drivers for IT Transformation within the telecommunications industry over the next few years will be the need for telecommunication companies to break the model of their legacy infrastructures. To stay ahead, more telecommunications companies will explore, develop, and implement network function virtualization and software define networks.

Seventy-eight percent of the telecommunications participants indicated that they are either evaluating or actively conducting a proof of concept for hybrid cloud architecture. None of the participants reported that a hybrid cloud environment is standard across the enterprise. However, **one third** of the respondents expect that they will leverage a well-engineered hybrid cloud across their environment within the next two years.

This metric measures the degree to which network infrastructure is software-defined (vs. virtual LANs or connection of virtual machines to networks). The goal is to reduce day-to-day operational tasks and costs associated with important, but non-strategic processes.

SOFTWARE DEFINED NETWORKING

2.32

0	1	2	3	4	5
	0-20% network virtualized	20-40% network virtualized	40-60% network virtualized	60-80% network virtualized	80-100% network virtualized

Target within 2 Years   ◆ All Industries

The telecommunications industry is already ahead of other industries when it comes to virtualizing their networks. In fact, network function virtualization will continue to drive infrastructure change for telecommunication companies for the foreseeable future. However, the gap between where telecommunication companies are presently and where they aspire to be is still significant.

Industry View:

Currently most telecommunication companies are well ahead of other industries, with most having between **twenty and forty percent of their network virtualized**. However, Network Function Virtualization (NFV) requirements and the need for telecommunication to reduce CAPEX and OPEX, not to mention deliver new services faster, will continue to push the need for more of their network infrastructure to be software defined.

NFV and software-defined networking (SDN) are critical technologies in enabling this transition. Both telecommunications and cable operators are in the early stages of adoption and have the potential to reap significant gains from these technologies as they continue their transition to cloud-based, programmable infrastructure to cloud-based networks. This transition will enable them to leverage cloud scale, agility, and economies. At the same time however, the need to evolve from a vast array of embedded technologies to adopt new methodologies and techniques present challenges. Most importantly, telecom and cable operators need to put forth a differentiated offering of services amid an increasingly competitive environment.

Over the next five years, more industries will see the benefits of NFV and SDN technologies, with telecommunications leading the way, and as a result will drive evolutionary changes to network infrastructure.

Driver 2: Operating Model & Service Strategy

The ability to know what group is using IT Services and either showback or chargeback will a be a major step in justifying costs and resources, as well as help project the needs of different departments going forward.
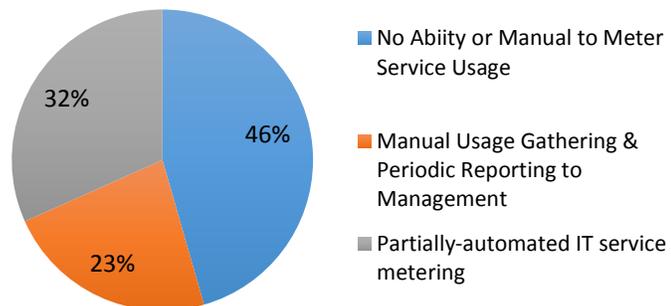
Eighty-one percent of respondents from the telecommunications industry indicated that within two years they are targeting at least a partial—if not a fully—automated metering system in place, built in to a services catalog with a predictive capacity strategy in place.

Over the next 24 months, IT groups within telecommunication companies will begin or expand their ability to offer IT as a Service. As the telecommunication industry tries to keep up with the explosion of technology, IT must put its internal and external users at the center of their services, and provide the best possible experience to those users and provide transparency into usage and cost data.

The development of a self-service portal and services catalog was cited as a capabilities gap experienced by telecommunications. More than half (**seventy percent**) of respondents cited that they only have **begun to explore creating a services catalog**, and while **nineteen percent** have a catalog, they **lack the self-service portal** necessary to deliver an efficient and effective IT-as-a-Service model.

Only ten percent of those surveyed have a service catalog and portal for fully implemented.

Metering for Service Consumption

- 46% No Abiity or Manual to Meter Service Usage
- 23% Manual Usage Gathering & Periodic Reporting to Management
- 32% Partially-automated IT service metering

If IT within telecommunication companies is going to offer IT as a Service, they require the ability to monitor service consumption at a level that few are currently capable of. **Nearly half (forty-six percent)** of respondents indicated that they have no ability to meter service usage. And while an additional 32 percent can manually measure service usage, they do not consistently report back to management, indicating the need for both technology and operational process transformation.

Given the wide range of services being used and the need to scale out services intelligently, the ability to monitor, track, predict service usage, and ultimately chargeback to the areas that are using IT services will enable operators to provide strategic services to the end users.

Ninety percent of the IT professionals in telecommunications that responded to the survey indicated that there is either no organized plan for evaluating workloads for hybrid cloud, or a disconnected use of hybrid cloud which is potentially causing operational complexity.

According to IDC, by 2017, over sixty percent of IT organizations will implement a hybrid IT environment. In large part this movement will be centered on telecom operators' need to evolve their network infrastructure by using NFV and SDN-enabled networks. As more of the infrastructure moves to a software-defined virtualized network, the flexibility that a hybrid cloud offers will help telecommunications companies accelerate the next phase of IT Transformation.

The participants of the survey support this trend. Sixty-five percent of the telecommunication respondents indicated that within the next two years they will have at least evaluated their application portfolio to determine which are suitable for hybrid cloud deployment.
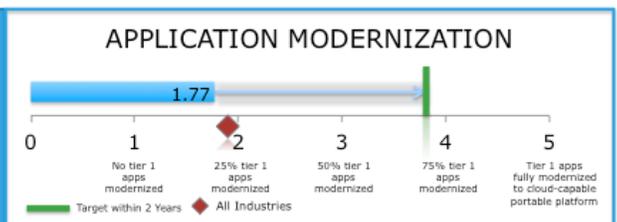
Driver 3: Applications

When it comes to the application portion of IT Transformation, the telecommunication participants lagged behind other industries, particularly in areas of application modernization and the scalability of application platform. While many telecommunications companies see the need to focus on application transformation, more emphasis will be needed to bring telecommunication on par with other industries

Seventy-seven percent of the telecommunication respondents indicated that they do not have the modernized application development infrastructure necessary to meet next-generation cloud computing requirements.

This metric measures what percentage of the Tier1 applications have been modernized and are "cloud-ready". In a perfect environment, all of the Tier1 applications would be written in lightweight, highly-portable application frameworks and be capable of harnessing cloud-connectivity and scalability.

APPLICATION MODERNIZATION

1.77

0	1	2	3	4	5
	No tier 1 apps modernized	25% tier 1 apps modernized	50% tier 1 apps modernized	75% tier 1 apps modernized	Tier 1 apps fully modernized to cloud-capable portable platform

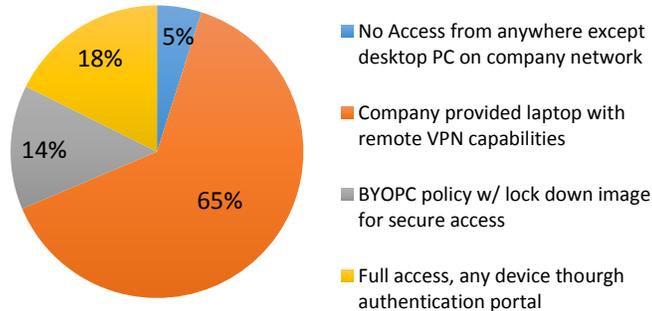Target within 2 Years ◆ All Industries

In a perfect environment tier 1 applications would be nimble and cloud-ready. However, **eighty-two percent** of those surveyed responded that **less than twenty-five percent** of the **tier 1 applications are modernized and or cloud-ready**. In fact, nearly all of the telecommunications participants in the survey indicated that less than **fifty percent** their current applications are not modernized.

One area where telecommunications exceeds the industry average is that of enabling users to access IT's system via a variety of devices. Sixty-four percent of all telecommunication participants indicated that their systems could be accessed via a laptop with remote VPN capabilities. An additional 32 percent offered either a Bring-Your-Own-PC policy with a lock down corporate image with secure access, or a full access anywhere policy from any device through a self-service authentication portal. In

the next two years that number is expected to increase to more than 60 percent according to the participants in our study.

Metering for Service Consumption

- No Access from anywhere except desktop PC on company network
- Company provided laptop with remote VPN capabilities
- BYOPC policy w/ lock down image for secure access
- Full access, any device though authentication portal

Conclusion

When it comes to IT Transformation, telecommunications is outpacing other industries in some areas, but lagging behind in others. The rationale for this can be found by examining the nature of the industry and some of the trends over the past five years. IT for telecommunications will, and should be, uncompromisingly focused on evolving their networks with NFV and SDN to meet the needs of a dynamic, innovative marketplace. The ability to stay competitive, reduce operating costs, rapidly meet the needs of customers and find new sustainable revenue channels depends greatly on the successful transition from the legacy infrastructure to a virtualized one.

Telecommunication companies and their partners are developing innovative solutions for their organization's infrastructure, operating models, or IT service strategies. Driving change can enable the telecommunication industry to be more efficient, reducing time spent managing issues and allowing for more time meeting the needs of their customers.

About the IT Transformation Workshop

The IT Transformation Workshop can help IT organizations identify key transformational initiatives by measuring the readiness of their current environment. Organizations receive benchmarking data that shows where peers in their industry are in each area of transformation, and an analysis of the key gaps in their environment. At the end of the workshop, participants have a prioritized list of next steps to take, along with the estimated return on investment (ROI) that would be seen by closing the gaps in IT transformation that were identified in the workshop.

Appendix—Methodology

The organizations analyzed in this report began their transformation with an IT Transformation Workshop, which was specifically designed to help them assess the gaps in their IT transformation, benchmark their current state against their industry peers, determine their goals, and gain consensus among their executives on prioritizing the immediate next steps to take to achieve those goals. The CIO and his/her direct reports are the participants at these workshops.

This report is an analysis of the data collected during these workshops and is a barometer of where companies are in their IT transformation. Therefore, this analysis is not a random sample of research subjects, but an analysis of companies who are actually in the midst of an IT transformation.[2]

Prior to an IT Transformation Workshop, the participating telecommunication organization completes a questionnaire that is used to assess the company's current and desired state of transformation. There are 29 questions that cover various areas:

Operating Model and Service Strategy

- Organization and skills

- Packaging IT services—self-service enablement, financial transparency

- IT service automation—provisioning, metering, monitoring, reporting, and predictability

Applications

- Application modernization, development, and platforms

- End-user computing

Infrastructure

- Hybrid cloud—workloads and architecture

- Virtualization—compute, storage, app, network, and desktop

- Business continuity and availability

Workshop participants answer each question in two ways – where they are today (their current state) and where they want to be within the next two years (their desired state). A gap analysis is performed and recommendations for closing those gaps are presented to the CIO and team. The company also receives a benchmark analysis that compares their progress in IT transformation against industry and competitive peers.

[2] This report covers the 22 global companies who participated in workshops between 2014 through mid-2015

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