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Software-defined Anything: Agility and Flexibility Unbound

Breaking Legacy Obstacles with Today's Solutions

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50 Years of Growth, Innovation and Leadership

INTRODUCTION

Organizations of all sizes, geographies and industries are experiencing rapid change. Bring your own (BYO) device or app, mobility, bandwidth-intensive applications, internet of things (IoT), fast-emerging security threats, shifting workforce demographics and employee preferences, and the rise of cloud services are all dramatically reshaping the nature of work and the workplace.

Adapt or be left behind—that's the stark reality organizations of all types and sizes operate within today. Because the need to change is constant, organizations must become smarter in how they prepare for and respond to new challenges, influences and opportunities. They must become less reactive and more proactive. They must become a smarter enterprise.

Smart enterprises are leveraging technology to improve how people communicate, collaborate, learn and work. Those same technologies help to optimize the business, increase visibility and control, improve safety and security, and drive competitive advantages.

This paper explores solutions that address market trends faced by end-user organizations of all types. By employing a software-centric technology environment, organizations of any size can simultaneously address concerns and more quickly embrace new opportunities.

SOFTWARE-DEFINED ANYTHING: AGILITY AND FLEXIBILITY UNBOUND

There's no doubt we are living in an increasingly software-centric world of applications and services. Today, hardware-centric technology is often viewed as rigid and purpose-built. Software is viewed as inherently flexible and, more importantly, extensible. Software-defined solutions decouple the software from the IT hardware it controls, allowing for a layer of abstraction to occur. In the IT realm, the move to the virtualization of applications, servers and even the network is allowing IT organizations to deliver technologies based on logical infrastructure designs, rather than remaining bound to physical limitations. Hyperconverged architectures are enabling the integration of components based on industry standards (i.e., VMware, Red Hat Cloud Suite and Microsoft Azure Stack) and deployment onto new converged hardware form factors with improved resource distribution and management. The business network was the laggard in embracing this movement toward virtualization and software-centric control. It has benefitted from lessons learned in the virtualization and convergence of other technologies (i.e., servers, applications, databases, virtual appliances, etc.).

A significant majority of today's business networks are static, designed to support the specific application and bandwidth needs of a given location or environment. These networks are a barrier to the increasingly dynamic, on-demand needs of business users and their applications. IT organizations are, by necessity, fundamentally rethinking their core business networks to infrastructure based on an ecosystem of networks, applications and services driven by software.

Smart enterprises leverage standards-based software-defined networking (SDN) to provide safety and security over the virtual and physical environment, as well as high availability, operational efficiencies and cost savings. SDN underpins environments where applications/services and networks interact dynamically; they are synchronized for performance and efficiency.

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Software-defined Anything Breaks Legacy Obstacles

Breaking away from the physical and location limitations of hardware, virtualized networks and hyperconverged architectures bring significant relief to taxed resources (monetary capital, time, real estate space, and manpower) and deliver new efficiencies to the enterprise.

In software-defined environments, the network can be highly automated to proactively identify and adjust with varying levels of utilization and demand. In the past, such events required manual processes to identify, human intervention to reconfigure and sometimes even downtime to affect those changes.

Simplicity: Easier-to-use administration tools simplify deployment and ongoing management of software-defined environments, representing a huge leap forward from the complex and arcane legacy networks bound by outdated switching and routing principals.

Security: In contrast to a manual process of elimination to pinpoint issues, SDN can dynamically isolate ports where a connection failure or an identified attack is located. Remediation intervals decrease from weeks or months to seconds.

Scale: SDN allows scale at a significantly lower cost while providing additional services with greater efficiency and time to market; resources and capacity are optimized.

Centralization: Multi-site organizations may see more advantages in smoother management and centralization with fewer skilled staff.

Safety: SDN can dynamically prioritize all forms of traffic across the entire network, including emergency calls/notifications.

Business Continuity: Admins can assign priority routing for VIP calls as well as priority business applications (contact center, e-commerce) and bandwidth-sensitive communications apps (i.e., video). Alternate network paths are automatically selected based on network conditions and optimization of traffic, including self-healing for uninterrupted service.

Disaster Recovery: When a hard failure occurs due to an unanticipated disaster, SDN facilitates intelligent failover by load balancing services between multiple sites, ensuring recovery from the more dire circumstances.

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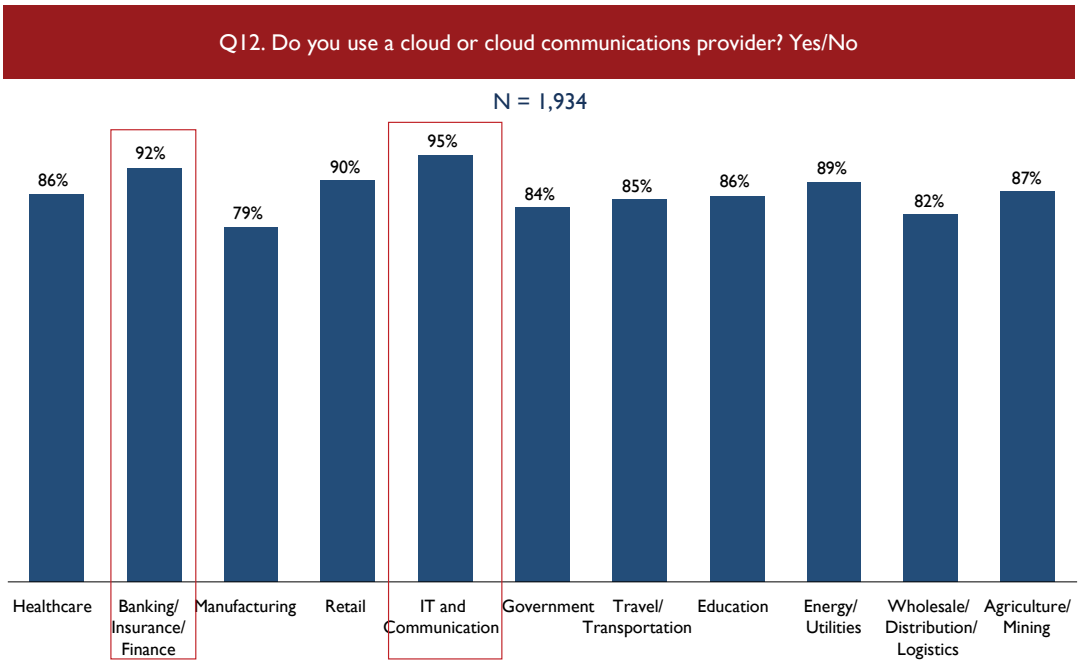
Software-defined Workstyles and Workflows

Real-time communications applications (voice, data and video) as well as business toolsets are increasingly deployed in software-centric designs and consumed as software-based services (i.e., SaaS). The ability to deploy software anywhere on the network and dynamically scale changes the nature of work and business agility.

A majority of enterprises across verticals worldwide are already leveraging the flexibility and reach of cloud-based services for on-demand anywhere, anytime access to communications and collaboration software, which ranks among the most mission-critical application sets any business utilizes.



Secured software interfaces, including softphones and user clients provisioned to desktops, laptops and mobile devices, enable users to work from anywhere while fully connected, extending the reach of the enterprise and providing a business continuity option as well. Employees can work effectively from home or hotels without missing a beat. They can also be deployed in close proximity to customers and partners as needed. Due to this flexibility and other benefits (such as work-life balance for employees), Frost & Sullivan expects the number of mobile voice and unified communications clients sold worldwide to grow by one-third, from approximately 4 million in 2016 to over 6 million in 2023.

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Key Takeaways to Establishing a Software Foundation

Software-defined anything is about building intelligent and integrated environments that can dynamically adapt to changing demands.

- IT decision makers must recognize the impact of unsecure devices and mobile solutions on their network and evaluate how those should align with compliance and privacy needs, and all-around corporate policy concerning information assurance for data handling and management.
- Technology decision makers should consider how the agility of an intelligent network can improve the ways employees and customers are served, while also driving business continuity and efficiencies.

A trusted provider can help build environments to enable flexible support for various devices and applications that will inevitably come onto the network. The provider can ensure performance, reliability and security, as well as deliver the distributed applications and mobility that most organizations need to remain competitive.

THE LAST WORD

To become a smart enterprise is to become more agile and proactive in addressing both adversity and opportunities. There is a lot to consider when laying the necessary foundation and many places your organization can start to become a smart enterprise.

Most IT organizations know where their priority concerns lie. However, most also lack the internal resources to simultaneously take on such strategic projects and also focus on day-to-day operations. It's smart to align with an expert provider. Forward-looking organizations are engaging with trusted providers to:

- Deliver both technology and services
- Effectively leverage big data, IoT, and network intelligence
- Help identify and prepare for emerging business needs
- Improve compliance and business continuity through intelligent infrastructure
- Allow IT and the workforce to focus on core competencies

Today's technology environments and business requirements are complex. Every component touching your organization's network is inherently interconnected, with a ripple effect emanating from nearly every change. A partnership with a trusted provider can help you address today's priorities and lay a foundation to become a smart enterprise.

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