AVAYA
The Power of We™

The Business of Speed

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When many of us started out in the networking business, we judged the worth of networking products by their speeds and feeds. Typically, these judgments were made based on which product boasted the best specifications. This methodology was easy and straightforward. It seemed quantitative, and appeared quite defensible.

Today, things have changed. Business has realized the strategic importance of the network. Business is becoming more vocal about the network's need to implement and provide revenue-driving services. If an IT group is truly going to service the business, their perspective and language must change. Business owners are no longer asking for spec sheets and comparative matrices. They are asking questions like, "When can I roll out my real-time sales effectiveness system?", "When can we deploy security cameras in every store?", and "Can we grant access to 1,000 wireless guests tomorrow?"

Zeus Kerravala, principal analyst with ZK Research said, "It is nearly impossible for today's networks to run at business speed." There is evidence to support Kerravala's claim.

In January of 2014 a research firm, Dynamic Markets, was commissioned by Avaya to better understand where networks are today in relation to business speed requirements. The results of the research were enlightening. In the report called, *Network Agility Research 2014*, the following was observed:

> *When network changes requiring a maintenance window have been made, IT networking professionals have had to wait **27 days** on average before they could make the changes necessary to the corporate network. This is equivalent to almost 4 weeks' or 1 month's worth of delays. One company had to wait 9 months for such a maintenance opportunity to arrive. Indeed, 32% of companies had to wait more than 30 days.*
>
> *It seems the financial services sector not only experienced more maintenance windows, but it also had to wait longer, on average (38 days), compared to just 13 days for other services companies. Companies in the travel & transport sector also had to wait longer for suitable maintenance windows (37 days) and 48% of this sector had to wait more than 30 days.*[1]

[1] Network Agility Research 2014 Report

Roadblocks to Business Speed...the three "C's"

- Configuration
- Complexity
- Cost

Further, the report outlines the breadth of the problem:

> *...Almost all companies (99%) experience delays to changes and improvements to the business technology systems because of having to wait for suitable maintenance windows. A significant 76% say this happens at least frequently, which includes 18% who say it happens all the time, 28% who say it occurs most of the time and 30% who say it happens frequently. Only 1% says this never happens and just 23% say it is a rare occurrence.*[1]

Combining Kerravala's statement with the empirical evidence above, it seems that the market could be at an inflection point poised to turn the corner and support the speed of business.

Roadblocks to Business Speed

Protocols running today's networks have been around for 20 to 30 years. A typical network runs 4-6 protocols that manage Layer 2, IP Routing, IP Multicast applications, and Virtual Private Networking (VPN). Services are provisioned against physical devices. Data packets stop at each device on the path, get inspected, and are then forwarded on. There are three "C's" that describe the challenge with today's model:

- **Configuration** – When IT personnel are relegated to box-by-box configuration, implementation and maintenance activities are conducted in a strictly linear fashion. There is no opportunity to speed up the process; it's typically long and error-prone.
- **Complexity** – Keeping track of all the layered configurations across all networking devices is a complex process. IT personnel are likely maintaining multiple IP Routing instances (in many cases with two protocols), managing an anti-looping protocol, a IP Multicast protocol, plus a separate VPN technology for multi-site connectivity. Every minute of routine maintenance is a minute taken away from doing more proactive value-added projects.
- **Cost** – That is, the cost of recovery time and the cost of capacity – With physically managed control planes, recovery performance is slow since idle links must be activated and a new topology calculated before traffic can flow again. Idle links cost money, and nobody likes paying for something that is seldom used. Further, supporting multiple complex protocols means a need for larger CPU power and memory capacity, more routing tables, inspection of every packet, and flow-balancing. Further, when a topology change does occur, all these independent but interdependent protocols must converge in sequence for services to be restored.

[1] Network Agility Research 2014 Report

Avaya Fabric Connect is an extended implementation of the Shortest Path Bridging standard, and allows companies to run the network at business speed.

Building Blocks for Business Speed

There is a better way. Physical devices and the interplay between them can be virtualized to create a unified network entity by using a single, integrated, multi-service technology called, Avaya Fabric Connect. Part of the Avaya toolkit of networking solutions, Avaya Fabric Connect is an extended implementation of the Shortest Path Bridging standard. Now, instead of a box-by-box dependent physical topology, the function of delivering of network services is abstracted and services are provisioned as a unified process. Leveraging a highly sophisticated protocol that supports Layer 2, Layer 3, IP Multicast, and IP VPN services, Avaya Fabric Connect replaces all conventional protocols, and revolutionizes configuration requirements and provisioning methodologies. Now, the control plane is autonomic – borrowing from the concept of the body's autonomic nervous system, where life support is unconscious, automatic, and involuntary – and being autonomic delivers a number of key capabilities:

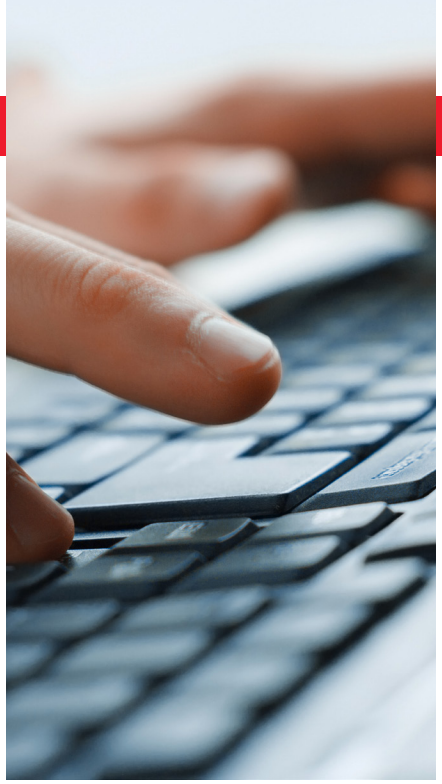
- Edge-only provisioning (quarantining the Core)
- Native network segmentation
- Instantaneous recovery
- Optimized IP Multicast Routing
- Seamless Virtual Machine mobility
- Automatic load-balancing of flows

This removes the need for network-wide VLAN tagging and multiple IP Routing instances, sequentially dependent legacy protocols, and software to address network loops. Instead, you gain the ability for:

- Real-time provisioning
- Full link/device utilization and optimization
- IP Multicast scale and performance
- Easy and unlimited network segmentation

27 Times Faster Service Rollout

The real-time provisioning delivers radically benefits to service agility. With no requirement for maintenance windows, the time that a business waits to make a significant change in the network can be dramatically reduced. Instead of an average of about one month, as discovered as part of the Dynamic Markets research, changes can now typically be made the same day. Once the decision to make a change is taken, here is the likely sequence of events to roll out a new or changed service:



Waiting Time Required Before a New Service Rollout

Identification of all Edge Switches that encompass the service	30 minutes
Validate with peer or manager	0 to 4 hours of waiting
Create/modify Virtual LANs (VLANs), as required	10 minutes
Map VLANs to Virtual Service Networks (VSNs)	10 minutes
Validate changes	10 minutes

Source: Avaya Product Marketing 2014

As this illustration demonstrates, there is no requirement for engineers to configure the Core, and all configuration activity is limited to creating or modifying VLANs local to Edge Switches, and then mapping these to the appropriate Virtual Service Network. The average provisioning time is about one hour, from start to finish. If peer or manager approval of the steps is required this would likely take up to 4 hours of waiting. Worst-case, the process takes a day, which is an incredible 27 times faster than businesses that are dependent upon conventional technologies.

Onward to Value-Add

Too often the network has been blamed for being unable to accommodate – in a timely manner – the evolution necessary that would allow business to growth and compete effectively. We, in the broadest sense, seem to have grown accustomed to lengthy change cycles. With an Avaya Fabric Connect foundation however, IT can shift the work focus from mundane maintenance to genuine value-added initiatives; applying skills to enhancing the business's operational tempo and efficiency. Avaya Fabric Connect technology provides the opportunity for companies to run the network at business speed.

About Avaya

Avaya is a global provider of business collaboration and communications solutions, providing unified communications, contact centers, networking and related services to companies of all sizes around the world. For more information please visit **www.avaya.com**.

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