WEI INSIGHTS TECH BRIEF

7 SDN PREDICTIONS FOR 2016 AND BEYOND

In our whitepaper entitled, *Software Defined Networking—The Next IT Paradigm of Promise*, we discussed SDN and its potential impactful benefits to enterprises at large. SDN, or Software Defined Networking, is a transformation of the network administration function from human middleware to centralized application based management. SDN stems from the fact that networks today are burdened with the proliferation of devices to the point that IT staffs spend the vast majority of their time managing and configuring them. Although virtualization has allowed both administrators and ordinary users themselves to provision computer devices on demand, the collection of switches, routers and firewalls that make up the network infrastructure is still a remaining bottleneck. These devices have traditionally been provisioned and configured by hand, much like all servers were a dozen years ago or so. The purpose of SDN is to make the network as automated and dynamic as the virtualized devices that it supports.

Up to now, SDN has been mostly showcased in large datacenter-like networks such as Google and Ebay. Many people are wondering if and when SDN proliferates into other industry segments and what new innovations and changes we will see as this new technology takes hold. We've pulled together a summary of predictions for Software Defined Networking that will begin to transpire in the coming year and possibly the rest of the decade.

1. SDN MOVES BEYOND THE DATACENTER INTO OTHER NETWORK DOMAINS

Large datacenters are usually the early adopters of new technology paradigms. One major area that SDN is believed to move into in a major way is within campus networks. School systems and colleges for instance are ideally suited for the dynamic benefits of SDN. The network load for educational institutions can vary widely at times such as when students are involved with online testing. Many school systems in the southeast United States are currently allocating their future E-Rate dollars to purchase Switched Ethernet Services from network providers in which school systems can dynamically increase and decrease their network bandwidth for specific locations on the fly. Other industries using enterprise campus or edge architectures such as healthcare, sports and entertainment, and retail will follow suit as well.

2. SIGNIFICANT INNOVATIONS IN THE NORTHBOUND INTERFACE

SDN separates the data plane from the control plane. This means that some type of controller or orchestrator manages all of the devices within the data plane. These devices communicate with the controller through what is called the southbound interface. The controller uses an API or northbound interface to communicate with the orchestrating application which issues provisioning, configuration and trafficking commands to the data plane devices. Up to now, the southbound interface has received much of the visibility of this new technology thanks to standardizing the communication flow using OpenFlow. Now that enterprises have incorporated SDN compatibility into their network devices, innovation can now be focused on the northbound. Because both ends of the northbound interface reside at the software level, the development time will be much faster and the investment costs are much lower compared to that of the southbound API.

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3. SDN DEPLOYMENT AND INVESTMENT WILL GROW EXPONENTIALLY IN THE COMING YEARS

Gartner believes that more than 10,000 enterprises worldwide will have deployed SDN in their networks by the end of 2016.[1] That constitutes a ten-fold increase when compared to the close of 2014. Market research firm, IDC, predicts revenues of $3.7 billion by the end of 2016 and over $8 billion by 2018. Global growth of SDN will be a contributing factor as they predict that SDN deployments will surpass 1 billion dollars in the Asia/Pacific rim. There are even loftier projections from others such as research firm, ACG, which projects SDN hardware expenditures to reach $13.3 billion in 2018 while software will garner $2.3 billion.

4. NETWORK HARDWARE WILL BECOME A COMMODITY

At some point in the near future, hardware will become more vanilla. Hardware will simply be a box and nothing more as the intelligent features and processing will take place exclusively at the application level. This will virtually make firmware updates a thing of the past as updates will take place within the managing application at the control level. This is illustrated today within the Microsoft Azure network as none of the vast amount of switches and routers make any decisions at all because Microsoft has readily embraced the potential of SDN within their own infrastructure.

5. THE DEVELOPER ATTAINS PROMINENCE WITHIN THE ORGANIZATION

Up to now, it has been network administrators and operators that have been the leaders and drivers of the enterprise. Their primary role was to keep the enterprise running, juggling an endless array of maintenance tasks that the assorted fleet of proprietary devices from multiple vendors demanded. This took up the bulk of their time. Remaining time was spent implementing new proprietary devices within the network that would then consume their time maintaining them. As the true nature of SDN is realized, developers will become the leaders of the enterprise. These developers will create applications that will help drive the business toward greater productivity, agility and profitability. Unlike the hardware driven network, the software driven network will not be seen as simply "the cost of doing business" but as an initiator of innovation that can be tied to the bottom line of the company.

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6. SMALL AND MIDSIZE COMPANIES WILL LEVERAGE TURNKEY SDN SOLUTIONS

By reducing the reliance of the network on human middleware, smaller organizations that have had the disadvantage of attaining enough IT talent to keep their networks operational and up-to-date will be able to leverage proprietary turnkey solutions from companies such as VMware and Aruba (recently acquired by HP). They will be able to obtain third party applications and orchestrators for their SDN controllers that will offer simple browser or GUI driven interfaces that will allow their small IT staff to administer the network.

7. SDN WILL ACCELERATE THE PROLIFERATION OF IOT

Just like SDN, we have heard a great deal about the Internet of Things. The vision of IoT is the premise that nearly every conceivable physical object will have Internet connectivity. We have already seen the early stages of this as a growing number of thermostats and home security products are now Internet driven. It is estimated that there could be as many as 210 billion IoT compliant devices, but none of this can occur without an automated software driven network management system.[2]

We live in a truly exciting time today. The predictions we make today are most likely primitive compared to the realities that will come about in the coming years. SDN could very well be for the IT industry what the assembly line was for the automotive industry.

TALK TO WEI TODAY

Our technical experts want to answer your toughest questions. We can assess your current IT environment and help you develop a software defined networking strategy to meet the demands of your business.

Sources
1. Andrew Lerner of the Gartner Group, Predicting SDN Adoption, December 8, 2014
2. Grit Denker of University of California, A Software Defined Networking Architecture for the Internet-of-Things, 2014

ABOUT WEI

WEI is an innovative, full service, customer centric IT solutions provider.

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info@wei.com
www.wei.com
43 Northwestern Drive | Salem, NH 03079
800.296.7837