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How SDN is Changing the Role of IT, for the Better

By Karthikeyan Subramaniam (Profile) Friday, August 22nd 2014



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There is no doubt about it—the role of IT is **changing** with radical shifts in technology coupled with social and economic factors impacting all levels of the traditional IT department.

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Until recently, traditional IT was focused on the physical world. Days can be summarized as:

1. provisioning hardware, servers and desktops
2. installing and maintaining operating systems as well as applications
3. establishing, monitoring and maintaining network services.

All very important...but also very boring.

While many technologies from the cloud to mobile to the Internet of Things (IoT) are impacting the traditional role of IT, we can add a new game changing technology to the mix, software-defined networking (SDN). [The Rayno Report](#) recently claimed that open technologies serving as the foundation for SDN and NFV represent the biggest shift in networking in 20 years—one that will create at least another \$20B in value with the opportunity to create more than \$50B.



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It's a bold claim but, in my opinion, SDN will make IT the most exciting place to be in an organization. What will the impact of SDN look like? To get an idea, we can look at how the smartphone transformed the world—for consumers and businesses and also for IT. By decoupling software from hardware, iPhone and Android phones opened up the possibility of an entire ecosystem of apps. An entire community of developers, users and businesses sprung up and turned a mundane device, the phone, into something very exciting.

What does this have to do with SDN? By decoupling the OS from hardware and leveraging new programming languages, SDN gives IT the tools they need to be able to find their own creative ways to solve real business problems and be part of an ecosystem of creative IT people. Here are just a few examples of how SDN is changing the role of IT—for the better.

Greater Choice: Enterprise App Stores

SDN is enabling a whole new world of enterprise app stores—providing IT with an unprecedented level of technology choices. While more creative applications and network services available, IT can spend less time adapting rigid off-the-shelf technologies to their business and, instead, focus on choosing the right technologies and defining how it will be used in their organization—for performance, to increase revenue, decrease costs. As a result, IT will play a more critical role in exceeding the expectations related to the top line or bottom line of the company's balance sheet. It also provides IT engineers exciting opportunities to create their own apps for corporate or to be a rock star contributor to the industry.

Provisioning

With SDN, the task of provisioning is automated. Rather than manually provisioning new servers and storage, IT creates workflows and orchestration policies—based on business needs and processes—that, in turn, dynamically configure systems. Instead of focusing in the nuts and bolts of provisioning, IT can play the role of a powerful, competition-crushing strategic business partner, using firsthand knowledge gained on tactical areas of the business (the IT infrastructure) and influence business policies to meet and exceed high-level business needs and goals.

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Asset Management

In traditional IT environments, each server, laptop, storage device, mobile phone needs to be meticulously and manually logged, tracked and managed. SDN offers new, cooler, asset management by sensing new devices and traffic patterns and applying policies automatically and, when needed, alert the IT administrator with necessary information. This is especially helpful in managing growing BYOD environments—where SDN can be used to create new policies that automatically ensure that employees are complying with security rules and to keep track of who is coming and going from the network and automatically isolating suspicious activity from the network to ensure its integrity.

Versatility

SDN also delivers much needed versatility to IT. SDN is not tied with any specific protocols and it is truly open because it adapts multiple interfaces from multiple vendors, technologies and protocols. Along with newer south-bound protocols such as OpenFlow and OF-CONFIG, production-ready SDN also supports most of the network management protocols so that it works seamlessly with the multitude of vendor products deployed in a typical IT environment. SDN changes the typical way that IT has been forced to work when modernizing its infrastructure. Instead of ripping-and-replacing existing products every three to five years, IT can now use SDN to complement and improve the performance of their previous hardware, reducing CAPEX—and a lot of sleepless nights—in the process. By providing multiple concurrent network paths for the data that flows between hosts, SDN lets IT improve bisectional bandwidth heavily—and be the 'Budget Hero' by increasing performance without upgrading nearly as many devices as they used to. SDN also helps reduce the typical anxiety around managing a large network—and the many vendor specific management applications and customer scripts that come with it—by providing single pane of glass management with complete visibility from networks and servers to SLAs.

Security

As recent data breaches at eBay, Target and yet another Heartbleed threat, security is an ever increasing threat—with estimates that security attacks are costing the world more than \$400 billion a year. With the rapid cloudification of IT, the rise of the cybercrime economy, programmable malware, quick-and-dirty-but-viral apps with poor security and the increasing threat of attacks that originate from the inside one thing is clear—CIOs need to change how they approach the cloud and security. Thanks to the hot-spot and internet-sharing features in smart phones and laptops—punching a hole in a corporate security perimeter is just one click away. Today's enterprise security is like having bank-vault quality locks on your house's front door to protect your valuable assets but leaving your huge, flimsy, windows unlocked and unsecured. The only way to truly secure the network is performing data-flow level management through SDN. SDN enables IT teams to monitor the network at a granular level—which can channel application data-flow through normal high-speed monitoring tools and quickly identify suspicious flows, which can be automatically isolated using SDN flow rules and analyzed using advanced threat protection tools to prevent a damaging attacks and data breaches. SDN transforms the role of IT administrator from regular infrastructure management to a strategic defense leader who protects valuable business services and assets against corporate espionage, insider threats and cyber-attacks.

So where is the best starting point for someone who is thinking about SDN? The good news is that SDN doesn't necessitate IT admins to learn programming to be creative with their infrastructure management. Well-designed management tools are available in the market that lets the admins design the workflows just like how they create flowcharts using Microsoft Visio or similar tools. For a curious but cautious admin, the best bet would be trying a hybrid SDN switch that comes with both traditional and SDN stacks. A hybrid deployment gives the flexibility to setup some ports on SDN while keeping the remaining ports on a good old L2/L3 stack.

There have been endless articles, white papers and forums dedicated to exploring the ways in which IT departments can shift its focus away from managing the physical IT infrastructure to developing an infrastructure that impacts the bottom line. From procurement, asset management, increased versatility and security—to offering an endless applications and networking services that solve real-world business problems—SDN is not just changing the role of IT and bringing the entire IT organization closer to core business goals it also provides the arsenal IT needs to protect themselves against data-breach lawsuits and to stay ahead of their competition.

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