MARKET NOTE

Intent-Based Networking in the Limelight with Cisco's Launch of Catalyst 9000 Series Ethernet Switches

Nolan Greene   Rohit Mehra

EXECUTIVE SNAPSHOT

FIGURE 1

Executive Snapshot: Cisco Intent-Based Networking and Catalyst 9000 Announcement

This IDC Market Note discusses Cisco's recent announcement of new intent-based networking strategy, called "The Network. Intuitive." Intent-based networking leverages machine learning, advanced security, and deep analytics capabilities to provide greater levels of programmability, automation, and network security integration while reducing time spent on manual network configuration and management. Intent-based networking will be enabled by the forthcoming DNA Center management console. Other components of the announcement include a refresh of Cisco Catalyst switches, a new subscription licensing model for infrastructure, and a deepening of Cisco's foundational network security strategy.

Key Takeaways

- With the introduction of its new Catalyst 9000 series switching line, Cisco overhauled an aging campus switching portfolio to meet the demands of DX (mobility, cloud, IoT, security). Catalyst 9000 switches are programmable from bottom to top – from the custom ASIC and IOS XE operating system to DNA Center.
- DNA Center is a new overarching management framework that represents an evolution from the APIC-EM campus SDN solution and the more static Cisco Prime. The DNA Center's goal is to "manage the network as one entity," ensuring command of network design, policy, provisioning, and assurance.
- Cisco signaled a move to a subscription-only model for purchasing infrastructure, eventually obsolescing the legacy "box selling" model. While this vision is some time away from fruition, this is potentially the most transformative element of this set of announcements for both Cisco and the networking industry.
- Cisco is furthering its "foundational security" strategy, in which security tools such as firewalls are developed natively for, and in tandem with, network infrastructure and can be more seamlessly updated for emerging threats. Concurrently, Cisco will leverage DNA Center to offer stronger integrated support for popular third-party security solutions within the context of a broader ecosystem.
- Software-Defined Access (SD-Access) is a key component of intent-based networking, automating network segmentation, policy enforcement, and troubleshooting.

Source: IDC, 2017

IN THIS MARKET NOTE

Cisco has recently unveiled its new intent-based networking strategy, called "The Network. Intuitive." The goal of intent-based networking is to allow greater levels of automation, security integration, and centralized manageability within a software subscription orientation. Intent-based networking is underpinned by Software-Defined Access (SDA), Cisco's automation engine built upon the company's Digital Network Architecture (DNA), which automates network segmentation, policy enforcement, and troubleshooting. Other core components of the announcement include a refresh of Cisco Catalyst switches, a new licensing model for infrastructure, and an all-in-one management console called DNA Center.

IDC'S POINT OF VIEW

This multipronged announcement represents a significant reshaping of Cisco's campus and branch networking portfolio. With the introduction of its new Catalyst 9000 series switching line (orderable now), Cisco overhauled an aging campus switching portfolio to meet the demands of digital transformation (DX), specifically around mobility, cloud, IoT, and next-generation security. Catalyst 9000 switches are programmable from bottom to top, from their custom ASIC and IOS XE operating system to Cisco's newly introduced DNA Center management platform.

In announcing a forthcoming subscription-only licensing model for infrastructure, Cisco is taking a notable risk. While cloud technologies and shifting enterprise finance norms have propagated the "everything as a service" model, it is unclear what the end-user demand is currently for this delivery model. However, there is potential for positive long-term revenue implications for Cisco in capitalizing on the shift toward opex-oriented subscription models. It is incumbent upon Cisco to shift channel partner mindsets from that of a "box selling" mentality to that of a consultative partner that customizes each customer's network through software. To this end, Cisco is introducing DNA services to help customers with how to best use and achieve value from intent-based networking.

The end-user need behind intent-based networking is well understood, in that it eliminates manual provisioning, security policy, and management tasks in favor of automated intent. With IoT set to introduce billions of new endpoints into enterprise networks over the next several years, it is critical to have a more intuitive and automated method for adding devices and users to the network and setting policies around applications. The plethora of forthcoming network analytics capabilities will become similarly overwhelming and will also need high levels of intuitiveness and automation to maximize its value, which Cisco aims to achieve with its Network Data Platform and Assurance capability within DNA Center.

Naturally, the need for intent extends to security. Security settings will be increasingly dynamic with the growing diversity of endpoints, users, and applications on the network. Consequently, Cisco will double down on its "foundational security" strategy, in which security tools such as firewalls are developed natively for, and in tandem with, network infrastructure and can be more seamlessly updated for emerging threats. At the same time, Cisco will leverage DNA Center to offer stronger integrated support for popular third-party security vendors such as Palo Alto Networks and Tufin, among others. Furthermore, Cisco will introduce Encrypted Traffic Analytics (leveraging Talos) to detect threats in encrypted traffic, without decrypting it, thus maintaining data privacy.

Finally, it is worth noting that Cisco is making a concurrent effort to expand its developer programs by releasing a new DevNet DNA Developer Center with resources to help developers and IT

professionals create network applications within IT systems and workflows. IDC sees this as a positive development given the need for network professionals to have developer skills and effectively use APIs as infrastructure and applications converge and organizations look to adopt DevOps practices.

Intent-based networking comes at a pivotal time for Cisco. Having been the market leader in enterprise networking by far, generally a favorable position to be in, there tends to be a concern that size can hinder agility and innovation, especially during times of rapid technology and/or business transformation. DX has been driving new IT architectures and consumption models bringing forth issues relating to cloud, mobility, hardware to software transitions, and open multivendor environments. While Cisco has sometimes been viewed as slow to respond to these developments, IDC believes this announcement shows a true commitment to turning the tide in aligning applications with the network.

Despite a flattening of revenue in some of its core networking markets that have some credible and noteworthy competitors, no other networking vendor commands the scale or mindshare that Cisco has achieved worldwide. In building the first end-to-end network architecture that leverages programmability, machine learning, and cognitive computing, Cisco has raised the bar for enterprise networking. Other vendors have started to introduce "network as a service" models, but none with the scale of Cisco. If Cisco succeeds at expeditiously onboarding new customers for its Catalyst 9000 series and intent-based networking and in operationalizing its subscription model, this will potentially reshape industry dynamics while providing significant benefits to enterprise IT on its journey toward DX.

DNA Center responds to multiple industry shifts that are under way with some of its foundational attributes:

- **Centralized operations and management.** Regardless of the mix of vendors participating in an enterprise's network infrastructure ecosystem, enterprises desire as much centralized streamlining of network implementation and management as possible. Given the growing workload of network managers regarding business objectives, network managers need more visibility into all network components, and many prefer just one console on which to manage network operations.

- **Intelligent systems.** Network analytics offer the ability to improve network implementation, detect and proactively remediate anomalies, and lend insight to user behavior. Network management modules will be expected to collect an abundance of relevant data points and put those insights into action. The machine learning and cognitive aspects of DNA Center mean that insights learned can automatically be put into use in improving the network.

- **Multivendor support.** While Cisco has traditionally adopted tightly integrated strategies with its core networking portfolios, DNA support of security vendors such as Palo Alto Networks and Tufin suggests an incremental move to supporting multivendor environments for network infrastructure and security. This is in line with a greater industry realization that most networking (and tangentially related) IT environments consist of multiple vendors and that high levels of interoperability will be essential to meeting customer requirements.

- **Cloud.** DNA Center sets the stage for an all-in-one management console for managing the end-to-end enterprise network from the cloud. IDC believes that DNA Center will eventually be leveraged as an integration point for Cisco's Meraki cloud-managed campus networking portfolio with Cisco's more traditional on-premise products.

- **Convergence.** Already mentioned is the emerging ability to converge all of enterprise network configuration and management within DNA Center. However, the possibilities of converged management could extend to the datacenter and beyond networking.

With a major refresh of Cisco's entire campus switching portfolio in conjunction with intent-based networking, IDC believes this represents a paradigm shift for Cisco and the enterprise networking industry. This includes several enhancements around programmability and automation that will ultimately provide tangible benefits to enterprise IT. However, there are many moving parts to this announcement, and the technological and market complexity of such a platform overhaul cannot be underscored. Cisco will need to strategically mobilize channel partners, integrators, and key customers (several of whom spoke positively of The Network. Intuitive during the product launch and at Cisco Live! the following week) to educate the broader market on the benefits of this technology and provide transitional support for new implementations. With such a significant global installed base, how Cisco goes about assisting existing customers with a smooth transition, while upgrading customers with relatively recent deployments, will be critical. IDC foresees DNA Center's potential to serve as an integration point between domains (e.g., network and security, Meraki and on-premise infrastructure, and IoT applications and network) as one of the beneficial aspects of this shift, given that enterprises often adopt hybrid approaches to IT infrastructure. If the broader programmability and automation aspects of intent-based networking register clear and early success, we expect to see responses from other industry players as they refine their offerings with enhanced architectures.

LEARN MORE

Related Research

- *Cisco C-Scape 2017: Driving Service Provider Transformation* (IDC #lcUS42841017, June 2017)
- *Cisco's IoT World Forum Lays Groundwork for IoT at Cisco Live* (IDC #US42805117, June 2017)
- *IDC at Interop ITX 2017 – Transforming the Enterprise Network for the Digital Era* (IDC #US42575417, May 2017)
- *Worldwide Enterprise Network Infrastructure Forecast, 2017-2021* (IDC #US42018517, May 2017)
- *Worldwide Ethernet Switch Market Shares, 2016: Rise of Upstart Vendors and ODM Direct Continues* (IDC #US41359017, May 2017)

Synopsis

This IDC Market Note discusses the recent announcement of Cisco of an overhaul of its enterprise campus Ethernet switch portfolio and its new intent-based networking strategy, called "The Network. Intuitive." Intent-based networking leverages machine learning, cognitive computing, and deep analytics capabilities to provide greater levels of programmability, automation, and security integration while reducing time spent on manual network configuration and management.

About IDC

International Data Corporation (IDC) is the premier global provider of market intelligence, advisory services, and events for the information technology, telecommunications and consumer technology markets. IDC helps IT professionals, business executives, and the investment community make fact-based decisions on technology purchases and business strategy. More than 1,100 IDC analysts provide global, regional, and local expertise on technology and industry opportunities and trends in over 110 countries worldwide. For 50 years, IDC has provided strategic insights to help our clients achieve their key business objectives. IDC is a subsidiary of IDG, the world"s leading technology media, research, and events company.

Global Headquarters

5 Speen Street
Framingham, MA - 01701
USA
508.872.8200
Twitter: @IDC
idc-community.com
www.idc.com