

Smart Services Capabilities for Service Providers: How Cisco is responding to the changing needs of customers



Abstract

The service provider operational environment is transforming rapidly, and today's post-deployment (Day 2) support model is no longer adequate to address the needs of customers deploying multiservice converged next generation networks (NGN) to deliver voice, video, and data services. There is a need to evolve from today's device-centric reactive support model to a more proactive and preemptive solution-centric support model to assure the network, improve efficiencies, and enhance the end user experience. Cisco® Services is responding to the changing needs of our service provider customers and partners by building the next generation support model with Smart Services capabilities as its foundation. Cisco Services' strategy has always focused on creating differentiation through our intellectual capital, tools, and technology, which have enabled delivery of traditional services like SP Base/SMARTnet®, Focused Technical Support (FTS), and Network Optimization Service (NOS). We are now taking these smart capabilities to the next level by further enriching our intellectual capital for IP NGN mobile, video, and managed/cloud solutions by building real-time software enabled tools, and investing in network health analytics and automation covering the plan, build, and run phases of the network lifecycle. These smart capabilities are delivered through our people, processes, tools, and partners, leveraging the network intelligence in our products and technologies. As a result, service providers get actionable insights and better predictability to improve quality of service, efficiency, agility, and to reduce costs. Cisco plans to embed these new smart capabilities throughout its services and evolve its portfolio to enhance value for our customers and to enable their business success. Smart Net Total Care, Migration Services, Assurance Services, and Collaborative Professional Services are some of the smart services recently introduced into the Cisco Services portfolio that embed these new smart capabilities. As we evolve our support offers, we will integrate our technical and advanced services into a combined portfolio and tier them,

based on service level, to provide the flexibility to address the specific needs of our service providers' customers and partners.

The Changing Operational Environment for Service Providers

Service providers around the globe are feeling the pressures of high customer expectations, increasing competition, decreasing operating budgets, and a constant need for people with skills to maintain increasingly complex networks and help assure services. These issues are exacerbated by the explosion of mobile data and IP video traffic, causing capacity bottlenecks, performance issues, and, at times, even outages.

For service provider end-customers, the expectation is that their IP NGNs never go down. This is a dramatic change from the previous goal of a "five nines" network, i.e., 99.999% uptime. If their high expectations are not met, consumers and businesses will seek other options and change providers. There is also an increasing need from business customers for Service Level Agreements (SLAs) so they can properly run their applications that are dependent upon these network services. As the network becomes the platform for delivering converged multimedia services to businesses and consumers, the health of the network, how well it performs, what features are available, and the end user experience are key to retaining customers and growing the business.

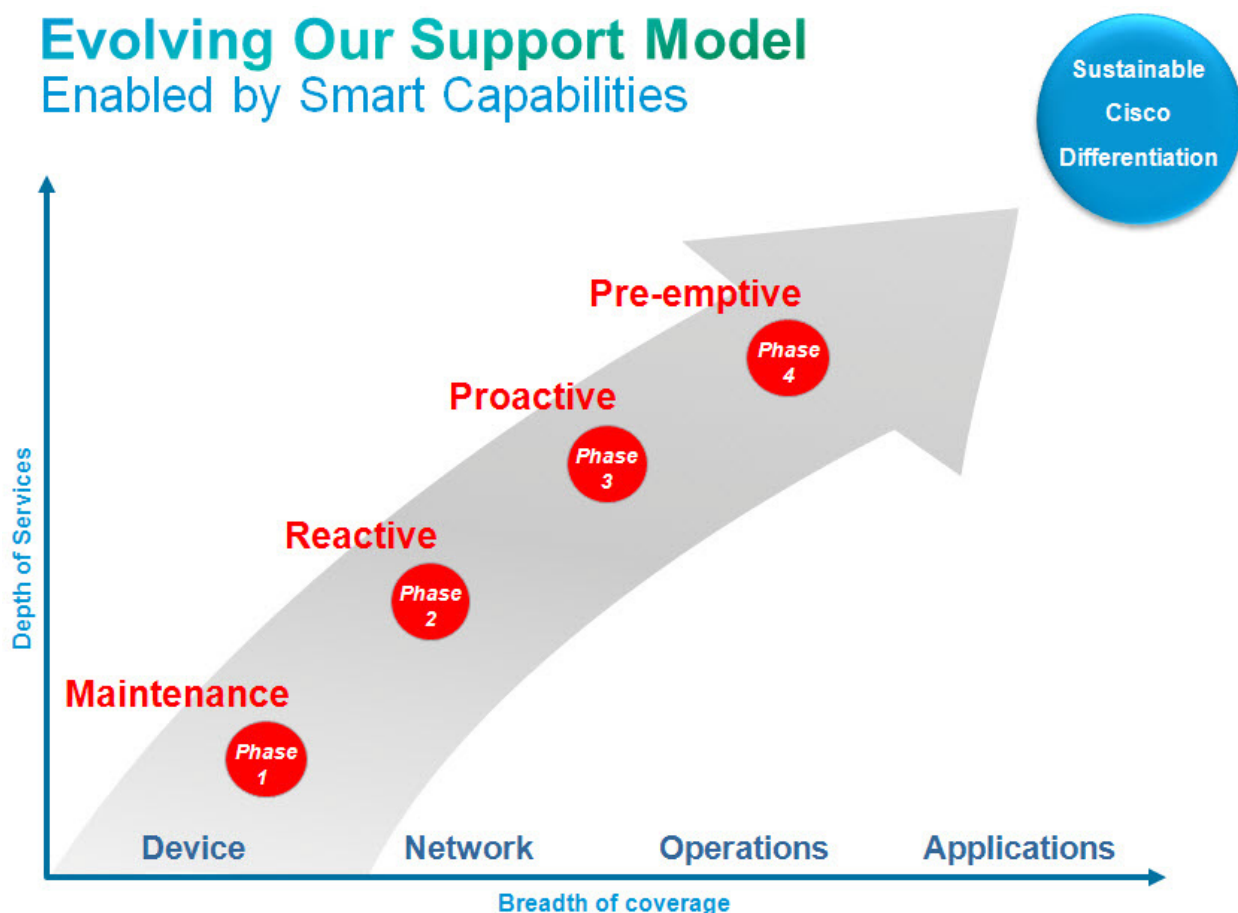
Given the mission critical nature of service provider networks, the traditional approach of reacting to network outages is no longer the answer. If incidents are being reacted to, chances are there has been a disruption of service. Service providers need better insight into the health of the network to identify potential problems and preempt them before they impact the network and services. Service providers also want to improve their operational efficiency and agility to reduce costs and stay competitive. To stay competitive in the current capex constrained environment, service providers must maximize the use of their existing network assets while quickly introducing new technology and services to their end customers.

Given this environment, there is greater need for intellectual capital, automation, and real-time tools to improve visibility and predictability to help assure the services, mitigate risks, and accelerate time to market. To address these operational requirements, service providers look to their vendors to not only deliver the technology and architectural solutions, but also evolved support capabilities.

Responding to Service Provider Requirements with Smart Services Capabilities

As a pioneer and leader in networking, Cisco has been helping service providers globally make the transition to IP NGN. We are taking this technology leadership to the next level by responding to the operational requirement of our customers. By evolving our services with smart capabilities embedded throughout our portfolio, we can deliver greater insights and predictability. These embedded smart capabilities are comprised of accumulated intellectual capital (IC), built through years of working with service providers globally. By bringing together Cisco certified professionals, supported by smart processes, analytics, real-time tools, and automation, we help enable our customers to manage the health of their network, improve end user services, operational efficiencies, and agility.

Figure 1. Evolving Support Model



These smart capabilities allow Cisco to deliver a portfolio of services that address a spectrum of support needs—from reactive to proactive to preemptive (see Figure 1)—while providing the flexibility to tailor the offer to complement customer capabilities.

“Smart” Has Always Been Foundational to Our Services Strategy

Smart capabilities are nothing new to Cisco. An early set of smart capabilities can be seen in the innovations behind the SMARTnet technical support offering, which leverages our award winning TAC (with 80% of problems solved through online resources) and the automation in our supply chain for quick, on-time delivery of replacement parts through our global network of hardware depots. In addition, Cisco has used smart tools for case management, root cause analysis, and reporting as part of our FTS portfolio. We evolved these IC-based capabilities by capturing engineers' knowledge and incorporating that into our collector and discovery tools, such as the Cisco Network Collector. This enabled us to introduce new proactive support offers like NOS for IP NGN, which uses these tools to deliver audits, assessments for proactive identification of service impacting issues, and network improvement plans.

As part of the Smart Services strategy we are significantly enhancing our IC to deliver the next generation support model powered by a portfolio of smart capabilities.

Defining Smart Services

Cisco Smart Services are built upon smart capabilities comprised of rich intellectual capital, real-time tools, analytics, and automation. These services deliver actionable insight into the health of the network, identifying potential problems and providing automated remediation to preempt a problem before services are impacted. The essential attributes of Smart Services are that they deliver better insights and predictability through software enabled tools,

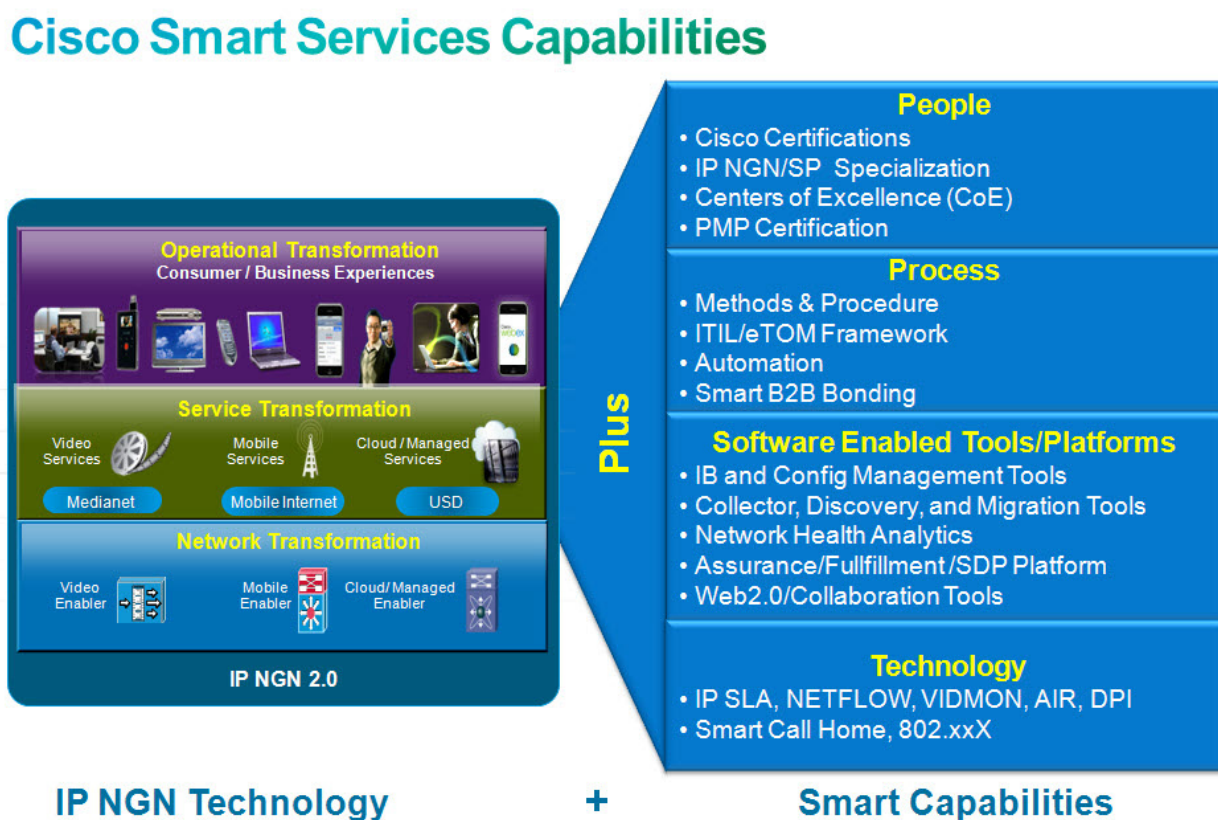
predictive analytics, and intelligent automation to enable richer business outcomes. These service offerings can be tailored to address the unique needs of service provider customers and are backed by our commitment to service excellence.

Through these Smart Services capabilities, customers receive greater access to Cisco expertise and intellectual capital to improve the quality of their network and services. As a result, network outages are minimized, performance is improved, and capacity is managed proactively. These services help improve operational efficiencies, optimize cost, and accelerate time to market for new services.

Overview of Smart Capabilities

Cisco Smart Services capabilities are delivered through a combination of our people, processes, tools, and technology. Figure 2 contains examples of capabilities that are embedded in the Cisco Services portfolio.

Figure 2. Smart Capabilities – Service Provider Segment



People

The Cisco service organization has the largest collection of Cisco Certified Internetwork Experts (CCIE), with over 3000 certified professionals supporting an installed base of more than 50 million devices. In addition, the engineers within our service provider organization go through specialized training in key IP NGN technologies such as mobile internet, video, and data center virtualization. We have expanded our CCIE program to include service provider operations. Our certified professionals have deep expertise across a broad set of IP NGN technologies and a proven track record of successful project execution delivering design, implementation, integration, operations, and optimization services. The intellectual capital our people provide is foundational to our smart capabilities.

Smart Processes

Based on our extensive customer engagements, Cisco has developed a vast body of knowledge, methods, and procedures that are an important component of our services. The Cisco Knowledge Connection has a repository of over 600 proven practices and over 90,000 technical documents. As we build new smart capabilities we are adopting ITIL[®]/eTOM standards, as appropriate.

We have further invested in automation for speed and efficiency. For example, Smart B2B Bonding allows our strategic customers and partners to connect their service delivery processes with Cisco. This system-to-system connectivity allows a service request to flow seamlessly and in real-time between Cisco and our customer's internal case management system. This collaborative synchronization of ticketing systems reduces mean time to resolve (MTTR), and increases data accuracy and customer productivity, ultimately reducing customers' operating expenditures, an industry-wide goal shared by every service provider. With Smart Bonding there are fewer communication breakdowns and processing delays are greatly reduced.

These new capabilities allow us to deliver consistent, repeatable, and globally scalable processes that drive operational excellence and are based on industry standards.

Smart Tools

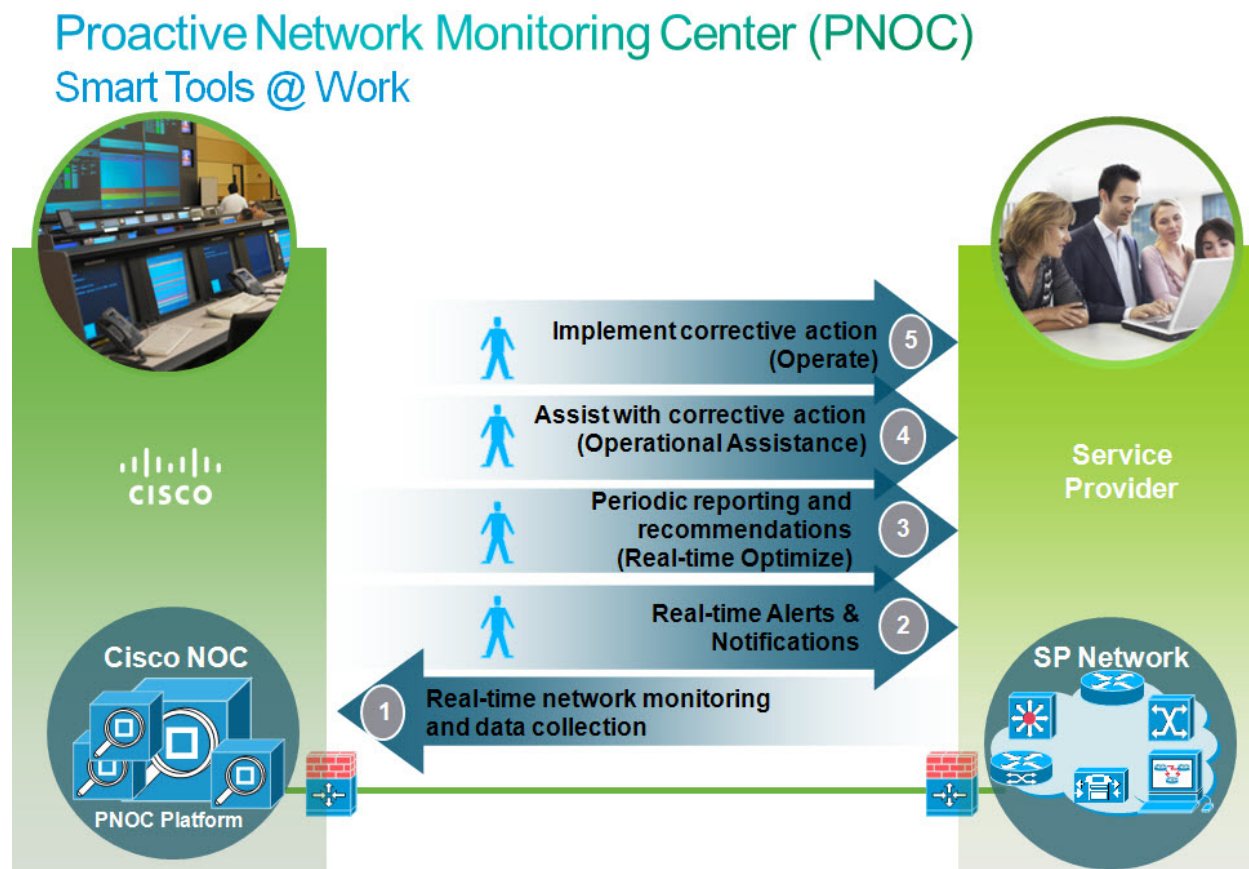
Cisco makes significant investment in software enabled tools to capture our intellectual capital and to allow us to deliver services quickly, consistently, and predictably. We continue to evolve our tools portfolio through a combination of build, buy, and partner strategies. These tools span the entire network lifecycle—plan, build, and operate—and help customers stay ahead of problems by providing insights into the health of the network and resolving them before they occur. Tools such as Network Profiler and Cisco Network Collector allow us to deliver many of the audits and assessments that are part of the network health checks within the NOS. The portfolio is being expanded to introduce new smart software enabled tools for installed base management and reporting, migration and conversion, network configuration and compliance management, and a real-time assurance platform.

- **Installed Base Management and Reporting:** This tool provides customers with intelligence on their installed base, to include contract status and coverage levels, as well as greater visibility into their inventory of equipment, enabling Cisco to provide better reporting to the customer for installed base management.
- **Network Configuration and Compliance Management:** This tool helps protect customers' business operations by providing configuration management, forensics, assurance, and enabling smooth change management compliance and disaster recovery.
- **Migration and Conversion Tools:** This family of tools can be accessed through our Easy Migrate portal, developed to help customers quickly migrate from one platform to another while mitigating any potential risks as the result of a product transition. This tool set performs device data collection, readiness assessments, configuration conversions, and generates pre- and post-deployment checks and detailed reports.
- **Proactive Network Operation Center (PNOC):** An integrated assurance platform that gives our engineers the ability to monitor networks in real-time, with proactive management faults for availability, capacity, and performance. This pre-integrated platform uses Cisco and off-the-shelf management software with embedded Cisco IC for network health analytics for increased predictability. It also includes automated remediation and a rich set of KPI trending and reporting capabilities. (See Figure 3.)

We have further invested in automation for speed and efficiency. For example, Cisco Intelligent Automation provides the ideal foundation for automating process and workflow by embedding domain knowledge, analytics, and proven practices into the network that is vital to your services and business. With Cisco Intelligent Automation throughout the network, it rapidly and precisely responds to changes or incidents to protect the quality of services and assure the end user experience.

Cisco smart tools not only allow us to deliver rich insights, analytics, and remediation, but customers can also optimize their investment in tools and resources by leveraging Cisco's investments, thereby accelerating their time to market.

Figure 3. Assurance Platform



Smart Technology

Cisco smart tools leverage underlying smart technologies that are the embedded intelligence in our products. They are key to providing actionable insights into the health of the network.

Cisco's **VidMON** solution is an in-line video monitoring over packet transport solution, capable of IP video performance monitoring at line rate. VidMON technology enables a more efficient, lower cost video monitoring solution that addresses operational concerns. The Cisco **Video Quality Experience (VQE)** application offers service providers a set of technologies that improve the quality of IPTV services and subscribers' viewing experience. Part of a Cisco end-to-end solution that builds video awareness into the network infrastructure, VQE addresses the issue of video quality from both a network infrastructure and a video technology perspective. The **Video Assurance Management Solution (VAMS)** leverages these features to deliver services to help assure the video experience.

IP SLA uses active traffic monitoring—the generation of traffic in a continuous, reliable, and predictable manner—for measuring network performance (delay, jitter, packet loss). The PNOC assurance platform leverages IP SLA to monitor key parameters that impact performance and service quality.

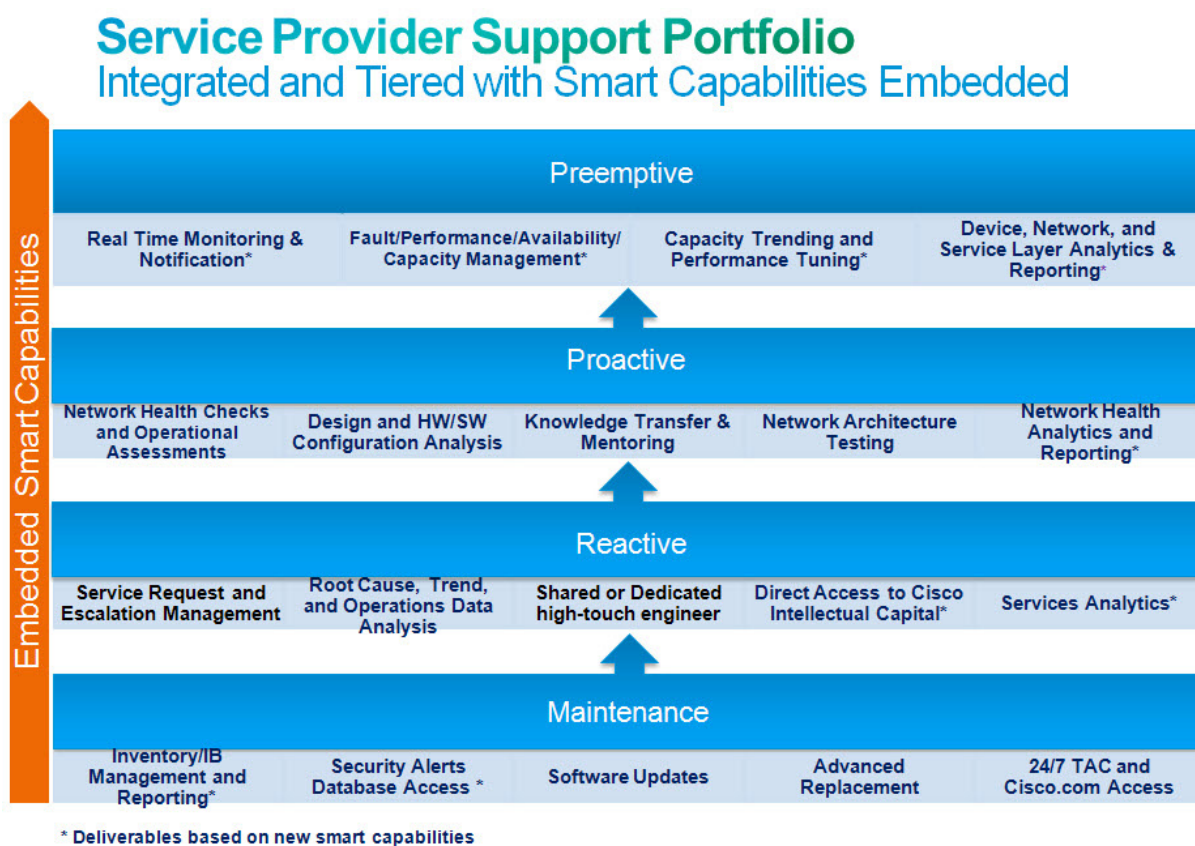
Deep Packet Inspection (DPI) featured in Cisco edge products provides greater insights into the application and subscriber traffic. Our mobile and video NOS leverages this intelligence to provide customers with recommendations to optimize their network through better traffic management; or to segment their market better by creating a tiered service offering to grow revenue through new B2B and B2C monetization models.

Smart Call Home is a device-based feature that allows Cisco routers and switches to “phone home” and send real-time alerts and notifications with self-diagnostic information that help predict problems before they occur, and help speed diagnosis and resolution of issues when they do arise. Cisco has even built in protocol-level embedded diagnostic tools to aid in the troubleshooting of very complex application-layer network traffic issues that are difficult to resolve.

Evolving the Service Portfolio to Meet Customer Needs

Cisco continues to embed these smart capabilities throughout its services and evolve its portfolio to address the full spectrum of service provider requirements; from maintenance to reactive, proactive, and preemptive support for our IP NGN solutions. At each service tier we will introduce additional deliverables enabled by these new smart capabilities. The focus will be on enhancing the value of our support services by providing customers with greater access to Cisco intellectual capital, which delivers actionable insights and better predictability to manage outcomes backed by appropriate SLAs.

Figure 4. Service Provider Day 2 Support Portfolio



At the maintenance level, new services analytics capabilities, deeper access to Cisco intellectual capital, and installed base discovery and reporting functionalities will be introduced and added to the SP Base service.

At the reactive level, new smart tools will allow Cisco TAC to leverage network view and correlation techniques to reduce network incidents and enable faster time to resolution as part of our FTS service offer.

At the proactive level, we are expanding our NOS portfolio with audits and assessments to cover new IP NGN platforms, as well as data center, collaboration, video, and mobile solutions. We have also introduced the Network Health Analytics and Reporting deliverable as part of our NOS portfolio. Cisco Migration Services for IP NGN,

launched last year, makes extensive use of our conversion tools, templates, and automation. This helps service providers with proactive installed base lifecycle management, smooth product transition, and risk mitigation.

Assurance Services for IP NGN builds upon our NOS offer and leverages the newly created PNOCC platform to deliver preemptive support through real-time network monitoring, predictive analytics, and automated remediation for fault, capacity, availability, and performance management.

Smart capabilities are also being introduced into our partner offers. Collaborative Professional Services (CPS) is a portfolio of services that provides our partners with access to Cisco intellectual capital and tools to help them profitably expand or build new professional services practices and accelerate their delivery of Cisco architectural solutions. The CPS portfolio includes assessment services, development and guidance services, and practice accelerator.

As we evolve our service portfolio, we will rationalize and integrate our Day 2 Technical Services (SP Base) and Advanced Services (FTS/NOS) under a common name and tier them based on the services level outlined in Figure 4. This will simplify our portfolio and provide our customers and partners with the flexibility to tailor services to their specific needs.

Cisco Smart Services strategy builds upon our IP NGN technology leadership to address the requirements of service providers. We do this through people, process, and tools that complement service providers' capabilities and help assure quality of services, improve operational efficiencies, reduce cost, and accelerate time to market.

For More Information

To learn more about Cisco Services for service providers, visit

http://www.cisco.com/en/US/products/ps6889/serv_category_home.html

Additionally, the Cisco.com Support Website offers a full range of online resources. Please be sure to visit the award-winning support website and support community.

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