



Company Profile

**Cisco Prime for Service Providers: network
management systems**

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Company summary

- Founded in 1984, Cisco is one of world's leading suppliers of IP-NGN network equipment, particularly in carrier-grade and enterprise routers and switches. It also supplies network management, subscriber/CPE management and operations support systems providing lifecycle management for creating and operationalising services, primarily on its own equipment.
- Cisco has transformed its OSS portfolio from an unstructured and disparate set of software components into a consolidated and highly modular product suite called Cisco Prime. Cisco Prime for Service Providers targets management of IP-NGN, cloud, mobile Internet and video infrastructure. Cisco extended its Cisco Prime network management systems (NMS) portfolio into its strong enterprise business unit with Cisco Prime for IT.
- Cisco Prime for Service Providers is the focus of this profile. It has been built partly ground up and partly through the acquisition of assets such as Axioss from Comptel in 2011, which supplemented Cisco's core elements and network management capabilities with service fulfilment functionality. Cisco can now offer a comprehensive end-to-end service lifecycle management solution to CSPs.
- Cisco Prime architecture provides a comprehensive management solution to automate the design, fulfilment, assurance and management of advanced IP services such as video, mobility and managed cloud services.

Figure 1: Cisco company facts [Source: Analysys Mason, 2013]

Founded	1984
Offices	San Jose (HQ), worldwide
Employees	72 360
Regional focus	Worldwide
NMS revenue	USD363 million, 2011
Customers	AT&T, Bell Mobility, China Telecom, Comcast, KPN, NTT Plala, Shaw Communications, Telenor, TIM (Brazil) and Verizon Wireless
Selected key customers ¹	Enventis, Inmarsat, Integrated Broadband Services (IBBS), Unitymedia
Partnerships	N/a
Company status	Publicly owned

¹ Cisco's restriction on naming clients has limited our ability to provide more transparent customer references for this profile.

Company summary: financials

- Cisco derives more than half of its revenue from North America (NA), and most of its revenue comes from Tier-1 CSPs – particularly AT&T. However, it is making significant headway in other regions, predominantly by replacing incumbent customers such as Juniper and Motorola, and winning businesses with CSPs who are migrating to all-IP networks.
- The company won some important contracts with Tier-1 CSPs such as AT&T, Bell Mobility, China Telecom, Comcast, KPN, NTT Plala, Shaw Communications, Telenor, TIM (Brazil) and Verizon Wireless in 2011.
- Cisco is focused on the developed Asia–Pacific (APAC) region, with Japan being its strongest market. Alcatel-Lucent (ALU) and Huawei are Cisco’s main competitors in the IP market. Cisco got stronger against ALU in Europe in 2011. However, Huawei’s aggressive pricing continues to be a challenge for Cisco and other NEMs.
- Continuing economic uncertainty in Europe has dented Cisco’s revenue growth opportunities, while most of the CSPs in the NA market have already switched to IP NGN or are in the process of migrating, making it a saturated market. Building sustained credibility after a significant rebranding exercise, like Cisco Prime, will be a gradual process.

Figure 2: Cisco’s NMS revenue, worldwide, 2009–2011 [Source: Analysys Mason, 2013]

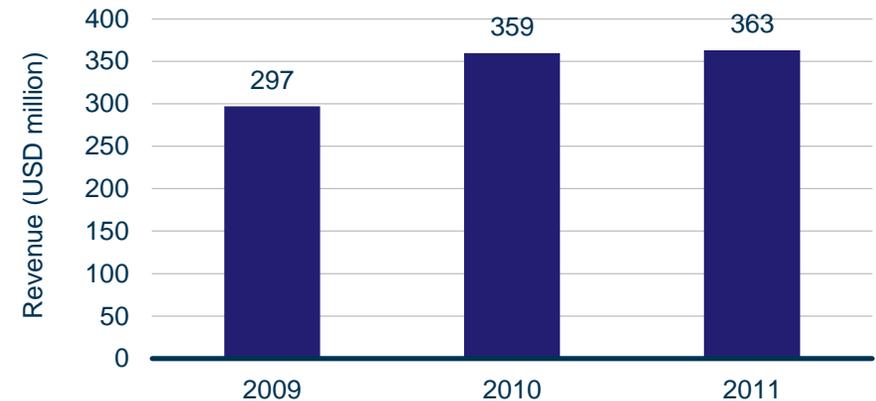
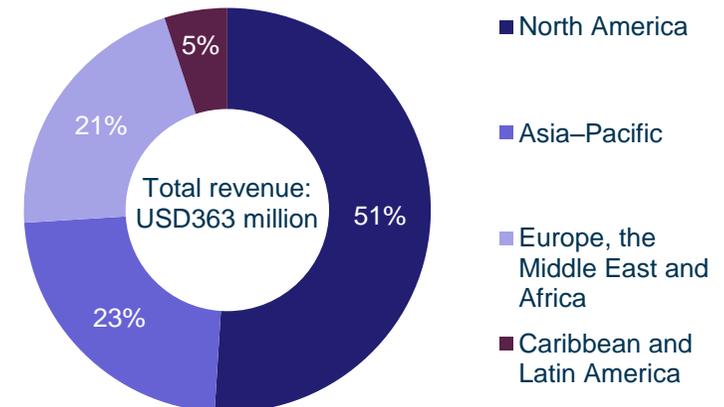


Figure 3: Cisco’s NMS revenue by region, worldwide, 2011 [Source: Analysys Mason, 2013]



Company summary: strategic direction

- Cisco has a strong heritage in IP networking technologies, and continues to hold third place in Analysys Mason's business data NMS segment. Cisco Prime is gaining traction because it operationalises Cisco's successful ASR 9000 Series routers for IP-NGN, IP RAN aggregation for mobile backhaul, broadband, video and enterprise services, such as collaboration, and service assurance.
- Cisco's main competitors are Alcatel-Lucent, Ericsson, Huawei and Nokia Siemens Networks. However, Cisco Prime offers an integrated fulfilment and management solution for all Cisco devices, a capability that no other network equipment manufacturer offers. This has played a key role in enabling Cisco to win major contracts among the customers who have Cisco equipment installed base.
- Cisco plans to further augment its OSS portfolio with real-time network analytics capabilities. To this end, in May 2012 it announced the acquisition of privately held Truviso, which provides scalable, real-time network data analysis and reporting software. This acquisition will give Cisco the ability to provide real-time visibility into network usage and services to increase operational efficiencies and drive new revenue streams for CSPs.
- Cisco has set out a software defined network (SDN) strategy with its Open Network Environment (ONE). This is supported by Cisco's investment in Nuova Systems in 2008 and the recent USD100 million investment in Insieme in April 2012.

Figure 4: Cisco's NMS revenue by sector, 2011 [Source: Analysys Mason, 2013]

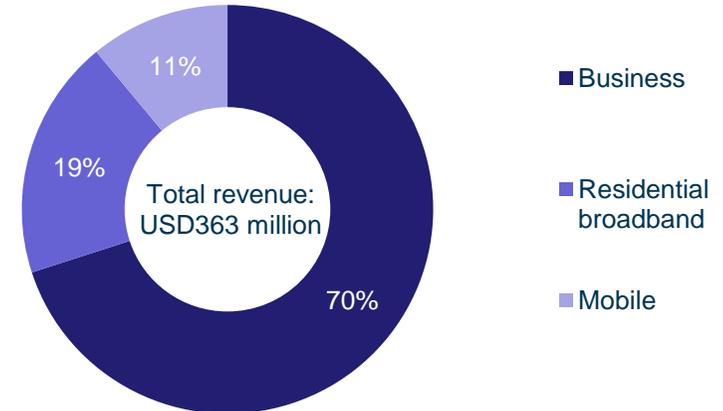
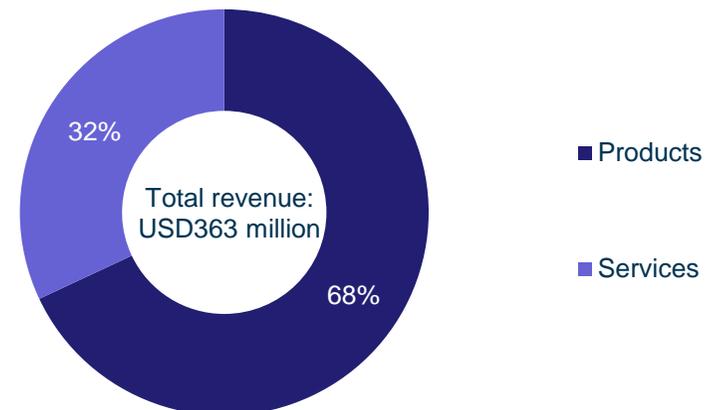
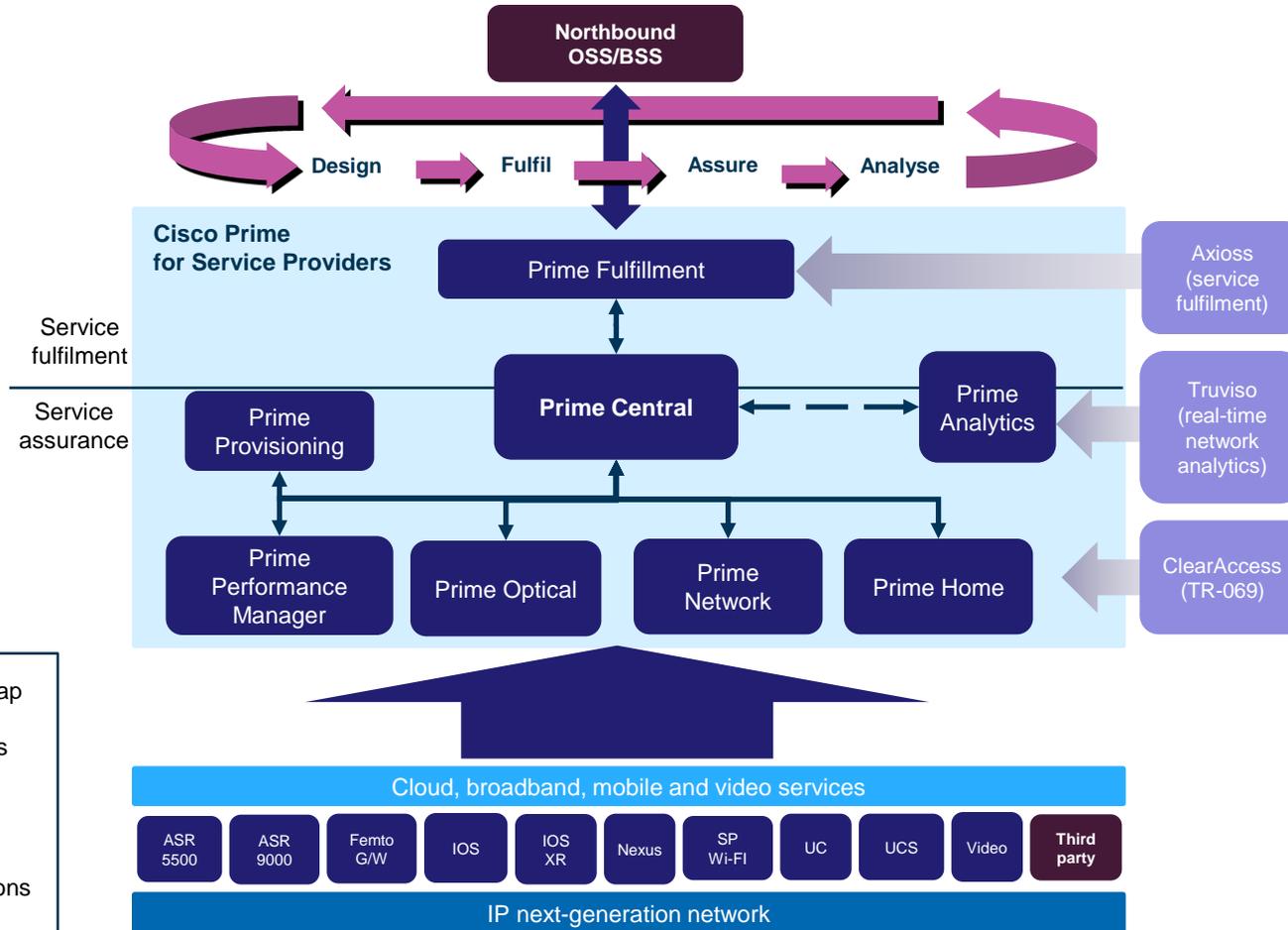


Figure 5: Cisco's NMS revenue by products or services, 2011 [Source: Analysys Mason, 2013]



Cisco Prime network management systems overview

Figure 6: Cisco's NMS overview [Source: Analysys Mason, 2013]



Product summary [1]

Figure 7a: Cisco's OSS products [Source: Analysys Mason and Cisco, 2013]

<i>Product (and modules)</i>	<i>Analysys Mason segment</i>	<i>Description</i>
Cisco Prime Carrier Management <ul style="list-style-type: none"> • Cisco Prime Central • Cisco Prime Network • Cisco Prime Performance Manager • Cisco Prime Provisioning • Cisco Prime Optical 	NMS – business services and Residential broadband	<p>Cisco Prime Carrier Management is a modular suite of software applications with a graphical user interface (GUI) for CSPs that provides integrated lifecycle management of next-generation networks and services, by automating network design, fulfilment, assurance and analysis for Cisco equipment and technologies in a multi-vendor IP environment. It supports IP NGN, mobile Internet, and cloud-based networks.</p> <p>Cisco Prime Carrier Management's modules ensure that CSPs can select the software modules specific for their network and operations requirements. These modules include Prime Network (for all IP-based Cisco network equipment), Performance Manager, Provisioning (for Cisco network resources) and Optical (for managing Cisco optical equipment). Prime Central is the manager or managers for these modules – the 'single pane of glass' NMS view.</p>
Cisco Prime Fulfillment	Service fulfilment	<p>Cisco Prime Fulfillment is a modular, end-to-end service fulfilment solution that facilitates highly efficient co-ordination of business and operational processes for service design, creation and delivery across multiple network domains. It is designed to handle multi-vendor, multi-technology environments. Cisco Prime Fulfillment helps enable CSPs to assemble and deliver products and services that span IP and Multi-Protocol Label Switching (IP/MPLS), cloud, data centres and home networks.</p>
Cisco Intelligent Automation for Cloud	NMS – Business services	<p>Cisco Intelligent Automation for Cloud (Cisco IAC) is a cloud management software solution that enables on-demand provisioning of virtual and physical resources in private, public, and hybrid cloud environments. The solution includes a self-service portal, service catalogue, orchestration engine, policy-based controls and advanced cloud management capabilities that are fundamental to CSPs delivering cloud services. The software is optimised for Cisco architectures with Cisco UCS, but can integrate northbound OSS and service management tools in a multi-vendor CSP environment.</p>

Product summary [2]

Figure 7b: Cisco's OSS products [Source: Analysys Mason and Cisco, 2013]

<i>Product (and modules)</i>	<i>Analysys Mason segment</i>	<i>Description</i>
Cisco Prime Collaboration	NMS – Business services	Cisco Prime Collaboration provides automated voice and video conferencing provisioning and real-time monitoring and proactive troubleshooting across Cisco Unified Communications (UC) and Cisco TelePresence systems. Its initial deployment and 'day-2' additions and changes are highly automated. Cisco Prime Collaboration also provides real-time monitoring and diagnostics for the underlying Cisco transport infrastructure for Cisco UC and TelePresence solutions. It provides end-to-end service quality assurance for Cisco UC and TelePresence solutions.
Cisco Prime Subscriber Management <ul style="list-style-type: none"> • Cisco Prime Home • Cisco Prime Network Registrar • Broadband Access Center (BAC) 	NMS – Residential broadband	<p>Cisco Prime Subscriber Management suite comprises the following three products:</p> <ul style="list-style-type: none"> • Cisco Prime Home provides a standards-based (TR-069) remote management and provisioning solution that provides visibility into home networks. It provides customer support tools, a consumer portal and analytics to simplify home network set-up and support by CSPs. • Cisco Prime Network Registrar provides integrated, scalable, reliable DNS, DHCP and IP address management (IPAM) services for both IPv4 and IPv6. The solution offers centralised, scalable, high-performance provisioning of IP addresses and activation of network devices and services. IPv6 support helps automate and manage the transition from IPv4 to IPv6, and the solution allows dual-stack (IPv4 and IPv6) deployments on a single server. • Broadband Access Center provides cable operators with the ability to automate network configuration, provisioning and management for data, voice and video applications.
Cisco Prime Analytics	Service management	Cisco Prime Analytics is on the product roadmap following the 2012 acquisition of Truviso. Cisco aims to differentiate with this new product in the Cisco Prime portfolio by providing near real-time 'on-the-fly' network analytics faster than its competitors on Cisco networks.

Significant (public) customers

Figure 8: Cisco's significant (public) customers [Source: Analysys Mason, 2013]

<i>Customer</i>	<i>Country</i>	<i>Scope</i>
Inmarsat	UK	Cisco provided its Cisco Prime Fulfillment and Provisioning solutions and a new Cisco high-performance satellite network router, to deliver video and multimedia content services over the new USD1.2 billion Global Xpress (GX) satellite network.
Integrated Broadband Services (IBBS)	Americas	<p>IBBS deployed Cisco Prime Network Registrar to automate configuration and delivery of DNS and DHCP services for more than 250 cable operators across North and South America and achieved the following business results.</p> <ul style="list-style-type: none"> • Grew to 250 customers managing more than 1 million cable modems. • Achieved better economies of scale and lower costs compared with any other solution. • Never encountered a customer business requirement it could not meet.
Eventis Telecom	USA	Eventis (a wholesale transport provider in Minnesota) redesigned its points of presence (POPs) in Minneapolis and Duluth with the Cisco ONS 15600 multiservice switching platforms (MSSP) and used Cisco Prime Optical to centralise operations, increase availability, and improve control costs of its Cisco optical network.
Unitymedia	Germany	<p>Cisco implemented Cisco Prime Network Registrar in four months to help Unitymedia achieve the following benefits.</p> <ul style="list-style-type: none"> • Simplified infrastructure for managing DNS and DHCP registration. • Reduced costs associated with scaling up customers. • Cost-effectively satisfied complex privacy regulations. • Helped ensure optimal customer experience.

Other undisclosed significant customers

Figure 9: Other undisclosed significant Cisco Prime customers¹ [Source: Analysys Mason, 2013]

<i>Customer</i>	<i>Country</i>	<i>Scope</i>
Worldwide satellite provider	Worldwide	<p>Cisco Prime Fulfillment, with an integration to IBM Tivoli NetCool to create a single service activation and management view in order to:</p> <ul style="list-style-type: none"> • accelerate order fulfillment by 50% • increase service quality and reliability • reduce costs for prototyping new services.
Four cable operators	North America	<p>They have invested in automated, scalable broadband solutions from Cisco to improve management of their Cisco deployed equipment to stay competitive, and to improve customer experience and reduce truck-rolls.</p> <ul style="list-style-type: none"> • Two have implemented Cisco Prime Home. • One has implemented Cisco Prime Network Registrar and Broadband Access Center. • One has implemented Cisco Prime Network Registrar and Prime Optical.
Three CSPs	Americas and Europe	<p>All have deployed the Cisco Prime Carrier Management suite, including some third-party device/equipment support for management of networks with the following characteristics.</p> <ul style="list-style-type: none"> • Americas CSP: 2000+ devices, with Cisco and DragonWave in the core and mobile areas respectively, that required discovery, inventory, topology, fault and performance integration to manager of managers. • South European CSP: 1300+ cell sites supporting multiple L3 services on the metro network, providing IP SLA, QoS, and L3 VPNs deployed for traffic segmentation. • Western European CSP: 1000+ Cisco edge routers and third-party cell site routers, with increasing mobile data traffic.

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Analysis: strengths, weaknesses, opportunities and threats

Strengths

- Increased market share in the residential broadband NMS segments, at the expense of weaknesses in Motorola and Juniper Networks. Strong presence in NA and developed APAC, and increasing presence in all other regions.
- Differentiates with its multi-vendor Cisco Prime Fulfillment solution from the Axioos acquisition.
- Retains its IP products and solutions heritage as CSPs move to all-IP networks.
- Entering the EPC market with its ASR 5000 product.

Opportunities

- Explore fixed–mobile convergence opportunities with its LTE core, IP-NGN, Wi-Fi and femtocells products.
- Strengthened position in residential market with acquisition of ClearAccess for managing in-home devices with TR-069.

Weaknesses

- Most of its business is concentrated in NA.
- Still has a hardware-focused sales heritage and has lost some credibility in terms of its IP NMS capabilities.
- Lacks a substantial services business, which can lead to a disconnect in customer requirements and expectations, as compared with Cisco's NEM competitors.

Threats

- Outside NA, Huawei, followed by ZTE, pose the most significant threat to Cisco in the business services segment.
- Alcatel-Lucent is still a strong worldwide competitor.
- Becoming distracted by its Enterprise business, which could slow its momentum with Cisco Prime for Service Providers.

About the authors



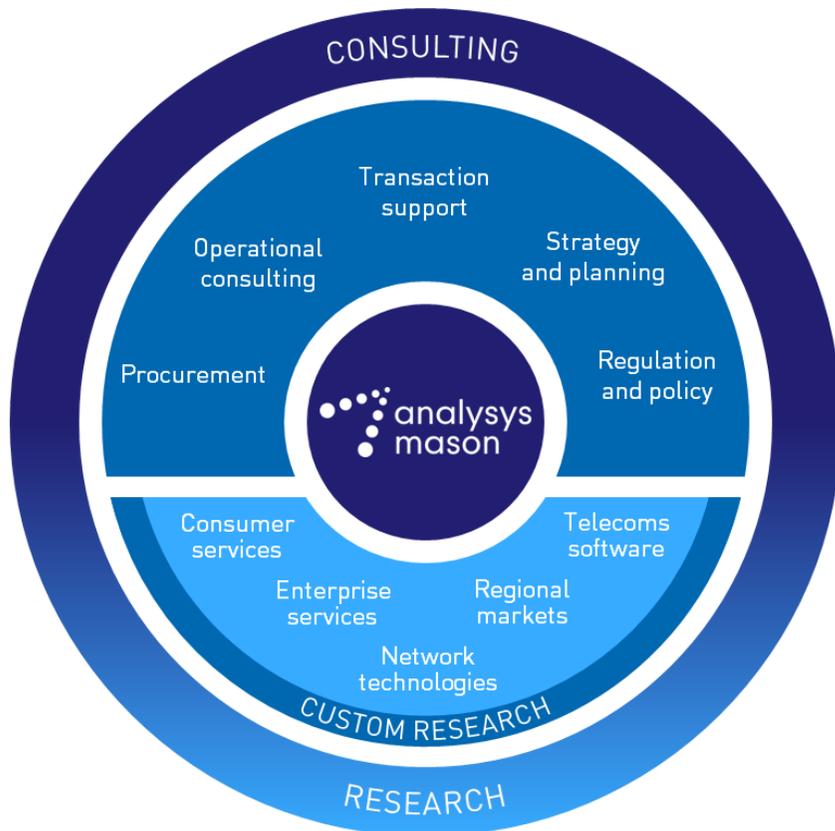
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