



Research Report

How IBM Is Building Market Share in the CSP Market

Introduction

There is a major shift occurring the telecommunications (telco) and cable markets as telcos and cable suppliers reshape themselves into “communications service providers” (CSPs).

- Over the past few decades telcos have focused on migrating customers away from analog (voice) services to a variety of digital services (including voice-over-IP, high speed Internet DSL, digital IPTV services, video on demand, IP conferencing, VPN hosting, and various mobile services) — selling more bandwidth as their service offerings expanded.
- Cable providers started out as suppliers of cable television services and then moved into voice/data services. Cable providers are now expanding into the same markets as telcos.

Further, the migration of many former land-line subscribers to mobile/wireless computing is creating new demands as well as new opportunities for CSPs.

- Mobile users are demanding different types of services. Where carriers once dealt with voice connections, they are now dealing with: a) high bandwidth pictures and video, and b) interactive sessions, like texting, involving both humans and devices, that create many additional call detail records for that eventually offer CSPs opportunities for analysis.

In the future, CSPs are planning to expand geographically into new markets in new geographies; and increase their service offerings (to include web conferencing; increased video-based collaboration; 3D sensory Internet experiences; and new, instrumented business applications come into play).

But as CSPs seek to deliver more and more services, they are running into several challenges. Information technology costs need to be controlled. Customer experience needs to be improved. And systems need to be designed that can more easily accommodate the deployment of new services. Further, quality-of-service needs to be improved.

In this *Research Report*, *Clabby Analytics* describes some of the opportunities that CSPs are pursuing, and some of the challenges they are facing as they attempt to expand their service offerings while attempting to provide unified, seamless, integrated customer experiences across different network types. Additionally, we take a closer look at IBM’s CSP industry framework, an architectural design that can help CSPs reliably deliver services using sophisticated, integrated hardware/software and service products from IBM, as well as at IBM’s Netcool and Tivoli Event Manager product offerings (products that can help CSPs overcome network silo problems).

The Opportunity for CSPs

There are actually several business growth opportunities in the CSP marketplace. The first is the traditional growth opportunity: sell more bandwidth. This is followed by opportunities to sell applications and services (including managed services) over their existing networks. And the third is selling 3rd party applications over CSP networks (and taking a piece of the action for doing so).

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When it comes to selling more bandwidth, all major CSPs are pursuing the “quad play” — selling Internet/landline/cell/phone/TV services over their respective networks. Landline sales drive bandwidth, but high speed internet, mobile, and IPTV/video-on-demand services drive substantially more bandwidth. And the market for these types of services is growing rapidly worldwide, especially in emerging growth countries (to be discussed in more depth later in this report using *Bharti Telecommunications* as a case study).

But other bandwidth-consuming technologies are poised to take off in years to come, especially services related to high quality IP conferencing (web conferencing and collaboration); streaming video; and business services. These all present growth opportunities for CSPs to offer these types of services directly; or to offer such services by partnering with 3rd parties (for example, a company known as Masergy offers advanced, high quality IP conferencing — and has partnered with numerous telecommunications companies and CSPs around the world to offer its services. More information on Masergy can be found in this *Clabby Analytics* report available for free at: <http://www.clabbyanalytics.com/uploads/MasergyFinal.pdf>). Other growth opportunities can be found in driving voice enabled Internet communications; in customized services; in tailored offerings; in business services; in hosting VPNs; in application services; and in driving new 3D technologies over CSP networks.

In the future, CSPs will provide the underlying network services to drive sensory experiences over the network, and to drive business application cloud services across various network types. Further, CSPs will expand their reach, delivering all kinds of services to emerging growth countries. Further, huge growth opportunities to increase bandwidth sales are also on the horizon as machines communicate with other machines, and as instrumented devices (such as sensors or assets with built-in processors) communicate with intelligent back-end controllers.

Using Advanced Systems/Software/Services to Enable CSPs to Reach New Markets

Clabby Analytics recently visited an IBM innovation center located in La Gaude, France for a briefing on IBM’s plans to pursue various industry markets including the telco (CSP), public sector, banking, retail, and energy and utility market segments. At this center we met with IBM chief technical officers (CTOs) within its industry marketing divisions. And what we learned from the telecommunications industry CTO is that IBM’s CSP efforts focus on:

1. Taking costs down and out;
2. On customer experience management (so communications service providers can do a better job of retaining subscribers); and,
3. On the adoption of new business models (helping CSPs generate more annual revenue per user [ARPU]; as well as helping CSPs integrate new sources of revenue with existing infrastructure).

IBM’s approach is based upon using “smarter systems” (pre-integrated, highly-tuned systems/software platforms) and a variety of professional services, to deliver highly reliable systems that can meet the CSP’s needs for the most demanding analytics and data warehouse applications, as well as needs related to the management of assets residing in disparate networked environments. What makes these smarter systems special is that they provide “deep integration” for telecommunications applications (especially in the area of telecommunications business analytics). IBM engineers finely tune smarter systems at the database level (DB2); at the analytics level (with IBM’s Cognos); at the middleware and hardware layers (on IBM System p and System z) — and by so doing manage to achieve extremely impressive performance. IBM also provides its customers with a telco data warehouse (TDW) — a template for organizing a schema that provides organized access to most of the features/data a telco would need to gather from their warehouse.

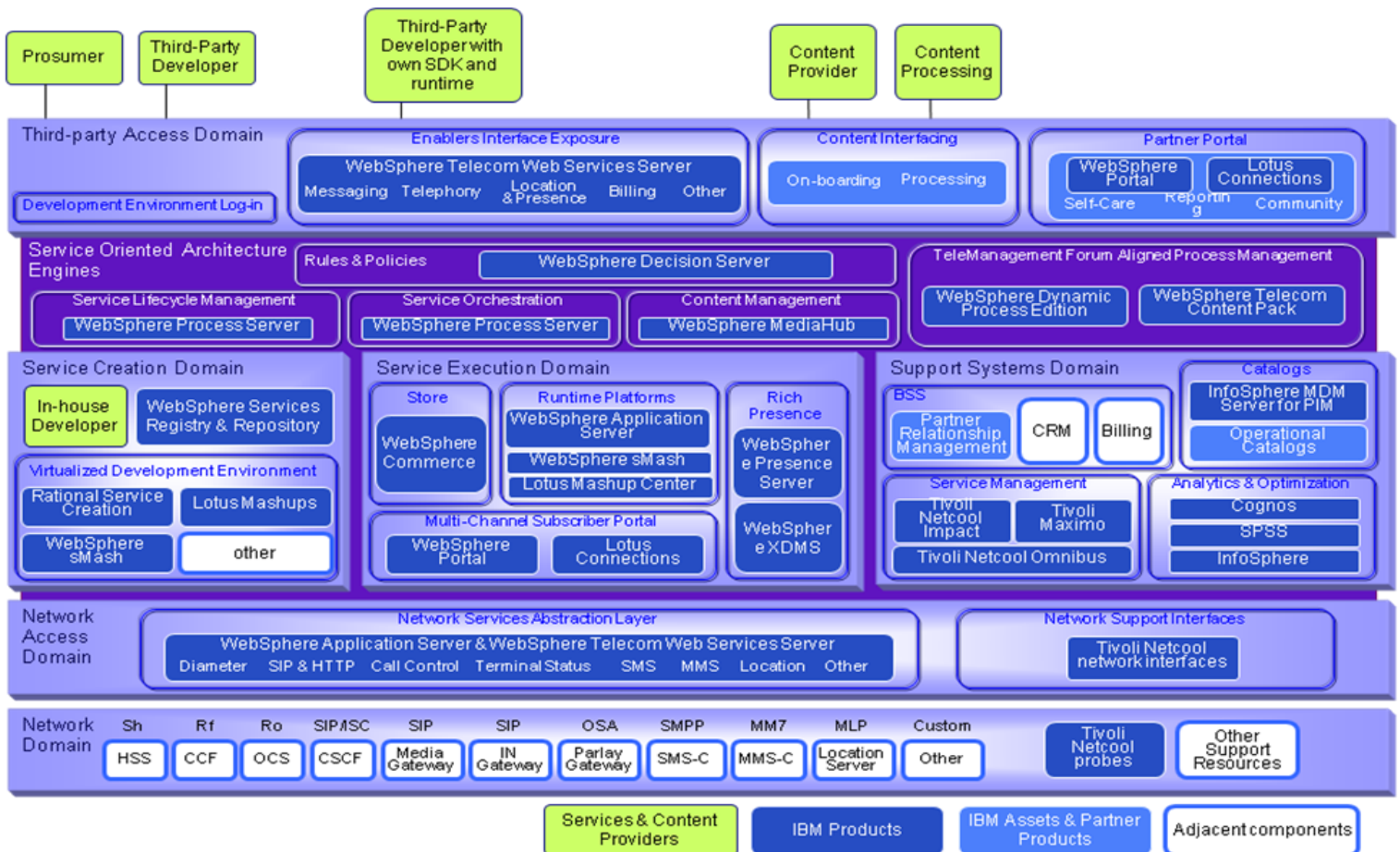
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The Big Eye-Opener

The big “eye-opener” during this briefing was an IBM chart (see Figure 1) that describes the breadth of IBM’s offerings for the CSP marketplace. A closer look at Figure 1 shows several “domains” — each focusing on cost reduction, customer experience management, and/or service management. Figure 1 then goes on to show which IBM products and services can be used to build-out each domain.

For instance, if a CSP wants to focus on improving its customer experience, it can use the products shown in the “Support Systems Domain” (middle, right in Figure 1) to manage subscription databases, perform fulfillment, and issue bills. Further, that CSP can also graphically see what is going on in a given networked environment using IBM’s Netcool tool (described in greater detail in the next section). And that CSP can also use several business analytics software products to formulate and issue queries against a database (including IBM’s Cognos, SPSS, and InfoSphere software). Using these tools and utilities, CSPs can better understand their customers buying patterns and service expectations, and by so doing, CSPs can improve their customer’s experiences — potentially leading to greater retention of subscribers.

Figure 1 — IBM’s Telco/CSP Software Offerings for a Service Delivery Platform



Source: IBM — November, 2010

Clabby Analytics was especially intrigued by IBM’s use of its Netcool product (shown in the network domain, network access domain, and in the support systems domain) — and the use of Netcool with a Tivoli product known as Tivoli’s Maximo Event Manager. We saw these products demonstrated at IBM’s advanced, new data center in Raleigh, North Carolina — and we also saw them featured in the innovation center in La Gaude, France.

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The reason that these two products impressed us so much is that they can be used to better understand where breakdowns in service are occurring in underlying siloed networks — and by being able to graphically visualize these breakdowns, network administrators can rapidly understand where problems exist and take corrective actions to immediately remedy those breakdowns. Accordingly, these products can be used to help overcome a major problem that the CSP market faces: managing quality of service across various network types (these various network types are shown in the network and network access domain sections at the bottom of Figure 1).

The following section takes a closer look at IBM's Netcool and Tivoli's Maximo Event Manager.

The Big Network Domain Challenge: Ensuring Quality-of-Service Across Networked Silos

For decades, the telcos grew by delivering voice services over short and long distances (POTS — plain, old telephone service). When computers became available, the next logical growth opportunity was to stream bits-and-bytes across analog (voice) lines. Improvements in digital telecommunications technologies then lead to a move to drive as much traffic as possible over high quality digitized networks (so analog signals were moved to digital, and voice to data transmission — and the Internet drove huge increases in demand for more bandwidth to meet digital demands).

Moving from analog services to digital services was a huge expense for the telecommunications industry — and for enterprises that had to move away from analog PBX equipment to digitized equipment. But that expense was recouped as the market demanded more bandwidth as more and more digital applications came on line.

The Problem: Managing Across Multiple, Disparate Network Types

Another major expense for CSPs has been the building-out of mobile, cable, and satellite communications networks — and then gluing them together with landline services in order to enable users or machines to communicate across multiple network types without paying a penalty in terms of quality of service. Unfortunately, gluing together these network types — and even managing the service levels on each disparate network — has proven extremely challenging for the CSP industry. For instance, cell towers drop off-line, or atmospheric conditions interfere with satellite communications — and some CSPs are unaware of these service failures until customers call to complain. Further, network congestion (spikes in usage) also degrade service.

What the telecommunications/CSP industry needs to overcome these kinds of problems — and to deliver consistent quality of service to all users — is better, cross-silo network management tooling. Several vendors offer this type of tooling — but IBM is emerging as a leader in the CSP market due to the breadth and depth of its network and asset management products, as well as the huge investment that it is making to capture CSP marketshare. The next section explains how IBM's Netcool and Tivoli Event Manager work together to create cross-silo, unified CSP systems/storage/network environments that help CSPs meet their customer's quality of service requirements. The following section provides several case study examples of how CSPs are using these tools to expand their business reach. And the final section describes some of the investments that IBM is making in order to maintain its leadership position in this fast-growing market.

Managing Across Silos: IBM's Netcool and Tivoli Maximo Event Manager Product Offerings

Netcool is a unified service management platform that provides real-time performance and service management to monitor and manage critical services, applications and networks. Netcool increases network availability and performance and improves quality of service. Netcool provides visibility into how network issues will impact customers, enabling proactive management and providing customer service agents with real-time status. IBM's Tivoli Maximo Event Manager Asset Manager can be closely linked to Netcool, providing a granular view of how assets are behaving within various underlying networks.

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A closer look at the modules that comprise the Netcool and Maximo asset management products shows that:

- *IBM Tivoli Netcool Impact* – is a product that
 - Delivers real-time monitoring of business events and activity based on pre-set customizable policies, execute automated actions from any event, incident or problem;
 - Links IT events to business context and prioritizes automated actions based on business impact (customer, user process etc.);
 - Consolidated web-based dashboard view integrates and displays data from a variety of sources, simplifying management and speeding resolution.
- *IBM Tivoli Netcool/Omnibus* — is a product that provides
 - Service management for business applications, network devices, Internet protocols and security devices;
 - Agent-based software gathers and correlates thousands of business and IT events for real-time fault monitoring;
 - Automated correlation and isolation enables prioritization of problem resolution
 - Generate alarms based on user-defines thresholds;
 - Consolidated dashboard view provides single view of operations;
 - Customizable display of events, service views, and operational indicators; and,
 - Integrates with IBM's Tivoli Monitoring family to track performance/user experience.
- *IBM Netcool Carrier VoIP Manager* — is a product that:
 - Is integrated with Tivoli Netcool components;
 - Monitors critical carrier VoIP components, including: Media Gateway Controller, Signaling Gateway, Media Gateway, Media Server, as well as Session Border Controller to ensure quality of service;
 - Provides a fault, performance and service management view of your VoIP infrastructure; and that
 - Provides real-time insight into VoIP service availability, performance and quality.
- *Tivoli's Maximo Event Asset Management* can be used to provide:
 - Asset lifecycle and maintenance management on a single platform;
 - Manages asset deployment, specifications, monitoring, calibration, costing and tracking;
 - Supports long and short-term planning, preventive, reactive and condition-based maintenance, schedule management, resource optimization and key performance indicators;
 - Plans inventory to meet maintenance demand with parts available when and where they are needed;
 - Manages vendor contracts - supports purchase, lease, rental, warranty, rate, master, blanket and user-defined contracts;
 - Aligns service levels with business objectives by defining service offerings and establishing service level agreements (SLAs); and,
 - Flexible business process configuration platform and scalable service oriented architecture.

The combination of Netcool and Tivoli Maximo Asset Management is helping CSPs overcome network breakdowns — leading to improved customer service. The next section describes how some customers are using these products to improve service levels, drive down costs, and to create competitive advantages.

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Case Studies and Investments

The following case studies provide some insight into IBM activities in the CSP market:

1. the ZON Multimedia study illustrates how IBM is winning market share versus other network management software providers;
2. the Bharti case study shows how IBM is helping CSPs move into emerging growth countries; and,
3. the final subsection in this section describes some of the investments that IBM is making to better serve the CSP marketplace.

ZON Multimedia — Out-managing HP's Network Node Manager

ZON Multimedia, is the leader of the Pay TV market in Portugal, and is Portugal's second largest Internet provider. Further, ZON Multimedia is the country's leading provider of triple play solutions, offering multiple services across several platforms: cable, satellite and mobile.

What is interesting about this case study is that ZON Multimedia recently made a move from managing its disparate network types from Hewlett-Packard's Network Node Manager to IBM Tivoli Netcool. ZON needed an intelligent network management and IT monitoring solution that could aggregate the various components of its infrastructure into a centralized view. While IT and networking have traditionally been managed separately, IBM's integrated service management solutions connect these domains to deliver greater visibility, control and automation to the enterprise.

IBM's holistic approach to ZON's challenge, sophisticated offerings and professional services were key differentiators that helped IBM win over competitors such as HP. In this case, IBM replaced HP Network Node Manager with IBM Tivoli Netcool and other Tivoli products.

According to Paulo Ribeiro, board member of ZON TVCabo, a company from ZON Multimedia group, "a superior centralized platform for operational management is the foundation to meet ZON's future technical and business needs more efficiently. IBM software enables our network operations and IT staff to hone in on the most critical problems and even automate the isolation and resolution of those problems before impacting customers."

In short, ZON Multimedia has chosen IBM because IBM Tivoli products offer broader and deeper integration services than ZON believes IBM's competitors offer. And, in the end, with these broader, deeper, and better integrated services, ZON believes that it can better meet the service level requirements of its customers across its multiple, varied network and systems types.

Transferring Skills to Emerging Growth Countries: Bharti Telecommunications

Bharti Airtel Limited is a leading global telecommunications company with operations in 19 countries across Asia and Africa. The company offers mobile voice and data services, fixed line, high speed broadband, IPTV, DTH, turnkey telecom solutions for enterprises and national and international long distance services to carriers. Further, Bharti Airtel has been ranked among the six best performing technology companies in the world by BusinessWeek.

In a move that will accelerate the transformation of African mobile communications and positively impact the speed of economic development across the African continent, Bharti Airtel Limited and IBM recently announced the selection of IBM to manage the computing technology and services that power Bharti Airtel's mobile communications network spanning 16 African countries. What is particularly interesting about this case study is that IBM will manage Bharti's systems and network infrastructure — and *Clabby Analytics* believes that IBM will do this using a full suite of Tivoli

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systems and network management products, including Netcool and Tivoli Event Manager (described earlier).

The growth opportunity for Bharti AirTel is immense. According to a Deloitte report commissioned by the mobile communications industry association GSMA, only 40 out of every 100 Africans have a mobile phone. However, demand is growing at an average rate of 25 percent annually, and a 10 percent rise in mobile penetration could increase gross domestic product by 1.2 per cent in developing markets.

When this agreement is finalized (end of Q4, 2010), IBM will provide customer support applications that include customer relationship management, billing and self-care that will empower customers and assist Bharti Airtel in delivering innovative and convenient 2G and 3G mobile services. In addition, IBM plans to deploy a powerful content management system to offer rich media content such as music and video over mobile devices, while simultaneously facilitating the growth of the application developer community in Africa. The strategic partnership will enable Bharti Airtel to scale its network and systems to more than 100 million African customers by 2012.

To further illustrate IBM's commitment to helping CSPs better manage their businesses while expanding market share and capitalizing on growth opportunities, consider this statement by Samuel J. Palmisano, Chairman, President and Chief Executive Officer of IBM:

"We see our strategic relationship with Bharti Airtel as a powerful example of building a smarter planet. We have achieved great success together in India, and now we are bringing that model to Africa. By building a 21st century telecommunications infrastructure for the continent – in effect, treating all of Africa as a system of systems – we expect to help spark transformation not just in communications but across all sectors of society – empowering businesses, governments and individual citizens to connect, innovate and achieve economic growth."

IBM: Making Investments in the CSP Industry

IBM is making monetary investments to broaden and deepen the systems, storage, and network products that it sells into the CSP industry. Further, IBM is acquiring software to help CSPs better manage their environments. And, IBM is also sharing its technical and industry expertise with CSPs — helping CSPs expand into new markets.

The first acquisition in the CSP market space, completed in 2006, was Micromuse, a network management software company based in San Francisco. Micromuse's Netcool software suite helps companies manage sophisticated IT systems that integrate voice over Internet Protocol (VoIP), data and video traffic over the Internet. The software provides network monitoring to prevent outages and identify performance issues. Micromuse focused on the telecommunications, banking, retail and government markets.

In 2007, IBM acquired Vallent, a network and service management company based in Bellevue, Washington. Not only did Vallent add significant capabilities to IBM's Tivoli software suite but Vallent had a customer base of more than 200 communications service provider customers worldwide, with a focus on the wireless market. Vallent also had strong partnerships with network equipment providers. The Vallent technology is complementary to the IP-based network management capabilities provided by Netcool – providing network monitoring and service quality management – particularly suited to wireless networks. And the company's service quality management provides a strong link between network health/customer experience in large complex multi-vendor environments, enabling network issues to be tied directly to service quality and outcomes.

This year, IBM acquired Intelliden, based in Menlo Park Ca., a provider of intelligent network automation software that helps telecommunications companies to configure, manage and scale their

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networks. To manage the growth of increasingly complex, virtualized and cloud-based infrastructure, these intelligent automation tools reduce the complexity and cost of configuring and managing thousands of interconnected network devices. “Smart” management eliminates manual configuration errors, reduces management costs and improves service quality (and also fits nicely with IBM’s Smarter Planet mantra). This acquisition strengthens asset management capabilities by automating the life-cycle management of both business and IT assets. And like IBM’s other acquisitions in this space, Intelliden also brings with it a telecommunications customer component – Intelliden being strong in the European telco market.

Summary Observations

The key messages in this report are:

- IBM is becoming the leader in providing hardware/software and services to the CSP marketplace — largely because it has the broadest, deepest management portfolio as well as the industry experience and related services to help CSPs move into new markets;
- IBM’s new “smarter systems” are playing an important role in helping IBM grab market share. These systems have been designed and tuned for CSP customers — and can help those customers reduce computing costs while also improving the customer’s experience with its telco provider (through the use of advanced business analytics software); and,
- IBM is making large monetary and service commitments to the CSP industry — it wants to grow its market share in the CSP industry — an industry that IBM believes is core not only to world growth, but also to IBM’s future growth.

One of the biggest problems facing the CSP industry is what we described as the “silo problem”. CSPs have a need to rationalize infrastructure; deliver application-based services, and manage across the entire service deliver path. CSPs can deploy solutions on their existing infrastructures today, but without solving the silo problem CSPs will have a hard time guaranteeing service levels across their communications infrastructures. What we see in IBM is a company with the right tool set making the right investments needed to help CSPs overcome this silo problem. But, further, we also see a company that is very committed to helping CSPs exploit new business opportunities by making use of IBM products, industry expertise, and services — helping CSPs build a smarter planet for their customers. One of IBM’s major focal points in the CSP industry is to help drive down costs (IBM does this by building highly integrated systems/software environments that can process large volumes of data, and that offer high utilization rates). IBM is also positioning to help CSPs solve customer experience problems using integrated “smarter system” platforms as well as IBM’s own advanced business analytics software. Further, IBM is also focused on providing its CSP customers with highly-integrated middleware/database products that will make it easier for CSPs to deploy new services — as well as advanced CSP solutions gained through acquisition.

After reviewing the depth of IBM’s CSP product offerings, after seeing its Netcool and Maximo Event Asset Manager products in action — and after considering the level of investment that IBM is making in CSP software — it is very clear to us that IBM is making a major push into the telecommunications/CSP market place. From our perspective, competitors such as Hewlett-Packard, Sun/Oracle — and service providers such as EDS, Accenture, and others — are going to be hard pressed to compete with IBM’s highly-integrated smarter systems hardware and industry-specific software solutions that have been designed specifically with the needs of CSPs in mind.

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