Network Transformation: Opportunities and Challenges for NEPs

Executive Summary

Communication service providers (CSPs) have traditionally owned and operated networks, while network equipment providers (NEPs) provided network equipment and services such as installation and maintenance. The convergence of IT, telecom and media has led to the development of new products (smartphones, tablets, etc.) that are driving the demand for both data and personalized services. CSPs are also impacted by the rise of over-the-top (OTT) players[1] such as Google, Yahoo and Skype, which use CSP networks to provide services directly to consumers. This forces CSPs to offer more differentiated services to retain customers.

CSPs are transforming their networks, existing systems and processes to support next-generation services and are rapidly entering the cloud ecosystem. They are actively seeking partners to help them quickly and cost-effectively serve customer demands, create new revenue-generation opportunities and improve time-to-market for new service deployments. As CSPs spend most of their budgets on procuring equipment and related services from vendors, it is logical to expect NEPs to offer CSPs end-to-end solutions – managed services ranging from consulting, to operations support systems and business support systems (OSS/BSS) integration.

For NEPs that are challenged by the decline in the traditional equipment business, this development offers both promising opportunities and a set of challenges. NEPs need to understand and identify gaps that impede CSPs' time-to-market aspirations and develop new, customized solutions quickly and cost-effectively. Increasing network complexity – demand for equipment that can handle multiple services around voice, data and video and the pressure to offer differentiating solutions – requires NEPs to augment their current offerings.

NEPs would do well to partner with Tier 1 consulting firms that can bring complementary capabilities in enterprise systems integration and develop differentiating software to address key business and operational challenges. This will enhance NEP offerings and allow them to approach CSPs with a complete set of solutions that help deliver next-generation services smoothly and quickly.

CSPs: Treading a Difficult Path

The business environment has never been so challenging for CSPs. They are grappling with declining average revenue per user (ARPU) in the wireless voice area (see Figure 1) and increasing competition from non-traditional players such as mobile virtual network operators (MVNO) and OTT providers, such as Skype, Yahoo and Google (see Figure 2).

Even while dealing with these challenges, CSPs must keep pace with growing technology complexity and a mounting mobile broadband

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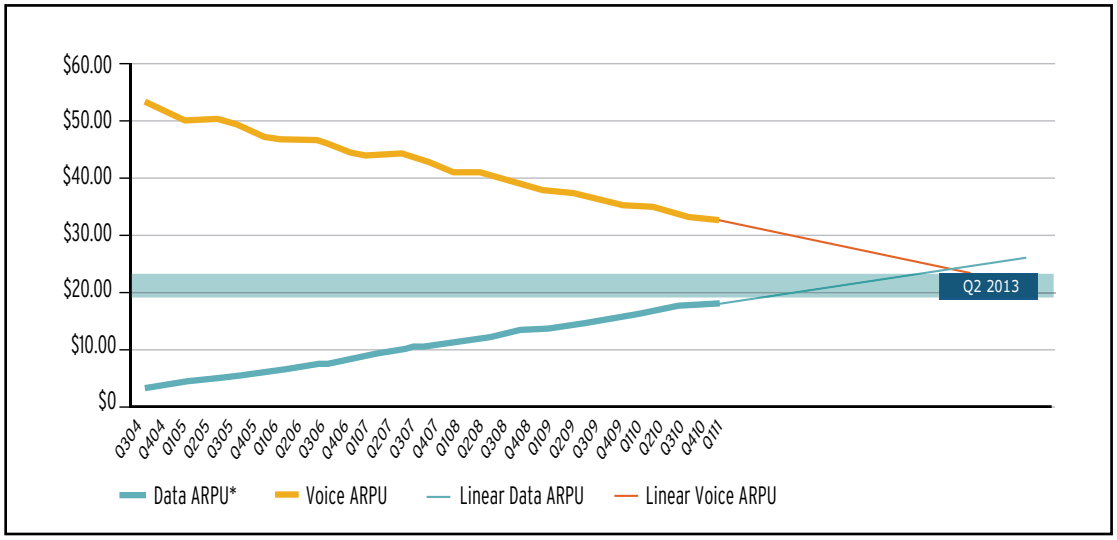
Data Grows as Voice Declines



* Average revenue per user

Source: "U.S. Wireless Data Market, Q1 2011 Update," Chetan Sharma Consulting

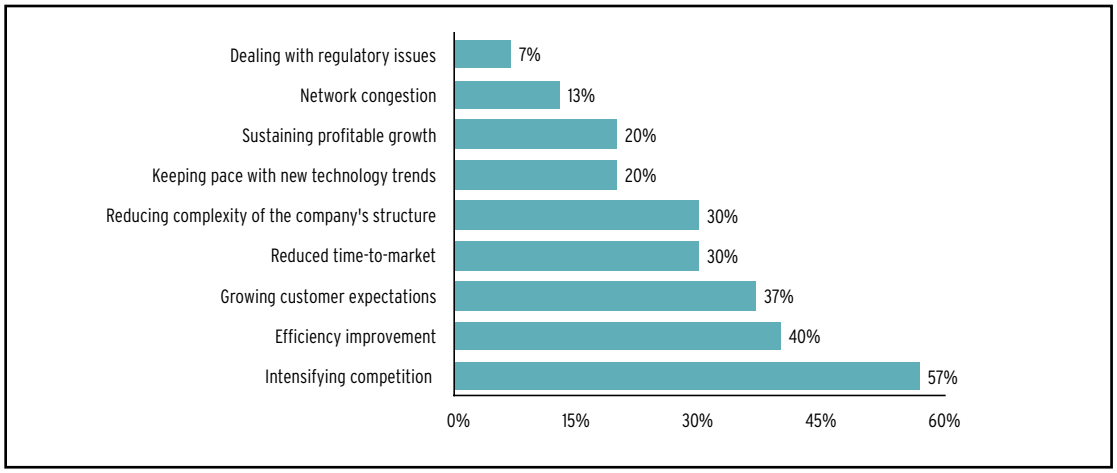
Figure 1

customer base, which is expected to reach one billion by 2013 (see Figure 3). At the same time, they must fulfill demand for ubiquitous and customized services that go beyond wireless voice telephony, to offset a decline in traditional fixed business revenues. As a result, CSPs are under pressure to roll out next-generation networks and services with aggressive deployment schedules and reduced time-to-market.

With pressure looming to reduce capital expenditure (Cap-Ex) and operating expenditure (Op-Ex), CSPs are looking for partners that can help them transform their legacy systems that hinder new product launches and enable rapid provisioning of new services. They need to work closely with their partners and develop customized, scalable end-to-end solutions. This way, they can reduce costs, improve time-to-market and accommodate new solutions with minimum integration issues as they move toward an all-IP environment.

For NEPs, the closest and biggest vendors to CSPs, this provides an opportunity to strengthen their strategic partnerships with CSPs.

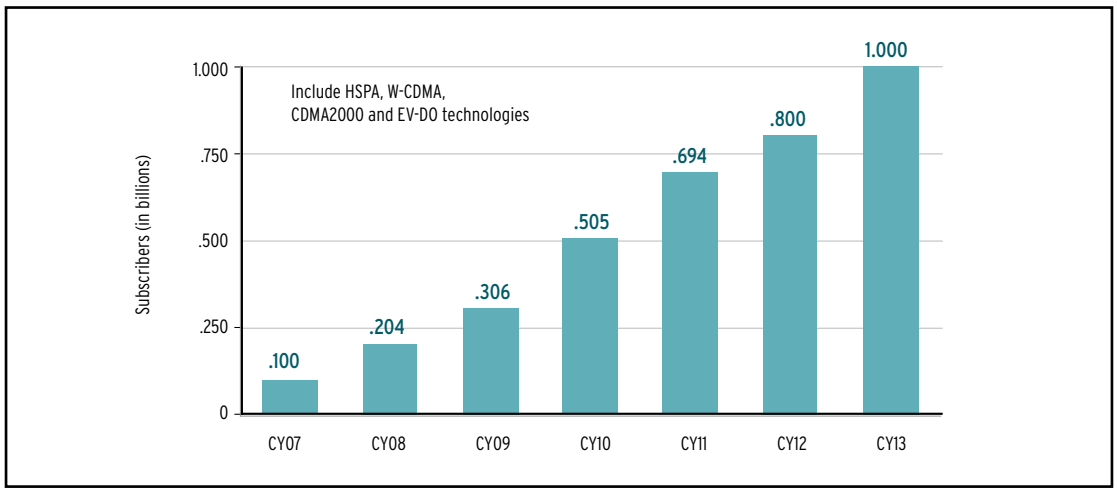
Key Challenges for CSPs



Source: Frost & Sullivan

Figure 2

Worldwide Mobile Broadband Subscriptions Growing Unabated



Source: Infonetics Research, March 2009
Figure 3

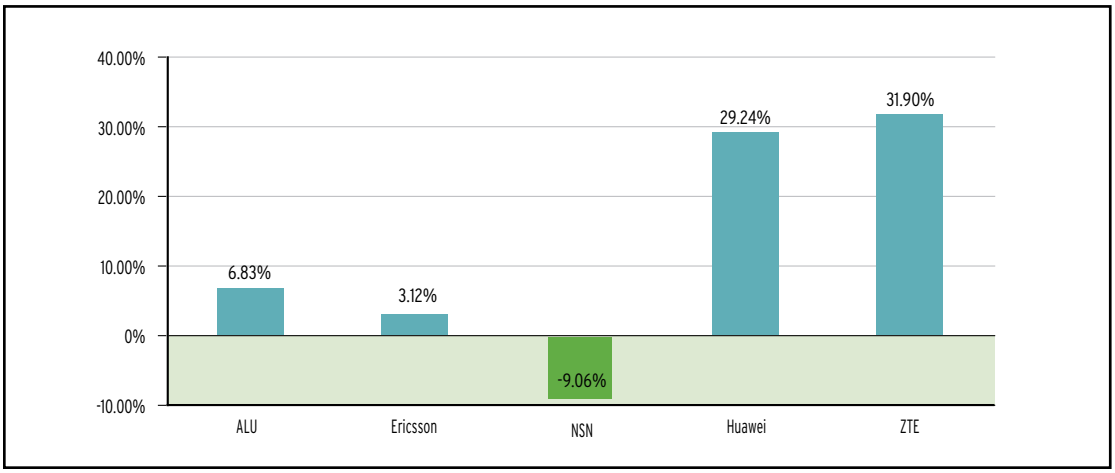
Imperatives for Change

The last five years have been especially challenging for NEPs. In the aftermath of the global economic downturn, NEPs have seen a significant reduction in margins from their core business and an overall decline in equipment sales. This has forced many companies to diversify beyond equipment to offer a range of managed and professional services to CSPs.

The emergence of low-cost players, for example, has made pricing in the highly competitive NEP market even more cut-throat. Leveraging their low-cost advantage, Chinese equipment providers such as Huawei and ZTE have aggressively expanded to European and North American markets, taking away market share from the likes of Ericsson, Nokia-Siemens Networks (NSN) and Alcatel-Lucent. While Ericsson, Alcatel-Lucent and NSN incurred losses or remained flat, Huawei's revenues grew at CAGR of 29% during 2006-2010 (see Figure 4).

NEPs are also impacted by the consolidation of CSPs (including cross-border transactions), which has left in its wake fewer CSPs that are bigger in size and wield enormous bargaining power, resulting in reduced profit margins.

NEP Ups and Downs



*Revenue growth rates, 2006-2010.
Source: Cognizant Research Center
Figure 4

The rapidly evolving technological landscape has seen increased demand from CSPs to deliver new products quickly and at lower costs. This means NEPs need to focus even more on ensuring that their products support growing network complexity and interoperability. Thus, working closer with CSPs and being part of their success has never been so important for NEPs.

New Opportunity Beckons NEPs

The emergence of new technologies (3G, LTE, etc.) requires CSPs to support wireless, VoIP, video, high-speed data, a host of digital media applications and other services across numerous consumer and business devices. CSPs must continuously monitor service performance, add bandwidth on-demand, provision new services and features quickly, and track customer usage and charge them appropriately. This has increased the complexity of their operations and billing procedures.

NEPs should leverage their size and scale of operations to emerge as a one-stop-shop for network equipment and support OSS/BSS solutions by focusing on sub-segments that are expected to grow more rapidly.

Legacy OSS/BSS systems hinder the quick roll-out of new services, as they need to be configured and tested rigorously. This involves costs and delays the launch of new services, challenging the CSPs' objective of gaining quick market share and profits. CSPs might choose instead to deploy new OSS/ BSS systems while retaining their existing legacy systems, but this approach creates a complex environment with several multi-vendor systems (hardware and software) that operate in silos, each silo supporting only a subset of services.

OSS/BSS systems can be an enabler of a CSP's competitive advantage, but integrating legacy systems with new systems can prove to be a big challenge. These challenges portend a huge opportunity for telecom software systems integration in the next five years, according to a report by Analysys Mason.[2]

OSS/BSS transformation is vital for CSPs to improve customer experience, sustain competitive edge, manage end-to-end service quality and reduce Op-Ex by optimizing systems and streamlining business processes.

From the NEP perspective, they see the CSPs' OSS/BSS transformation as critical to their own success. NEPs have a vested interest in CSPs being able to shrink time-to-market for new services and accelerate their equipments' return on investment. NEPs should leverage their trusted partner status with CSPs and bring them integrated solutions consisting of not only equipment but also the enabling OSS/BSS infrastructure. NEPs that partner with CSPs in shrinking their time-to-market set themselves apart. In cases where the NEP already possesses OSS/BSS capabilities, they need to bring systems integration services to help the CSP with transformation.

NEPs can also help Tier 2 CSPs that do not possess cloud computing expertise to offer cloud solutions to large and medium-size businesses and government organizations.

The Way Forward for NEPs

To remain competitive, NEPs need to vertically integrate their equipment by supporting next-level OSS/BSS solutions and offer systems integration and testing services to present a complete solution to CSPs. Getting there means they will have to battle it out with big IT services firms, which are usually preferred by CSPs for high-level OSS/BSS transformation because of their considerable experience in building and delivering new and more cost-effective IT and business capabilities.

The OSS/BSS market has evolved tremendously, along with changing technologies. The global market is expected to reach $22 billion in revenues by 2013.[3] North America will continue to be the largest market for OSS/BSS solutions because of its substantial and growing demand for data and video. However, the market remains highly fragmented, with more than 400 vendors,[4] mostly specializing in niche services. NEPs should leverage their size and scale of operations to emerge as a one-stop-shop for network equipment and support OSS/BSS solutions by focusing on sub-segments that are expected to grow more rapidly, such as performance management, provisioning and service activation and inventory management.

NEPs can achieve this by adopting any of the following strategies:

- **Capability acquisition:** One direct way to enhance the product portfolio is to acquire companies possessing capabilities such as system integration and software development. However, this can be an expensive proposition and may not be the best choice for NEPs that have already invested heavily in future tele-

communications technologies. Further, this strategy is delay-prone and is usually accompanied by post-merger integration challenges.

- **Partnerships:** The other alternative is to enter into a strategic partnership with companies that have complementary capabilities. This approach involves less complexity and allows NEPs and their partners to focus on their core competencies, while still delivering an end-to-end solution to CSPs.

Choosing the Right Partner

Traditionally, NEPs have relied on in-house capabilities for core activities such as software development, hardware design, platform validation and other related services. It takes at least two to three years to design and build a telecom system using proprietary platforms and in-house R&D, followed by integration. Such a set-up is no longer viable, as it consumes huge amounts of time, money and human effort, along with the accompanying need to continually upgrade internal skills to keep pace with rapidly growing technology.

The ideal partner enables an NEP to react to customer demands effectively and efficiently and allow them to focus on developing highly differentiating solutions. Hence, it is important to choose Tier 1 companies with a strong and proven record in software development capabilities, expertise in the telecom domain and a global presence.

Preference should be given to partners that exhibit considerable experience in systems integration, a deep understanding of CSPs and the ability to provide pre-integrated and pre-configured solutions that reduce time-to-deployment. NEPs should seek capabilities in areas such as consulting services that extend beyond current products and services and provide access to the latest technologies and other resources on-demand. This will help in anticipating the future needs of CSPs and making sure that the new solutions require less intensive integration effort, support multi-vendor and multi-domain management and meet CSPs' regulatory/compliance standards.

Partnerships should be sought with companies willing to make combined investments in the co-development of solution accelerators and differentiating intellectual property.

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Conclusion

The increase in the number of connected devices and CSPs' focus on enhanced user experience and improving business efficiencies to fend off threat from non-traditional players will drive the demand for OSS/BSS systems. As core suppliers of network equipment, NEPs are well positioned to take advantage of this opportunity to offer end-to-end solutions that can solve CSPs' complex communication challenges in the converged communications era.

Rapid technology explosion and increasing demand for end-to-end solutions from CSPs require NEPs to deliver new solutions at an improved rate. Partnering with firms that can provide requisite resources to cope with the technological and time-to-market pressures and compete effectively in a marketplace should be viewed as a long-term strategy.

Footnotes

[1] Definition from Wikipedia: "Content, services and applications in a video environment where the delivery occurs over an alternative means than the main video delivery infrastructure, such as accessing content or applications through the Internet."

[2] Glen Ragoonanan, "Systems Integration: Multi-Vendor and Legacy Complexities Sustain Spend," Analysys Mason, February 2011.

[3] "Global Trends: Market Consolidation Continues," Tele.net.in.com, December 15, 2010.

[4] "Global OSS/BSS Software Market 2010-2014," Infiniti Research Limited, February 2011.

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