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And then there were few

How to survive the next wave of consolidation among Network Equipment Providers

Electronics Industry

IBM Institute for Business Value

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How to survive the next wave of consolidation among Network Equipment Providers

By George Bailey and Christian Seider

Network Equipment Providers (NEPs) are experiencing resurgent growth after plummeting in the burst of the dotcom bubble. Consolidation and convergence are sweeping the industry, and only those companies that combine innovation and proper positioning – a handful, at best – are expected to survive to become true, global market leaders. Our research identifies the business trends likely to become dominant in the next several years and outlines the steps NEPs can take to try to join those elite few expected to flourish.

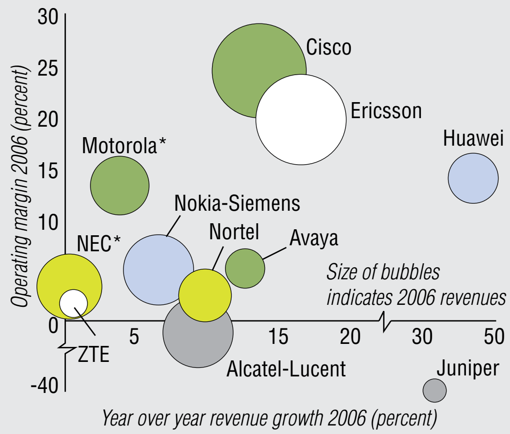
Introduction

During the era of Internet hype and the famous dotcom bubble, Network Equipment Providers – those companies that provide equipment, software and services for communications solutions – were among the darlings of the electronics industry. They were swept away, along with much of the electronics and communications industries, in a wave of prosperity that seemingly promised a long, secure future.

Unfortunately, when that bubble burst in 2000, it took the NEPs industry with it; as an aggregate, NEP revenue declined more than 30 percent immediately following the collapse and is just now beginning to inch toward the position it previously occupied.[1] From a low of 67 percent of pre-burst revenue in 2004, NEPs today have clawed their way back as an industry to 83 percent of the revenues they realized in 2000, just before the bottom fell out.[2] A review of business strategies and key performance indicators (KPIs) of selected NEPs, in terms of revenues, operating margins and revenue growth, paints a clear picture of current performance (see Figure 1).

As these companies attempt to continue their comeback, they find themselves challenged by a new set of market conditions and dynamics, ones we believe will define winners and losers in this industry over the coming decade. For example, the industry is in the midst of significant consolidation, a trend we expect to continue, even accelerate, over the next ten years. The market for NEP solutions is growing as well – services more so than equipment – but not as fast as the global economy and significantly slower than the electronics industry as a whole. We anticipate this trend to continue as certain solution segments are facing saturation.

FIGURE 1.
Key performance indicators of selected NEPs.



(Size of bubbles indicates 2006 revenues. Does not include Siemens Enterprise Communications because of a lack of public data).
**Network division only.*

Share of revenue from…

Service providers	Enterprises	
>98%	<2%	Service provider focus
90-98%	2-10%	Service provider focus
80-90%	10-20%	Service provider focus
70-80%	20-30%	Service provider focus
10-20%	80-90%	Enterprise focus

Source: IBM Institute for Business Value analysis of share of segment revenues, based on the financial reports of selected Network Equipment Providers.

A final factor in the mid- to long-term NEP outlook is the convergence now evident in the electronics industry. Enabled by common IT standards, the lines between the telecommunications, media/entertainment and electronics industries are blurring as next generation networks (NGNs) enable consumer-friendly and industry-efficient crossovers, such as the provision of Internet videos on mobile telephones and MP3 music downloads. These converged providers are expected to demand more and more solutions from NEPs, but, perhaps, from fewer and fewer vendors.

When combined, we expect these new market dynamics – particularly consolidation and convergence – to separate those NEPs with the capability and vision to compete globally from the remainder of the industry. We believe the number of viable NEPs will decrease during the next 10 years as those without comprehensive capabilities and/or market savvy are swallowed by their larger competitors, become niche vendors or just fade away. By 2017, we expect only a handful of NEPs – perhaps even as few as three – to be legitimate, global players in the marketplace.

The question, then, is of the major companies currently vying for market share, what steps can they take to assist in weathering this coming struggle for dominance in the industry?

To answer these questions, the IBM Institute for Business Value analyzed trends in the industry and interviewed top executives from NEPs throughout the world. We discovered that NEPs currently occupy three categories in the marketplace, which we will explore in detail later – each with its own set of core competencies, not all of which are compatible with the long-term direction of the industry. Additionally, our research has revealed a number of ecosystem trends expected to drive further consolidation in the mid- and long-terms. NEPs will need to respond differently to each of these trends, depending on both their business strategy and market category.

Finally, both the market categories and ecosystem trends will, we believe, lead to a transformation of the industry by 2017 in which a number of convergence opportunities will present themselves. These opportunities should set the stage for additional mergers and acquisitions among NEPs and provide a foundation for convergence with mainstream consumer electronics companies and IT service providers – with a substantial impact on the balance of power in the longer-term NEP ecosystem.

Based on our research, we have identified what we believe are appropriate practices and areas of action for NEPs and have provided steps individual companies can take to assist them in becoming or remaining successful in the coming era of consolidation.

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The Network Equipment Provider ecosystem is undergoing a fundamental change.

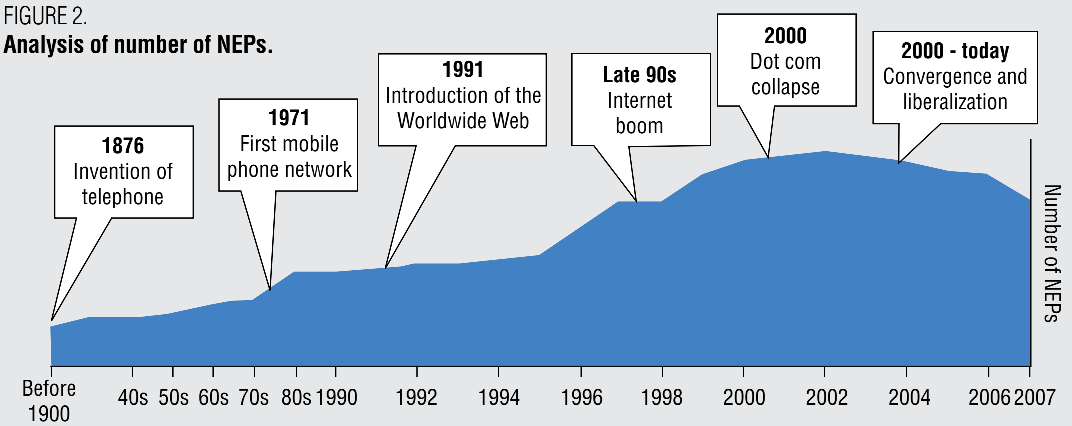
NEPs today – A snapshot of an industry in transition

Beginning with the invention of the telephone in 1876, the number of Network Equipment Providers increased at a steady rate until just after the dotcom fiasco in 2000. Since then, in the wake of a changing communications ecosystem, the number of NEPs has declined (see Figure 2).[3]

This ecosystem is now being reshaped by fundamental changes that affect all players in the market, including NEPs. The industry landscape is changing as suppliers to telecommunications service providers, including NEPs, are assisting these companies in servicing enterprise customers as well as providing direct support to enterprises in conjunction with systems integrators and independent software vendors (ISVs). Secondly, there is an ongoing migration to next generation networks, which are replacing the traditional circuit switched networks. As well, value creation has shifted away from equipment and toward software and services. In legacy networks, hardware stacks provided the base of operations, with services as a secondary function. In today's NGN, software is becoming the key enabler for new services, with hardware requiring lesser emphasis. And, finally, increasing use of open standards is shifting communications away from legacy, proprietary networks to more commercial, off-the-shelf, common hardware and software solutions from independent vendors.

In addition to the changing scope of the communications ecosystem, NEPs must also be prepared to respond to heightened competition in the market from both old rivals and emerging players. As consolidation within the industry has been a significant trend over the past few years and is expected to continue unabated, large-scale competitors have emerged that compete as end-to-end suppliers on a global scale. Examples are Cisco's numerous acquisitions, Ericsson's purchase of Marconi and other companies,

FIGURE 2.
Analysis of number of NEPs.



Source: IBM Institute for Business Value analysis based on publicly available data, including individual Web sites of selected Network Equipment Providers.

Service providers are increasingly demanding turnkey solutions from a single partner.

the merger of Alcatel and Lucent, and, most recently, the Nokia and Siemens joint venture.[4] To compound the competitive situation, the growing importance of software applications has led to new players emerging in the market – IT solutions providers (i.e., systems integrators) and ISVs. And, in the arena of managed and hosted services, NEPs are likely to face competition from new players, such as Google, because of lower entry barriers.

As much as the canvas is changing on the provider end, so, too, is the customer segment of the supply chain transforming. Convergence-driven consolidation among communications companies has led to greater dependence by NEPs on a few large clients, which places the bargaining advantage in the hands of the customer. Additionally, profitability issues are prompting service providers to increasingly look at lowering operating costs and capital expenditures to achieve a lower cost per subscriber. This, in turn, places pressure on the profit margins of NEPs. And finally, unlike days past when service providers would have multiple solutions from numerous vendors, these enterprises are increasingly demanding turnkey solutions from a single partner for their communication solutions needs.

Definition:

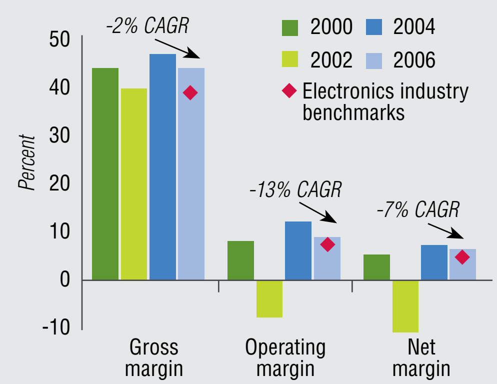
We believe that the terminology "Network Equipment Provider" is no longer appropriate, as many enterprises have moved well beyond the point of merely providing equipment. A more appropriate name would be "Communications Solution Provider." However, because of its widespread popularity, we continue to use the traditional name in this executive brief.

The financial perspective

The dotcom collapse, in addition to causing revenues and employment to plummet, also had a significant, albeit brief, impact on the bottom line. NEPs' operating margins fell from 8 percent (5 percent net margin) in 2000 to -7 percent (-10 percent net) in 2002 (see Figure 3).[5] However, the industry quickly recovered and, within two years, exceeded previous levels of profitability.[6] The most profitable year for NEPs since the dotcom burst was 2004, with operating margins of 12 percent and net margins of 7 percent.[7] And compared to the electronics industry in general, NEPs are showing slightly better performance, with gross profit margins 6 percent higher and operating and net profit margins 1 percent higher.

However, service providers and enterprises are feeling increasing cost pressures. When looking at ways to reduce costs, NEPs, which account for a major component of their overall expense, are likely to be high on their collective radars. In fact, from 2004-2006, NEP CAGR was -2 percent in gross profit, -13 percent in operating profit and -7 percent in net profit.[8]

FIGURE 3.
NEP profit margins, 2000 to 2006.



Source: IBM Institute for Business Value analysis based on the financial reports of selected Network Equipment Providers.

Incumbent NEPs are being challenged by rapidly growing market entrants.

A significant portion of the deteriorating profit position of NEPs relative to the rest of the electronics industry can be accounted for by the significant discrepancy in costs versus revenue per employee. For example, on average, Network Equipment Providers spend 116 percent more on research and development than the electronics industry as a whole (when comparing R&D as a percentage of revenues), but generate 25 percent less revenue per employee.[9] And while even large, incumbent NEPs, such as Cisco and Ericsson, demonstrate solid profitability and revenue growth, they are being challenged by the emergence of rapidly growing market entrants, such as China's Huawei.

Finally, while NEPs grew their service revenues by 13 percent CAGR between 2004 and 2006, they face constant pressure on services margins.[10]

Superior financial performance driven by clear vision and business strategy

Cisco is a leader in the NEP industry in terms of revenues and market capitalization.[11] An estimated 80 percent of Cisco's US$28 billion revenues come from enterprises, which gives it a strong position in that segment.[12]

Cisco has made more than 50 acquisitions between 2001 and 2007 to augment its technological position as well as diversify its portfolio into newer segments like home entertainment.[13] Significant investments in Linksys, Scientific Atlanta and WebEx are paying off, indicating that Cisco has invested well.[14]

Cisco is already deriving efficiencies as it moves to a virtual supply chain that incorporates a seamless web of contract manufacturers, logistics providers and suppliers. They have also been very successful in orchestrating an ecosystem of partners and suppliers to gain productivity and operating efficiencies.

Cisco is now focusing on growing economies to fuel its growth. The company plans to leverage the low cost base in growing countries such as China, India and other emerging markets.[15]

Strong end-to-end solution portfolio – a leader in services

A majority of Ericsson's US$27 billion turnover comes from its wireless infrastructure, where the company occupies a strong position.[16] Ericsson is looking for growth of mobile telecommunications to be one of its future revenue drivers.

Ericsson's end-to-end solutions portfolio, which covers systems, applications, services and links to handset technology, positions it to assist network operators with their network development and operations.

Early involvement in creating new technologies often enables Ericsson to be among the first to market with new solutions. Ericsson has an extensive portfolio of approximately 22,000 patents[17] covering a variety of fixed and mobile technologies. Ericsson is recognized as among the leaders in the growing market of network related services.

Fast growth supported by a low-cost environment – opportunities to enhance services capabilities

Huawei is a fast-growing company posing a strong challenge to incumbent players. It is among the leaders in the NEPs segment with growth rates of over 40 percent.[18]

Due to a low-cost infrastructure, Huawei enjoys inexpensive manufacturing in its home market. The company can funnel that cost savings and additional resources into innovations and can go to market with aggressive pricing, putting major margin pressure on incumbent NEPs.

Even with a rich portfolio, Huawei has opportunities to enhance its services business, especially outside Asia Pacific.

NEPs fall into three distinct business categories: artisans, orchestrators and allrounders.

Diverse models serve the same market

Complicating the forecast for the long-term prospects of the NEPs industry is the diversity of the business models currently in place. Based on our research and interviews with NEP executives, we have placed companies in three segments: the “artisan,” the “orchestrator” and the “allrounder.” However, because of both changing market conditions and unclear business strategies, the lines between these models are often blurred, and many companies may not fit neatly into one specific mold (see Figure 4).

Three Network Equipment Provider business models

The artisan

The artisan is, essentially, an equipment manufacturer and is likely to be a follower, rather than a leader, in technology innovation. While typically very focused on business strategy, our research tells us the artisan, because of its inability to provide end-to-end solutions, is the most vulnerable of companies in the mid-and long-terms and likely must effect a transition to one of the other two categories to have a chance for enduring viability. Additionally, lack of differentiation from the electronics manufacturing industry will have a tendency to push the artisan even lower in the value chain, perhaps to the point of becoming solely an electronics manufacturer.

The allrounder

The allrounder is a company that strives to do everything alone and features a highly self-sufficient business model and a lower-degree of revenue sharing with external players than orchestrators. It has a high level of direct sales, provides independent services and has a higher fixed cost structure. It often competes instead of partnering with different players in the ecosystem, and its broad set of capabilities may result in diluted market focus. However, its ability to provide end-to-end solutions sets it up for potential long-term success. Like the orchestrator, this company is likely to focus on turnkey solutions and to be a technology leader.

The orchestrator

The orchestrator is the most modular of the three business models and is able to move quickly and seamlessly from a fixed to a variable cost structure. It derives synergies from existing relationships, and focuses on managing its value chain with a high level of indirect activities, such as third-party sales and service provision through partnerships. On the other hand, it has a high degree of external dependency and must share revenues with external players. The ability to provide end-to-end solutions makes a company in this category a candidate to be one of the few expected survivors in 2017. From a technology standpoint, the orchestrator is likely to be a leader.

FIGURE 4.
Diverse NEP business models.

“Artisan”	“Allrounder”	“Orchestrator”
• Focus on equipment • Strong in operational efficiency • Manufacturing is core competence • Technology-wise: ***follower***	• Strives to do everything alone • High degree of direct sales • Services mainly performed independently • Software increasingly important • Aggregation of business model • Focus on end-to-end solution • Technology-wise: ***leader***	• “Orchestrates” its value chain • High degree of indirect sales • Services mainly through partners • Software increasingly important • Disaggregation of business model • Focus on end-to-end solution • Technology-wise: ***leader***

Source: IBM Institute for Business Value.

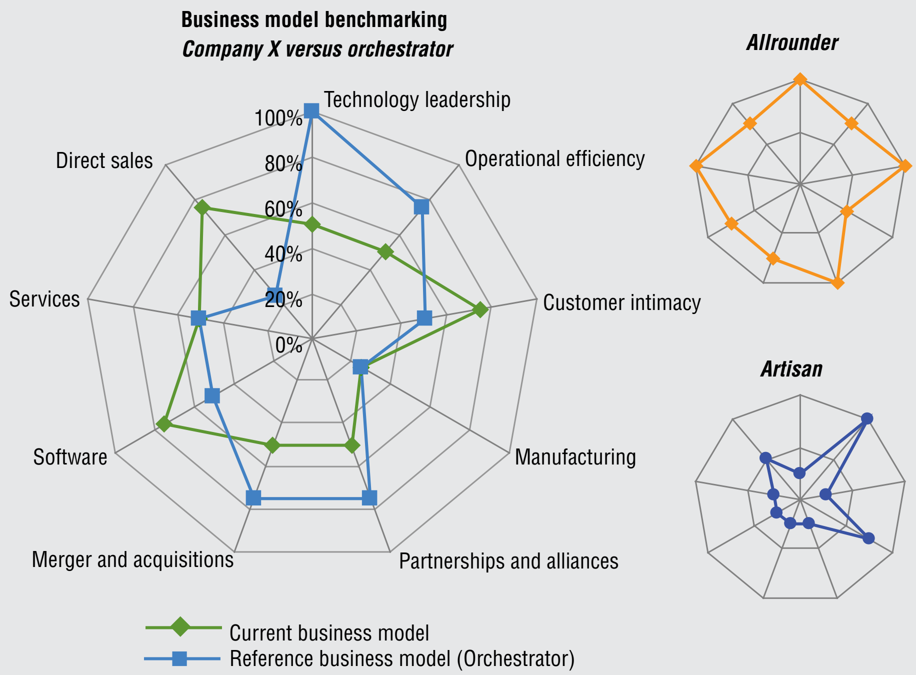
Consolidation among NEPs is expected to continue.

Figure 5 illustrates how a typical NEP business model (green) compares to orchestrators (light blue), allrounders (orange) and artisans (dark blue). Companies can determine where they fit within the three categories by collecting data and comparing themselves against the reference model or the industry leaders on each category axis. By overlaying an individual company's strengths and emphasis against each of the business models, a company can determine its business category and identify areas for improvement. Each business model has distinct strengths and weaknesses, which determine the overall ability of NEPs within the respective categories to meet client demands.

A glance at the future ecosystem

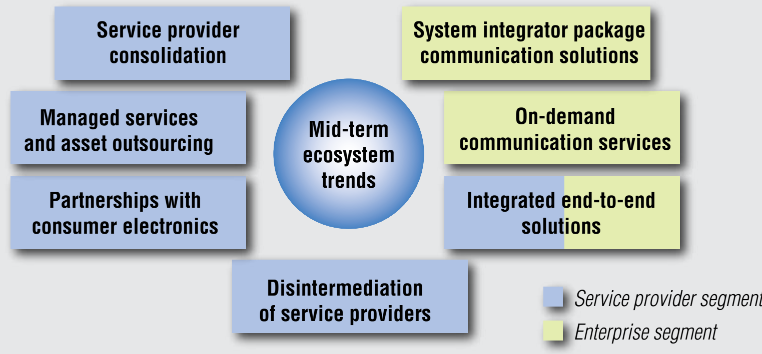
Over the long term, our research tells us the ecosystem for NEPs will undergo continued consolidation, driven by seven business trends expected to become predominant in the NEP ecosystem within the next three to five years (see Figure 6). In addition to the continued consolidation, we also expect industry convergence to be a major factor in the long term. This convergence results when NEPs partner with or acquire IT service providers, consumer electronics companies or smaller service providers, or even when service providers merge with NEPs. In the following section, we will explore each of these mid-term trends and the long-term implications of each on the NEPs industry.

FIGURE 5.
NEP business model benchmarking.



Source: IBM Institute for Business Value.

FIGURE 6.
Mid-term ecosystem trends.



Source: IBM Institute for Business Value.

Non-traditional players may have a significant impact on Telco operators.

Mid-term trends

Service provider consolidation – We anticipate that Telco operators, Internet service providers and cable operators will merge and increasingly operate as single entities to provide almost all data and voice services. Marketplace consolidation should result in a reduced number of providers and, as a result, a stronger customer base. The increased numbers of users and bandwidth requirements should drive significant business opportunities for NEPs.

This consolidation and the availability of integrated end-to-end solutions should have a high impact on the future consolidation picture of the industry. This will result in a reduced number of customers with demand for converged network solutions and will likely drive those remaining to single-vendor relationships.

Consolidation drives need for increased bandwidth

One example of service provider consolidation driven by voice and data convergence can be found in the acquisition by NTL: Telewest of Virgin Mobile in 2006.[19] The resulting company, Virgin Media, Inc., brought together NTL: Telewest's 5.1 million cable customers and Virgin Mobile's 4.3 million mobile phone subscribers and created a single entity that provides television, broadband, mobile phone and fixed-line phone services to UK citizens.[20]

The wide variety of content on the respective networks of NTL: Telewest and Virgin Mobile should result in a need for greater bandwidth, resulting in higher capital expenditures for network upgrades and increased business potential for NEPs.

Increasing importance of managed services, network asset outsourcing and shared networks – The industry is likely to see increasing demand from service providers for managed network services delivered by NEPs and their partners. These providers will look to outsource their network operations to NEPs, driven by the need to reduce network management costs.

The demand for this outsourcing will have a strong impact on NEPs. In order to meet customer demand for services, NEPs may need to complement their existing offerings through partnerships or inorganic growth – potentially acquiring existing managed service providers.

New entrants are likely to disintermediate traditional service providers – New market entrants that provide IP-based communication and entertainment services – for example, VoIP, video on demand and IPTV – are likely to disrupt the market and put high pressure on traditional service providers. If new entrants are able to successfully position their IP-based services and attract a significant audience, it may also have a major impact on the NEPs. This will represent both a challenge and an opportunity for them.

NEP and consumer electronics partnerships will help facilitate end-user experience – End-users will increasingly demand terminals (e.g., mobile or fixed handsets, PDAs, Blackberry devices) that integrate a wide range of functionalities and are able to communicate with different networks and standards. NEPs may partner with consumer electronics companies to make sure these devices work seamlessly with the IP-based communication networks to create a compelling end-user experience.

NEPs that partner with consumer electronics companies may have a competitive advantage over those that choose otherwise. In the absence of such partnerships, NEPs may find themselves out in the cold as a result of vendor consolidation by service providers.

Google's entry into the Telecom market may disrupt traditional providers

Google's recent push into the Telecom market poses a new challenge to traditional service providers and, by extension, to NEPs.[21] With its Google mobile suite, phone and wireless ambitions, Wi-Fi partnerships, low dependency on equipment makers and ability to allow low or even no subscription rates and fees, Google may have an opportunity to woo customers from more traditional providers. These providers, in turn, in the wake of potential lost revenue, may find themselves with reduced capital expenditure capability. To offset the effects of competition from Google and other players, these Telco operators will need to focus on anticipating customer demand and establish new services to compensate for any lost revenues. NEPs are likely to suffer as a result of reduced capital expenditures by traditional service providers and may need to look at identifying solutions for more non-traditional customer segments.

"In terms of managing devices with different networks – you need to be able to connect them and ensure a pleasant consumer experience. The question is how close you need to be with consumer electronics companies to do that? It may start from research right until the fitting and testing – the challenge is that in the end, it all needs to work together!"

– Vice President, Strategy for European NEP

Service providers and enterprises will increasingly demand a single vendor to provide integrated IT and communications solutions – Driven by the convergence of IT infrastructure and communication networks to a common IP-based platform, service providers and enterprises will look to reduce both cost and complexity by establishing comprehensive services contracts – instead of contracting IT and communications services independently.

As a result, NEPs may need to revisit their IT services strategy in order to complement their existing offerings by partnering or merging with IT service providers.

"We need to cross the borders of our home market and achieve true global scale in order grow our business! Services will become more important and we must establish global service delivery capabilities to satisfy our customers' expectations."

– Division Leader for Asia Pacific NEP

Hosted on-demand communications services will gain wider acceptance in enterprises – We expect, that enterprises will increasingly own only limited network assets – and will pay for using hosted communications services against clearly defined service-level agreements. Scenarios that could arise from such instances include systems integrators or carriers providing hosted services. As well, NEPs could provide these services, but such actions would require a change in the current business model. In these scenarios, the third-party providing on-demand communication would own and manage a majority of the network assets – and would charge the enterprises only for using their services.

IT service providers can provide industry-specific and packaged communications solutions to enterprises – IT service providers are increasingly assuming greater importance in enterprise communications. They may start providing packaged communications solutions to enterprises and may come up with offerings for enterprise customers by bundling network equipment from NEPs in contrast to enterprises buying the equipment directly.

NEPs that partner with systems integrators may have an advantage over their peers. Like most of the other mid-term trends, failure to partner may result in further vendor consolidation.

Other factors giving rise to the expectation that consolidation will continue and accelerate include:

- Slowdown in market growth
- Increasing customer needs for global reach
- New entrants (such as low-cost providers) creating price pressures for incumbents
- Leveraging of economies of scale to improve operational efficiencies
- Continuing regulatory evolutions for the communications industry
- Technology standardization that enables players to integrate their solutions more easily.

Orchestrators and allrounders are in a good position to take advantage of mid-term trends, while artisans may need to consider transitioning to a different business model.

Business model opportunities in relation to mid- and long-term trends

Depending on their current business models, NEPs have different capabilities to address opportunities in the marketplace arising from the seven mid-term trends we have identified. Both orchestrators and allrounders are well positioned to take advantage of each trend. Unfortunately, it appears the opportunity is much more limited for artisans. Artisans appear strong only within packaged communications solutions, in which there is a demand for an easy-to-integrate-and-deploy unified communication infrastructure. Otherwise, they have a low professional services capability and a restricted software portfolio. For these companies to avoid challenging times, they should consider transforming either to the orchestrator or allrounder model in order to provide end-to-end solutions.

Orchestrators, on the other hand, can rely on their partnership network to fulfill customer requirements almost across the board. And allrounders, while expected to fall behind orchestrators in terms of completeness of solution portfolio, still bring to bear end-to-end capabilities to address each of our seven trends.

Therefore, we expect the continued consolidation within the NEPs industry to favor the orchestrators and allrounders, which have, we believe, the most sustainable business models. Both can provide true end-to-end communication solutions, including equipment, software and services, to their clients.

"I think industry consolidation continues – even accelerated by new entrants with a very low-cost structure. Can you imagine five or six globally based NEPs or can you even go further and say it might be two or three? The only reason that I can imagine preventing it from becoming two or three players is mainly national politics issues."

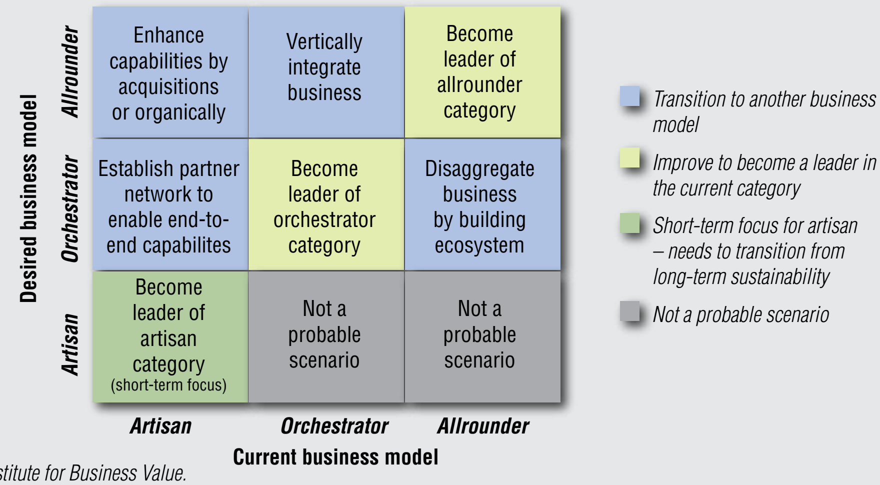
– Chief Strategy Officer for North American NEP

How can NEPs transform business models for long-term sustainability and leadership?

As mentioned previously, we believe NEPs must either strive to become leaders in their current category or transition to one that offers greater opportunity for long-term sustainability and success (see Figures 7 and 8). For artisans, a short-term focus on becoming a category leader is an acceptable solution. However, they must choose their strategic direction wisely to have a chance of long-term viability. Options available to artisans are to transform to another business model, become an electronics manufacturing service provider or get acquired by an orchestrator, allrounder or non-traditional NEP as a market entry strategy.

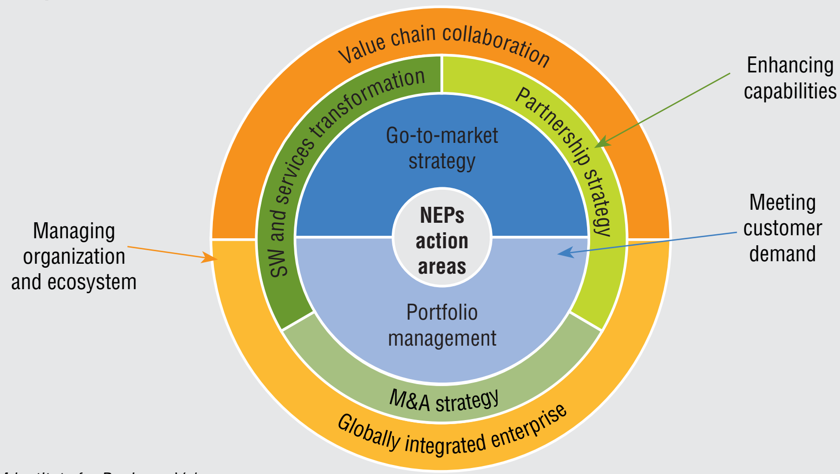
For orchestrators and allrounders, the choice is theirs to either become market leaders in their respective segments or transition to the other segment. When the dust clears, though, we believe orchestrators have the most significant opportunity to be among the very few global players remaining in 2017 and beyond.

FIGURE 7.
Evolutionary path for NEPs.



Source: IBM Institute for Business Value.

FIGURE 8.
Actions to improve or transition current business models.



Source: IBM Institute for Business Value.

Regardless of category, we believe it is imperative for NEPs to respond to a set of key action areas designed to help them succeed with their respective business strategies.

Meeting customer demand – NEPs should closely examine their marketing strategies and align their efforts with the continuously evolving needs of specific customer segments. This may entail repositioning both the solution portfolio and brand image to create a more robust focus on software and services in order to provide greater value add for the customer. NEPs will also have to assess which role to play in providing content to consumers.

Enhancing capabilities – It may not be enough, however, for NEPs to continue along with merely evolving their standard offering. They may need to look, instead, at creating equipment and service diversity either organically or through strategic partnerships and/or mergers and acquisitions. We believe that partnerships are the fastest and most efficient way for NEPs to complement their existing portfolio.

Managing organization and ecosystem – The few surviving NEPs in 2017 are likely to have at least one thing in common: they will be globally integrated enterprises. To get to that point, companies today should consider building a specialized enterprise composed of modular components and be prepared to leverage available global assets and service distinct global markets. Component business models offer an approach to identify those modular components and to drive a specialized focus, both internally and externally. Internally, components help firms rethink the leverage they can achieve with the assets and capabilities they own. Externally, components help companies source specialized capabilities they cannot feasibly create themselves. Combining these types of specialization allows firms to redefine their competitive positions.[22] Additionally, NEPs should seek to create a highly scaleable and seamless value chain to improve operational efficiency, quality and effectiveness.

For those NEPs looking to establish leadership positions in their current categories, attention should be focused on bolstering returns from existing offerings and customer segments. Artisans, for example, should focus on operational efficiency through the use of low-cost resources and optimize the use of research and development expenses through quick adoption of new technologies created or driven by innovation leaders. Orchestrators can focus on technology innovation, create partnerships to augment existing capabilities and build a scalable, efficient supply chain model. The allrounder can develop end-to-end capabilities either organically or through acquisition, commit to technology leadership, diversify business offerings and focus on operational efficiency.

Conclusion

In summary, our research leads us to believe that only the orchestrators and allrounders will be positioned to be among the few NEPs that survive the consolidation and convergence as globally competitive enterprises by 2017, with orchestrators on the inside track.

However, both orchestrators and the allrounders will need to optimize the positioning of their business models and how they interact with their ecosystems. NEPs will need to transition even more quickly to take advantage of evolving opportunities – such as services or multimedia – in order to compensate for the slow infrastructure growth.

We anticipate this slowdown in growth to drag on as certain solution segments are facing saturation. The growth in the services business and in emerging markets may not yet be able to fully offset this development. This may also be reflected in an on-going market volatility of NEPs' stock prices. Ultimately, investors will identify winners and losers and put their money in stocks which appear most attractive to them.

Given the slowdown of the market growth, even being among the top three in a business segment may not be enough. The top spot is the place to be!

Questions to ponder – are you ready for the converging world?

For NEPs, the challenge is to aggressively take advantage of the seven mid-term trends to be in a position to survive the long-term shakeout and consolidation we believe will pare this industry down to just a few major players.
To determine if you are ready to tackle the changes inherent in this converging market, you can ask the following questions about your company:

- How do you believe the communication ecosystem will unfold?
- Do your service provider and enterprise clients have changing and ever increasing expectations? Do you know what they are?
- What is your plan to respond to the fierce competition likely to come your way?
- Can you drive the industry by transforming the way you do business? Or is the industry driving you?
- What is your strategy in response to the on-going industry consolidation?
- Are you positioned for sustainable leadership and success?

The world is shrinking. Industry lines are blurring. Networks are converging. It is happening now. Are you ready?

About the authors

George Bailey is General Manager and Global Leader of the IBM electronics industry organization. He leads a worldwide network of nearly 5,000 IBM employees focused on electronics industry clients and the development of business and technology solutions that meet industry needs. George has appeared on American television and radio business programs, including CNBC TV's "Power Lunch," and has been frequently quoted in business magazines and newspapers. George's first job out of business school was a two-year tour at AT&T. He then moved into consulting and has focused on high-technology companies ever since. He is the author of "Irresistible! Markets, Models, and Meta-Value in Consumer Electronics" and "A Thousand Tribes: How Technology Unites People In Great Companies," (Wiley. April 2002). George can be contacted at george.bailey@us.ibm.com.

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