

Next-generation carriers

by Bob Drummond, Vice President, Professional Services and Marketing, OpenCloud

Skype and similar businesses have decimated telecom carrier revenue projections by offering ultra-low-cost communications using technologies, including broadband WiFi and VoIP, which carriers do not control. Traditional carriers often lack agility to offer low-cost services. All-IP networks promise savings, but carriers still need to drive down service costs to meet the competition. Open platforms and JAIN SLEE, the open Java standard for event-driven application servers, facilitates the cost-effective development and execution of competitive services across existing and next-generation networks.



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In recent years, telecommunications has been one of the worst-performing sectors in stock markets around the world, and price-earnings ratios suggest there is little investor belief that the situation will soon improve. The existing business model is under attack from converging industries, as Internet, entertainment and content businesses gaze enviously at the rich cash-flow potential of telecoms services.

With established user expectations, wireless carriers can monetise even something as simple as mobile phone ring-tones, which seems inconceivable to an Internet business. The Crazy Frog ring-tone alone has reputedly earned more than US\$25 million for Jamster!, and a similar amount for the carriers who simply facilitated the download. Perhaps an even more dramatic statistic is the US\$10 billion net profit that NTT DoCoMo's i-mode service in Japan generates from its 46.8 million users - an amount greater than the combined net profits of eBay, Amazon, Google, and Yahoo!¹.

Telecom carriers, however, are contemplating this industry convergence from the opposite perspective. They accept the inevitable emergence of a new value chain, but they have no

intention of surrendering their lucrative position as a provider of communications services to settle for the role of a 'bit pipe' utility. Instead, they are looking at how to reproduce the innovation and dramatic growth they have seen in Internet businesses and applications over the past decade. Indeed, SMS, *short message service*, has been the most recent runaway success in the telecoms market and it came about more as a result of user inventiveness than carrier innovation.

So does the telecoms industry have what it takes to reinvent itself to meet the challenges of this new world order?

Leaving a legacy

Carriers believe that they do have what it takes to succeed. However, the missing ingredient for them in the new competitive landscape is agility. They are hampered by networks that were conceived and built in an era that had a different view of the future of communications. It has left them with a legacy of disparate proprietary systems and 'vertical silos' serving different access technologies.

Carriers now recognise that the real threat to their business is no longer from competitors or new entrants, but from disruptive substitution. With comparatively minimal investment, Skype and similar businesses have decimated telecoms revenue projections by delivering substitute call services at ultra-low costs, using disruptive communications technologies including broadband WiFi and VoIP, which carriers no longer control.

From comparable infrastructure-based industries, such as air travel, gas or electricity supply, carriers learn that different rules of competition will apply in the emerging telecoms value chain. Similar to the investment in aircraft or laying pipelines, the prohibitive costs of burying communications cables and building a core network mean carriers don't face losing their core transport business any

Narrow market scope	Segmentation	
Broad market scope	Differentiation	Cost leadership
	Uniqueness competency	Low cost competency

Figure 1: Cost leadership strategy

¹ 2006 net profits as reported on finance.yahoo.com

time soon, even though technologies like WiFi and WiMAX mean that access is less secure. However, operators are not satisfied with being limited to 'bit pipe' operating transport and access networks that form the commodity business. They recognise that the key to profit and growth lies in developing the value-added next-generation network services that generate new opportunities for revenue and customer loyalty.

Cost leadership

Although the services layer of the next-generation network holds the greatest potential for value creation and revenue growth, it is also the area of greatest competition. The carrier is just one of the players competing for a piece of this lucrative action. Some of the factors that will give players a distinct competitive advantage in this arena are low costs, agility, brand marketing and product innovation.

All-IP networks promise savings in the transport network infrastructure, but other measures are required to drive down service provision costs, where competition will be toughest. The only alternative will be to surrender that market to more agile competitors who are not burdened with legacy infrastructure, entrenched organisational and technological silos, and the associated cost base.

Many carriers are used to competing by segmentation and differentiation. Continuing this course will bring them into head-on competition with Internet businesses in the services layer that they want to dominate. Arguably, cost leadership² will become a popular competitive strategy because it leverages carriers' strengths, notably: scale economies (many carriers are global, and tend to be sizeable organisations); experience of curve effects (many carriers have over 100 years' experience in the communications business); high volume business; and large customer base.

Still, if carriers have such potential cost advantages, why are new entrants today able to undercut them with disruptive offerings?

The need for 'openness'

The main barriers to carriers achieving a cost leadership position in the market are the technical, commercial and contractual constraints of their current network infrastructure. Proprietary, vertically oriented, monolithic network architectures do not let carriers be flexible enough. Furthermore, these network architectures are tremendously expensive to modify or enhance with new services, expensive to operate, support and maintain across the various network silos, and are slow to progress.

To achieve the required flexibility, carriers have spent a decade demanding open platforms from their suppliers. Against a series of open standards initiatives, including Parlay and JAIN founded by operators to drive this agenda, infrastructure vendors managed to rest on their proprietary technologies and associated high replacement costs to protect their domain. The carriers' own inertia and risk aversion also contributed to the status quo.

In the past, carriers could afford to suffer the burden of being locked-in to a high-cost infrastructure because their competitors were in the same situation, but this is no longer the case. What is holding back innovation in telecoms today is not lack of foresight or creativity, but the prohibitive costs of developing new services or combining existing ones in new ways.

Enter JAIN SLEE

Gartner recently stated, "Adoption of a low-cost infrastructure for telecommunications will likely open opportunities for new services that are forbiddingly expensive today. The impact of the new services in a standards-based converged network will be broader and faster than it can be today."

What is needed is an open platform, and JAIN SLEE, the open Java standard for event-driven application servers, addresses this challenge. It is tailored to the large-scale execution of communications services across existing and next-generation networks, enabling JAIN SLEE-compliant application servers to provide the open, flexible service execution platform that is essential to achieve agility in service development and deployment, and also to capitalise on cost leadership.

In parallel to the rise of the JAIN SLEE standard, a number of advances have combined to bring the proprietary infrastructure lock-in to an end. Commercial pressure, the introduction of disruptive technologies and the growing adoption of open standards are all generating exciting opportunities for application and service development by operators, as well as by competing third-party developers.

Commercial pressure - The telecom sector is seeing a new round of infrastructure investment after the lean years following the dotcom downturn. In looking to leverage existing investment and integrate new and legacy equipment, carriers are using the new equipment procurement process to apply pressure on suppliers for openness and access to proprietary protocol specifications.

Disruptive technologies - New open application servers now easily match proprietary in-

telligent network, *IN*, equipment in high-end transaction processing and carrier-grade reliability. This means that carriers benefit from continuous availability, telco-grade latencies and superior scalability, all on commodity hardware and operating systems.

Open standards - The mainstream adoption of JAIN SLEE has resulted in the compliant platforms becoming more readily available. By opening up the world of telecoms to millions of Java programmers worldwide, including carriers' own in house developers, JAIN SLEE-compliant platforms have created a vibrant and competitive market for off-the-shelf telecoms applications with the added benefit of service portability. With open portability across JAIN SLEE-compliant platforms, even a custom service developed specifically for a particular carrier can contribute to savings elsewhere by re-deploying it in other countries or networks that the carrier owns.

Business value

In contrast to the optimistic and exuberant investments in the past, carriers today expect a positive return-on-investment, *ROI*, within a period as short as 12 to 18 months. Faced with this hurdle, investments in JAIN SLEE open platforms are easy to justify because the costs of modifying and maintaining existing proprietary systems tend to be noticeably higher. However, the real value of the JAIN SLEE platform is experienced when innovative services are deployed.

The cost of developing and deploying services on an open platform is a fraction of that faced by carriers using proprietary alternatives, with the added bonus of a wider choice of suppliers. As the platform is already integrated with network switches and operational support systems, *OSS*, developers can focus solely on the development of the service logic, which drastically reduces in-house development from years to weeks. Carriers can experience even further cost benefits by licensing an off-the-shelf JAIN SLEE-compliant service from a third-party application vendor.

As a result, the successful next-generation carrier will either be an efficient utility business providing transport, or it will leverage its cost leadership advantages to compete effectively as a provider of compelling communications services. Forward thinking service providers are already using the open JAIN SLEE platforms across their infrastructure to achieve lower costs for deploying new, innovative services, and establishing a clear and sustainable competitive advantage. ●

² Porter, M. E. (1980), 'Competitive Strategy: Techniques for Analyzing Industries and Competitors'. It should be noted that a cost leadership strategy involves capitalising on inherent structural cost advantages of a business, and does not necessarily mean providing the lowest prices, or pursuing low costs at the expense of quality.