

Transforming the Service Provider Revenue Engine

By S. Mukerjee, J. Betjemann

The wireless marketplace is in a period of transformation, driven by the early 2008 spectrum auctions in the United States and Canada and the impending launch of next-generation technologies. Similar auctions are projected for other parts of the globe in the coming years as well. Even in advance of these auctions (and amid the increased competitive threat posed by potential new entrants into the service provider arena), service providers have been forced to grapple with hard questions about their businesses, as industry forces and market models transform.

Competitive pressures relentlessly demand that service providers invest in network upgrades to the latest and greatest technology. This leaves less room for investment decisions to be driven by broader strategic analysis of how new upgrades will impact revenue growth and enhance margins. As the market evolves into a next-generation world – with wireless networks becoming faster and more open – choosing to follow the current course of the traditional service-provider business model could hasten service provider descent into becoming a dreaded “dumb pipe,” which is a threat today. The service provider revenue engine must be transformed; otherwise revenues and margins will erode.

To date, service providers have countered the dumb pipe syndrome by focusing on new services (whether homegrown or via partnerships) that ride on top of the pipe. Essentially, service providers have attempted to move up the value chain, providing value-added services that get them closer to addressing changing end-user communication behaviors and away from the unglamorous network characteristics of communication access. However, given the obvious strength major players in applications, content and the Internet have in their ability to drive value-added services, this strategy equates to swimming against the tide. Service providers need to focus on their unique assets (for additional information, see our article in this issue entitled, *Business Transformation: Advanced Business Models for Converged Communications*).

At Alcatel-Lucent we believe service providers should focus squarely on their network assets and reject the notion that the pipe is dumb. In fact, the pipe is getting smarter and smarter as service providers leverage their intangible network intelligence assets. Furthermore, carriers must challenge themselves to reject certain prevailing strategies, such as on-portal (walled garden) Web 2.0/3.0 application initiatives. They must promote an open networks philosophy that welcomes third-party applications and content providers who are looking to execute independent mobile Internet strategies. Open networks will provide an environment to maximize the monetization of the “smart pipe.”

To effectively drive revenue growth, service providers need to view their networks – and enabling data within the network – as valuable resources optimized for sale to all comers on a retail and wholesale basis.

- In the retail market, focus needs to be on creating new sources of revenue that are paid for by brands and advertisers rather than by end users. That revenue may then be used to subsidize the fees that are charged to end users.
- In the wholesale market, all types of transactions should be welcomed and considered, whether long-term Mobile Virtual Network Operator MVNO relationships or short-term purchases of user information such as location by a third-party application provider. Service providers that offer the

most dynamic access to wireless network and data resources will experience the greatest demand for their offerings and have the greatest pricing power.

Recent developments and pressures in the wireless marketplace illustrate the need for a new strategy for revenue generation.

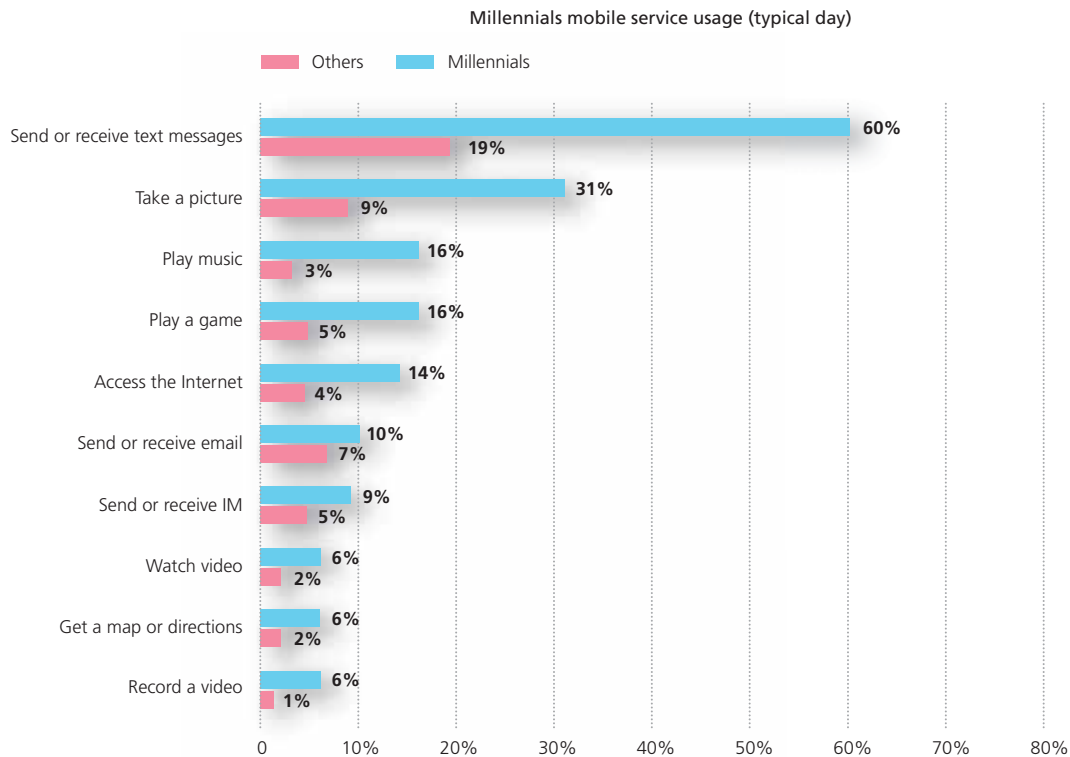
Evolving Nature of the Wireless Marketplace

Traditional cellular networks were designed to meet the unique challenges of mobile voice service. Therefore, wireless service providers built their networks and competed for customers based on their ability to best solve voice challenges. Today, despite marketplace attention to growth in mobile Internet and data services, the vast majority of service provider business is still derived from subscription-based voice service. Based on data from Pyramid Research, global service providers derived 81% of ARPU from voice in 2007.¹ Therefore, from an operational standpoint, the primary goal of the operator has been to ensure voice coverage and quality and to avoid circumstances where network resources – both equipment and spectrum – are overtaxed.

With broader deployments of 3G and planned roll-outs of next-generation networks, cellular networks are evolving to look like any other high-speed IP network. This has two major effects on the traditional service provider business model.

- The first is that, at an accelerating pace, voice is becoming a commodity, as evidenced by the industry trend toward flat-rate, all-you-can-eat rate plans.

Figure 1: Millennials' usage of data applications compared to the average user



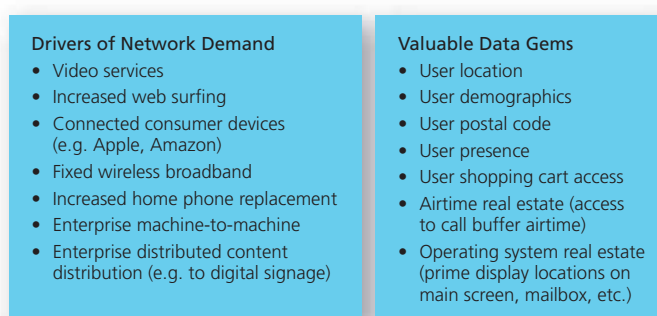
Source: Based on Pew Internet and American Life Project, 2008

1 © 2007, Pyramid Research, Global Mobile Data.

- The second is that high-speed IP networks, wireless or wired, are very friendly to most popular Internet applications and services; this means service providers can expect their customers to increasingly expect their networks to support all forms of applications available on the Internet. Customers will be dissatisfied with limited on-portal applications presented by service providers. Figure 1 illustrates the thirst the younger generation – the Millennials – has for data-rich applications.

While these effects may be disruptive to service providers in the short-term, the evolution toward high-speed IP networks also brings with it two enormous opportunities (Figure 2).

Figure 2: Next-generation wireless network evolution creates increased network capacity demand and the market to leverage network-enabled Data Gems



- The opportunity to benefit from anticipated massive demand for high-speed wireless network access can be accomplished by effectively managing network inventory as a scarce resource to maximize profits. In a broadband 3G/4G world, absolute demand for cellular network capacity should exceed supply for the foreseeable future, and certain buyers will pay more than others.
- The opportunity to generate revenue by monetizing intangible assets based on access to unique and differentiable data elements (or Data Gems) produced by service provider networks and customer relationships. Data Gems are component parts that can be leveraged within a myriad of native and third-party application services running on the network – making these services better. These Data Gems can be organized and utilized in an aggregate model that does not infringe on end-user privacy or can be tracked on an individual basis in an opt-in model.

Service providers can expect demand for their network capacity to come from both traditional retail consumers they've been serving under their brands and from customers seeking wholesale capacity.

Wholesale customers include:

- **Regional carriers.** Small carriers that wish to offer nationwide packages to their local consumers and need roaming agreements.
- **MVNOs.** Branded, niche-marketing companies that launch retail wireless service businesses riding over another service provider's network.
- **Enterprises.** Companies providing in-house wireless services to employees and partners.
- **Consumer electronics manufacturers.** Manufacturers that bundle wireless Internet access with their products.

Demand for Data Gems is likely to come from a variety of players looking to enhance the services they deliver via the mobile Internet, including:

- Wholesale customers (identified above),
- Search Providers,
- Advertisers/Ad Servers/Ad Networks,
- Application Developers,
- Content Providers, and
- e/m-Commerce Providers.

In the face of this increased and diversified demand, a service provider's full portfolio of holdings and network assets must be looked at in a new light. Traditionally, the service provider managed those resources to simply meet voice demand and to offer new on-portal applications and content. They now need to shift their focus to ensure spectrum and network resources are actively applied against revenue and profit-generating demand for network and Data Gem resources.

Consider the following analogy that highlights the change service providers must make as they approach applications and content on their networks. In the past, service providers could be equated to restaurants that sold full meals to customers. In the future, they need to be seen as grocery stores focused on selling food to third-party restaurants that then serve the customers. This analogy shows how the service provider can optimize the opportunity by reaping a smaller piece of revenue from a larger number of meals, rather than all the revenue from a small number of meals.

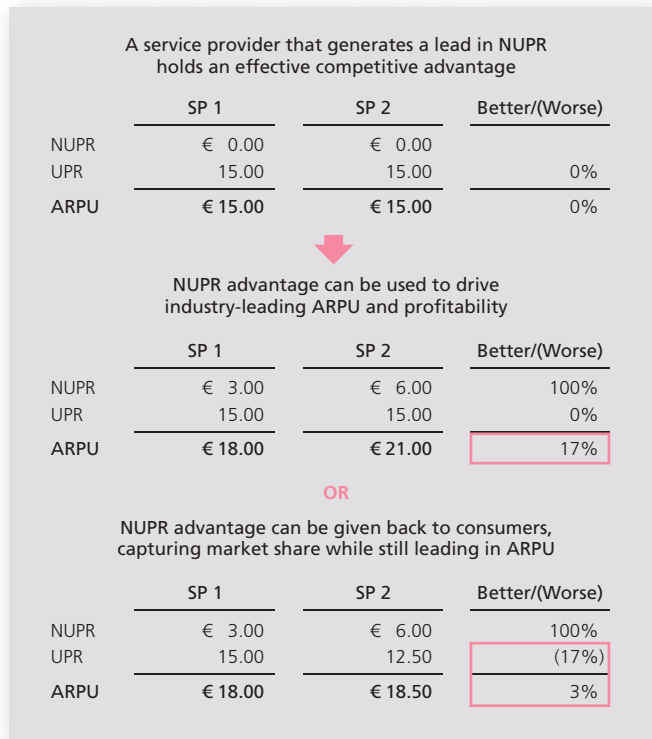
Redefining Industry Revenue Metrics

As the industry continues to evolve, the classic revenue metric for retail service provider – ARPU – will need to be broken into two “per-user” components. We define these as User Paid Revenue (UPR) and Non-user Paid Revenue (NUPR) (Figure 3).

UPR represents the voice, data and on-portal applications charges that appear on an end-user bill (or are included in a pre-pay package). Within retail services, NUPR includes revenue that flows to the service provider from either on-portal advertising or the sale of Data Gems to the marketplace (this could be unit sales, revenue shares, affiliate fees and/or transaction fees). Today, NUPR is very low or zero for service providers.

Retail ARPU is projected to be essentially flat or even declining into the future. Based on data from Pyramid Research, global ARPU is forecasted at ~€15.00 (\$23 USD), with a modest decline year-over-year.³ With UPR currently representing the major component of ARPU, the key to service provider top-line growth will be NUPR. Service providers with the highest NUPR will have the strategic advantage of being able to under-price the competition for consumers, while still achieving market-leading levels of ARPU due to the NUPR subsidy.

Figure 3: Mechanics of the two components of ARPU: NUPR and UPR²



To maximize NUPR and thus total ARPU, service providers can focus on ensuring their networks are attractive to both third parties (that can generate NUPR) and wholesale customers (that can drive expansion in profitable business-to-business relationships). The less encumbered the network is with proprietary service provider protocols, partners and applications, the more attractive it is to third-party developers and to wholesale customers. Service providers need to have a service delivery environment that is based on an open-services architecture providing flexible, consistent and simple access to third-party services, resulting in increased quality of experience for the end user. It should be noted that service providers will not have all the expertise in-house to maximize NUPR and hence will turn to specialized best-of-breed vendors (technology partners) who can offer specialized solutions.

Those service providers first to tailor their networks to open principles could be the early leaders in the growth of retail NUPR and wholesale revenue. They will enable an environment conducive to providing the most “eyeballs” to third parties and will likely be in a position to capture market share and outperform their competitors.

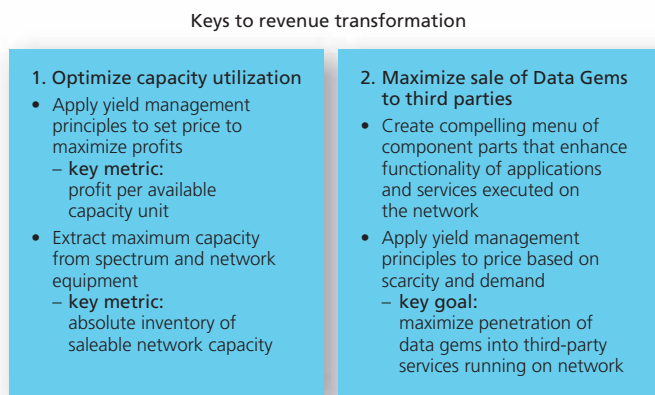
Updating the Service Provider Business Model and Strategy

Given the limited nature of a service provider’s capacity, as well as changing dynamics in the marketplace, it is paramount that Data Gems and pricing and allocation of network capacity be optimized (Figure 4). This should be the overriding mission for transforming the revenue engine, and it cannot be achieved alone. Service-provider success in this mission is inexorably tied to the success of technology partners in upgrading their business models in unison.

² UPR includes subscription-based revenue from end users, as well as “one-time usage” revenues such as mobile broadband access or single on-portal content purchase. NUPR includes sponsorship-based revenue.

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Figure 4: Maximize revenue for service providers



Once the service provider business model is transformed, prices for network usage are set via yield management technologies and methods. Yield management assesses demand at a given moment and analyzes past commitments and future opportunities. To maximize profits, yield management can provide real-time analyses of:

- Demand,
- Underlying actual costs,
- Opportunity costs,
- Usage characteristics and SLA requirements of different user types (retail and wholesale); and
- Available capacity.

Additionally, the service provider must make strategic investment decisions about when and where to expand resources. These investment decisions may include new equipment purchases, spectrum sharing deals with other service providers and the deployment of new technologies such as femtocells that localize access to the wireless network.

For the scenario presented in this article, the breakdown of the service provider business will not be radically different. A typical service provider will still run a consumer-oriented retail service and will host MVNOs and roaming partners with available excess capacity. The most significant difference will be seen in the utilization of yield management to set and adjust pricing plans for the retail business and effectively expand the amount of excess capacity for wholesaling.

By focusing on Data Gems and dynamic terms for transactions, service providers will increase the desirability of their networks to a wider variety of potential wholesale customers. Simply, offers will be better matched to the demand profiles of buyers. As a result, the pricing of capacity and Data Gems will be based on demand at a given moment, as well as on analysis of past commitments and future opportunities.

When looking at the service provider business from a yield management and dynamic pricing perspective, it looks like other industries, such as airlines, hotels and TV broadcasters also have disposable inventory. The differences between wireless network capacity and these industries are that the number of capacity customers is much fewer and the time horizon over which delivery commitments play out is much longer. For instance, the number of potential MVNO customers for wholesale

capacity will be relatively few, and the capacity commitments that they need will cover multiple years. Therefore, each transaction and pricing decision made by a service provider carries relatively heavier weight than transactions in other disposable inventory industries.

Conclusion

From a financial and operational standpoint, a large portion of future service provider metrics will focus on profitability per sales unit (as NUPR revenue sources increase over time compared to UPR), the absolute size of saleable network capacity and the penetration of Data Gems into application and content services. While many elements of the transformed model may seem pretty basic, it is important to recognize that the model requires service providers to adopt major changes to recent operating philosophies as well as to their relationships with technology partners.

Optimal service provider performance will be facilitated by partners that provide the best technology and services for managing inventory and the sales process. This means the selection of technology partners is paramount. Traditional relationships between service providers and technology partners have been fairly straightforward, focused on turnkey product sales and installation and break/fix services. This has led to service providers typically building their networks with equipment, services and software from a few vendors.

To maximize revenue, the service provider must have a more holistic view of network elements and data in order to make optimal sales and network management decisions. A disparate array of equipment and operators can obscure the holistic view. Additionally, capacity can be maximized and Data Gems optimally extracted when new software tools are able to interact directly with every network element in the field. This interaction needs to be at a deeper level than any of the protocols defined in wireless standards like CDMA, GSM, UMTS, WiMAX or LTE; therefore, operational effectiveness again may be impeded if there are too many partners involved.

Alcatel-Lucent supports next-generation service provider strategies by developing new technologies and a service delivery environment focused on delivering a value-added optimization layer that rides above the standards-driven network layer. The optimization layer maximizes network utilization and facilitates the correct pricing of capacity and Data Gem sales to various retail and wholesale customers. Additionally, our focus is on seamlessly bundling the technology and service needs – both traditional and new – to fully realize the promise of the network. Our mission is to effectively meld all of the network technologies and services into one profit-maximizing business solution for the service provider. >>

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