

Mobile Broadband Business Designs: Operators Under Cost Pressure Are at Crossroads

Balancing value and volume

By
Raúl Peris
Thierry Fabing

Mobile broadband is one of the star products of the last two years, with the arrival of 3G+ to most markets. The number of consumers connecting their laptops or netbooks to the Internet through a data card or a dongle is rapidly increasing across the globe.

Mobile broadband differs from mobile Internet (i.e., accessing the Internet directly through a phone/smartphone) and is much closer to the experience of fixed broadband than mobile Internet, which has important consequences for the mobile industry.

This paper analyzes the increasingly fast adoption of mobile broadband services in Western European markets. We describe the more common competitive landscapes and the business designs that have emerged to balance costs and revenues. Finally, given that the current business case for mobile broadband is still incremental from the revenue side, we outline specific initiatives to evolve current business designs to ensure scalability.

Rapid Mobile Broadband Take-Up

Mobile broadband is experiencing a "hockey-stick" growth curve, similar to those experienced by mobile voice (seven to ten years ago) and fixed broadband (three to six years ago). In some Western European markets, mobile broadband penetration has exceeded 10% of total population in less than three years. In Austria and Sweden, more than one out of every four broadband connections is a mobile one. What is behind the tremendous take-up of mobile broadband services?

The main driver for mobile broadband adoption is price; the pre-requisites are speed/bandwidth and pricing transparency.

Price. The key driver for adoption of mobile broadband services is price. In Austria in 2006, the normal mobile bundle was 300 Mb for €29 a month. In 2009, 3 Gb bundles (and higher) are priced at €15 per month—a 20-fold drop in three years (see Exhibit 1).

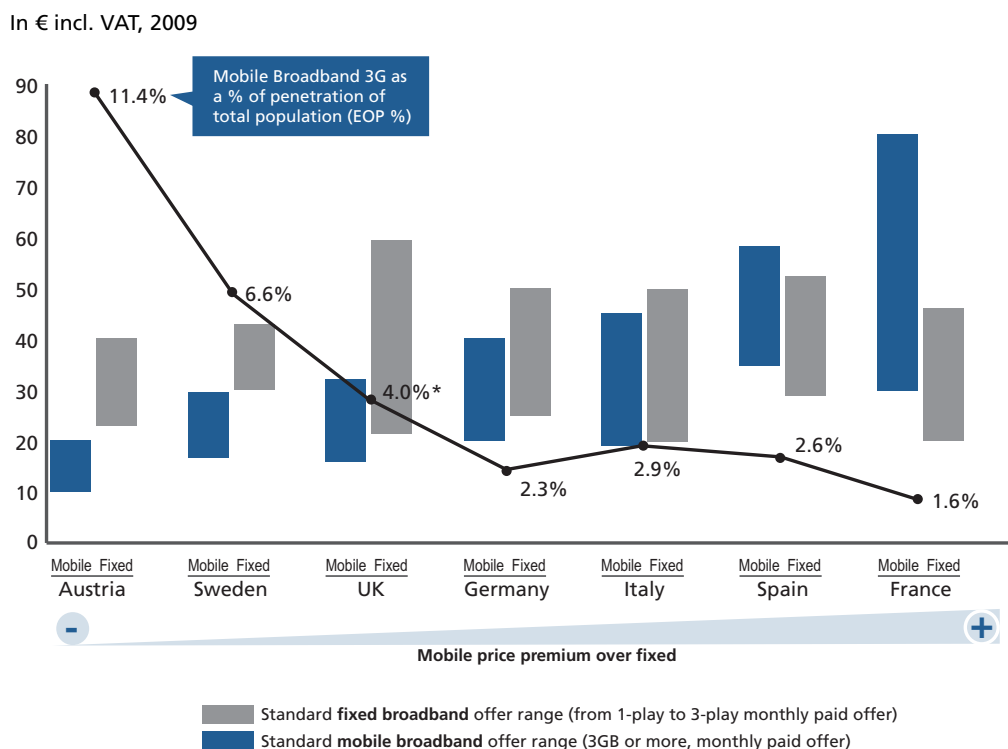
As a consequence, the penetration rate in Austria grew much higher than in all other European markets, where prices are considerably higher.

Speed. Moving from 2.5G/3G to 3G+ represents a step change in bandwidth and customer experience. As customer experience improves, so does the "value for money" equation and take-up of the service. Consequently, one of the commercial hooks for mobile broadband is speed/bandwidth, with tech-spec advertising phrases such as "Turbo 3G" or "7.2 Mbits."

When mobile broadband advertised speeds—which are not necessarily the actual speeds—are close to those of fixed broadband, mobile broadband appeals to more and more segments of the population.

Pricing transparency. Mobile broadband product packages have evolved significantly

Exhibit 1 Comparison of fixed and mobile broadband prices



Source: Operators websites, European Commission 2009.
* Data 2008

over the last few years. Early on, the most widespread pricing scheme was pay-per-use, in which a customer would pay for every Mb of usage (download). Although pay-per-use is the most logical pricing scheme to properly manage costs, it is not the most customer-friendly option, because customers don't know how much they will pay per month. This is especially relevant when most fixed broadband is priced at a flat fee.

The most widespread pricing scheme now is large-volume (download) postpaid bundles. The consumer pays a monthly fee for a certain amount of data. When exceeded, there is no extra charge, but the bandwidth rate is significantly reduced. In markets with less demand, the most common pricing scheme is a prepaid "daily tariff," in which the customer pays a certain amount for daily usage. This offer targets occasional users on the move.

When mobile broadband reduces the speed gap with fixed (or is perceived to do so), and when the price structures are more transparent and at par with (or lower than) fixed broadband, then mobile broadband has the potential for mass-market appeal.

However, to turn an increasingly large and growing market into a profitable and scalable business, several questions need to be answered:

- What is behind the fast price erosion?
- What are the costs for operators?
- What are the impacts of pricing and costs on mobile broadband margin?
- How should "convergent" operators properly balance the push for fixed broadband and mobile broadband?

- What business designs are scalable and will ensure a sustainable competitive position and profitable margins?

Competitive Landscape: Value and Volume Markets

The price level of mobile broadband and consequent level of penetration vary significantly among the Western European countries. Prices are a result of very different competition dynamics. In general, most Western European markets fit two very different types of competitive landscapes.

1) Value markets. In markets where mobile broadband is priced at a premium over fixed broadband (for roughly similar performance), take-up is relatively slow. Competition is not fully centered on price, but more on service, brand, and devices. In value markets, the competitive landscape has these characteristics:

- Three established MNOs sharing voice customers
- A strong incumbent with a dominant position (market share generally above 40-45%)
- Most MNOs also have a fixed broadband business with sizeable customer bases; hence, there is no incentive to discount mobile broadband vs. fixed broadband, given the risk of cannibalization

In value markets, the mobile broadband user is typically an "early adopter," either a business customer or high-value residential customer who is willing to pay the premium for mobility, often as a complement to fixed broadband.

Examples of "value markets" are Spain and France.

2) Volume markets. In markets where mobile broadband is priced at a clear discount vs. fixed broadband (for roughly similar performance), the take-up is high. There is a race for acquisition of mobile broadband customers. In volume markets, the competitive landscape has these characteristics:

- At least four MNOs fighting for voice customers for several years and, more recently, mobile broadband customers
- The smallest and latest MNO entrant usually holds at least 5% market share
- The majority of MNOs do not have large customer bases in fixed broadband; consequently, there is minimal cannibalization effect to consider if a customer replaces a fixed broadband product with mobile broadband
- 3 (Hutchison) is in the market. As a late entrant in most markets, and with low penetration in voice, 3 is now betting significantly on data. Consequently, 3's presence has typically heightened competition, triggering retaliation from other MNOs in a race to acquire customers. The result: Very fast price erosion on mobile broadband

In volume markets, mobile broadband now has mass-market potential, since multiple segments can afford the service. The performance gap between fixed and mobile broadband products is less evident, and residential consumers are starting to consider mobile broadband as a potential substitute for fixed broadband, rather than as a complement to it.

As customers cancel their fixed broadband connections, the challenge for operators is to optimally balance fixed and mobile broadband to maximize company value.

Examples of volume markets are Austria, Sweden, and increasingly, the UK.

Business Designs: Value and Volume Markets

Given that two main competitive landscapes exist, it is important to understand the different strategies operators have adopted in their business designs.

1) Business Design in a Value Market

- Wide and well-balanced product portfolio, i.e., prepaid products for occasional and new users, and postpaid products for regular customers (high-value customers)
- Clear price discrimination among products and segments, to maximize margin per segment. Most popular pricing is prepaid, especially daily tariffs
- In comparison with fixed broadband, mobile broadband products carry the "mobility premium" and are more expensive
- Adequate margins allow the possibility for laptop/netbook subsidies with postpaid products
- Marketing is not solely centered on price, but also on devices (through netbook subsidies), service, and the "mobile" experience

2) Business Design in a Volume Market

- Product portfolio is focused on postpaid products
- Cheap "big size bundles" (all you can eat) emulate fixed packages in terms of bandwidth and perceived abundance of usage (not very restricted usage vs. true unlimited usage in fixed)

- Long engagement periods (24 month) manage churn and lock up the customer
- Marketing primarily focuses on price and functional benefits
- Subscription acquisition costs (SAC) are tightly controlled, with little economic space for strong subsidies. Given that there is no "ARPU in" in mobile broadband (no interconnection) and very little out-of-bundle usage or overage, the total mobile broadband ARPU is less than voice ARPU. Accordingly, MNOs might subsidize the connection dongle (less than €50), but not a laptop or netbook
- Nonetheless, operators have found a smart way to effectively "subsidize" netbooks or laptops—by charging an extra monthly fee of €15-20 to accommodate payback with an 18-36 month contract. The customer chooses between a regular fee and the higher one that includes a "free" netbook. This is more a financing mechanism than a subsidy, similar to handset financing, but provides another convincing argument for a consumer to try mobile broadband
- With very tight margins, operators manage costs tightly and carefully assess investments

Understanding the cost implications of mobile broadband take-up is paramount for any mobile operator, but especially for operators in volume markets.

Cost Implications of Exponential Growth

The tremendous take-up of mobile broadband across Europe has a cost consequence. The costs to acquire and serve mobile broadband customers fall into three main categories:

- Subscriber acquisition cost, mainly comprising a commission and hardware

subsidy (for dongle and/or netbook), is a one-off cost

- Network costs, which refer to both CapEx and OpEx to build network capacity and manage broadband usage. These costs are dependent on the number of customers and their usage, and are difficult to link to the cost of each individual customer (at least before acquisition)
- Other costs, such as after-sale customer care, are less significant but still relevant

While product managers easily control SAC to provide an adequate payback, network costs are much more difficult to ascertain and manage in a fast-growing market with usage patterns that are difficult to predict.

In any network planning exercise for voice or data (beyond pure coverage needs mandated by license requirements), good projections on the growth of subscribers and their usage is required. Those two inputs are critical to assess total network costs and necessary investments.

As mobile broadband products and pricing evolve quickly, so do customer usage and take-up, presenting operators with crucial issues:

- How can we ensure the network plan is always up to date?
- What are the consequences of not meeting consumer demand?
- Most importantly, how can we ensure that any pricing decision has a true positive bottom-line impact when accounting for all costs and investments?

Answering those questions is a complex, cross-functional decision. These data points illustrate the challenge for operators:

- Currently, average usage per customer is 1-2 GB per month, already one-seventh to one-tenth of average fixed broadband usage in most countries (biased by the fact that in fixed broadband there is significant peer-to-peer activity)
- In early 2008, T-Mobile UK declared its network data usage was already higher than its voice network usage—even though T-Mobile has 20 times more voice customers
- Since mid-2008, more than 85% of 3's UK network usage has been data-related
- The arrival of the iPhone and its App Store heightens the average data usage of 3G smartphones

In volume markets, answering questions on cost is by no means straightforward. Given the high incidence of (close-to) flat-rate pricing and its massive take-up by consumers, the growth path for usage and its related costs are higher than the growth path for related broadband revenues.

Take-up of service means more subscribers and revenues. However, the rapid erosion of prices and mobile broadband ARPU implies that revenue growth is not as exponential as might be anticipated. In addition, individual usage of mobile broadband is increasing as bandwidth and customer experience improve, which means further capacity investments to cope with demand as well as increased costs to operate the network.

Failing to meet demand or consumer expectations of quality can also have cost consequences. Some operators are facing a big surge of calls to customer service complaining about quality of service, which translates to un-forecast customer-care costs. Furthermore, some operators push

aggressive "try and buy" schemes in which consumers can try the service for a month and cancel without paying if the service has failed to meet their expectations.

In summary, the business case for mobile broadband in current conditions is tight, especially for operators in "volume" markets. Operators must do everything they can to create "breathing space" between the revenue line and the total-cost line to ensure margins on their broadband investments. How can they create that breathing space?

Adapting the Business Design to Cope with Increasing Network Costs

Integrated operators can quickly adapt their business design to control costs better than mobile-only operators, regardless of their inherent degree of operational convergence.

In an ideal world, MNOs would like to attract mobile broadband customers and associated revenues without the related network costs and investments. One way to achieve that is to reduce network usage. However, only operators with both fixed and mobile operations can do so. By off-balancing a share of traffic from mobile networks to the more efficient fixed networks, total network costs are optimized. Given that around 75% of total mobile broadband traffic occurs at home, the efficiency gain can be considerable.

Offers enabling such off-balancing of traffic from mobile to fixed networks are flourishing across Western Europe. The commercial aggressiveness of these offers varies by country and is in line with the level of competition in each market. In some cases, the mobile broadband customer gets access to WiFi hot spots for free; in others, an extra DSL connection with a WiFi router is given away at low cost, so when the user is at home traffic is re-routed to the fixed net-

work through the router. Regardless of the aggressiveness of the offer, the principle remains the same—diverting some usage from mobile to fixed networks.

In addition, the switch to a fixed network enhances customer experience, especially regarding throughput and indoor coverage, factors leveraged by operators in their value proposition to customers (e.g., "always best connected").

If integrated operators are able to correctly manage the risk of cannibalization between mobile broadband and fixed broadband when optimizing the usage of both networks, they will be better prepared for future deterioration of market conditions and have a stronger competitive position.

What about pure mobile operators? What changes should they consider in their business design to strengthen their position? And what should integrated operators also consider to further strengthen their competitive situation?

Consider network sharing. In the last five years, mobile operators have been signing local and global deals to share networks to significantly reduce investments and costs. The increase in mobile broadband traffic is an even more powerful incentive for operators to consider network sharing. At the same time, operators must carefully assess the business case of network sharing to decide the best solution—site sharing, RAN (Radio Access Network) sharing, and/or backhaul sharing.

Re-think mobile broadband pricing. It's now clear that flat-fee or abundance (e.g., big traffic bundles) pricing on mobile broadband has led to both rapid take-up and escalating usage and costs. In most cases, proposing less user-friendly or more expensive offers will be challeng-

ing. However, operators should still seek new pricing schemes to optimize margins, such as speed-based pricing or pay-per-use offers.

Find new sources of revenues. Mobile players could leverage their newly acquired customer base to find new sources of revenues. The most popular business model in the Internet world is advertising. 3 UK's idea is to use its mobile broadband "dashboard"—the window that appears in the computer screen every time a mobile broadband connection is established—to showcase ads.

Segment network management. Operators should consider introducing tighter and more segmented traffic-management policies to enable better network load control and better match customer value with costs. The specific network cell, customer profile, customer value, time of the day, type of application (e.g., surfing vs. downloading), among others, should be considered in developing an advanced network management mechanism.

Upgrade to 4G technology. Next-generation mobile technology (4G) will deliver significantly higher data-transfer speed more cost-efficiently, both at CapEx and OpEx levels. LTE requires fewer base stations than current 3G/3G+ technologies, and those stations will be cheaper to operate. But operators still need to wait before rolling out LTE, meanwhile suffering the ongoing increase in mobile broadband usage and costs.

Advocate for a more efficient spectrum. In Europe, mobile data uses the 2100 MHz frequency band. Higher frequencies allow for lower reach by base stations, requiring more base stations to meet coverage and demand. In the last two years,

operators have actively pushed regulators to open up the 900 MHz frequency band (the traditional GSM band), using a process called "re-farming." The higher efficiency of this lower-frequency band will significantly reduce network investments and costs.

Introduce femtocells. One of the problems with mobile broadband is indoor coverage, which is also linked to the high-frequency band (900 MHz provides better indoor coverage than 2100 MHz). Given that a significant amount of mobile broadband traffic occurs indoors at home or office, operators are investigating the use of mini-antennas (femtocells) in customer premises. This will improve indoor reception quality, as well as off-balancing traffic from the congested macro network. As an example, AT&T in the US has just started trials of femtocells with some of its triple-play consumers. Nonetheless, it is not clear yet whether femtocells will be a mass-market product, whether customers are willing to pay for femtocells, or whether operators will have the economic space to subsidize them.

In summary, operators should consider implementing most of the initiatives outlined above to ensure that mobile broadband delivers a long-term sustainable benefit for MNO shareholders.

Understanding Tomorrow's Market to Implement the Right Business Design Today

Mobile broadband is the lever that all mature operators are pushing to find extra growth in stagnant mobile markets. Higher speed, increased pricing transparency, and price reductions have triggered the massive take-up of the service in many Western European markets.

Nevertheless, the mobile broadband business case is a difficult one and does not deliver the hefty margins that the voice business has. Therefore, operators in "value" and "volume" markets need to carefully assess their mobile broadband business design. In value markets, MNOs must ensure that the markets do not transition overnight into volume markets without proper management. In volume markets, MNOs need to act now to increase margins, either through increased revenues per Gb or per user, better traffic management, or lower network costs.

Mobile and integrated players should carefully assess the mobile broadband competitive game and understand the potential consequences of any major changes in the landscape in order to design the appropriate strategy.

In the meantime, other players in the value chain (e.g., Apple) are taking clear advantage of the increased adoption of mobile services. Apple has been able to convince customers and mobile operators to rush for the iPhone and related products, while introducing a Trojan horse in MNOs' networks: The customer pays Apple directly for apps, while operators support the network costs to complete the transaction and use the software. If such activity becomes more widespread, mobile broadband operators will have higher hurdles to surmount as they look to increase margins. ❖

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Raúl Peris and **Thierry Fabing** are associate partners of Oliver Wyman. They are based in Paris and can be reached raul.peris@oliverwyman.com and thierry.fabing@oliverwyman.com

www.oliverwyman.com