

In search of the sweet spot

Mobile operators have been successful in kick-starting the market for mobile broadband. But as subscriber numbers and traffic levels soar, the question now becomes **how to maintain customer satisfaction**, as well as drive new revenue opportunities. The answer lies in adopting **new value-based business models** that enable segmentation through differentiation.

► **THE MOBILE BROADBAND** market is at a pivotal point in its development. The concept of connecting laptops and smartphones with high-speed mobile broadband is now widely understood and appreciated. Subscriber numbers are growing daily, and mobile data traffic has already overtaken voice traffic in the networks. In a few markets, mobile broadband has surpassed DSL in terms of subscriber numbers and is poised to overtake fixed broadband in 2011. But some observers see this growth as a “traffic tsunami” in danger of swamping mobile networks.

Broadband traffic growth – steady or dramatic – should be celebrated, not seen as a problem. Reporting by operators in 2010 shows some of the most successful in mobile broadband are seeing growth in both overall top-line earnings and EBITDA. A couple of operators that are aggressively pursuing mobile broadband have even managed to stabilize or increase voice ARPU.

Yet few analyst reports and publications seem to be picking up on this, with most still concerned about profitability, “high costs per GB” or “heavy usage swamping networks.” As a result, most discussions about business models tend to focus on how to cut costs by limiting usage or how to move traffic from the cellular networks to, for instance, Wi-Fi networks. And a lot of positioning is still going on between traditional telco businesses and computer or internet companies such as Apple, Google and other over-the-top service providers that are supposedly getting a free ride on the electronic highways provided by operators.

LOOK AT MARGINAL – NOT AVERAGE – COST

How cost per GB is viewed may have a profound impact on the end result and will of course affect how operators position offerings to the end user.

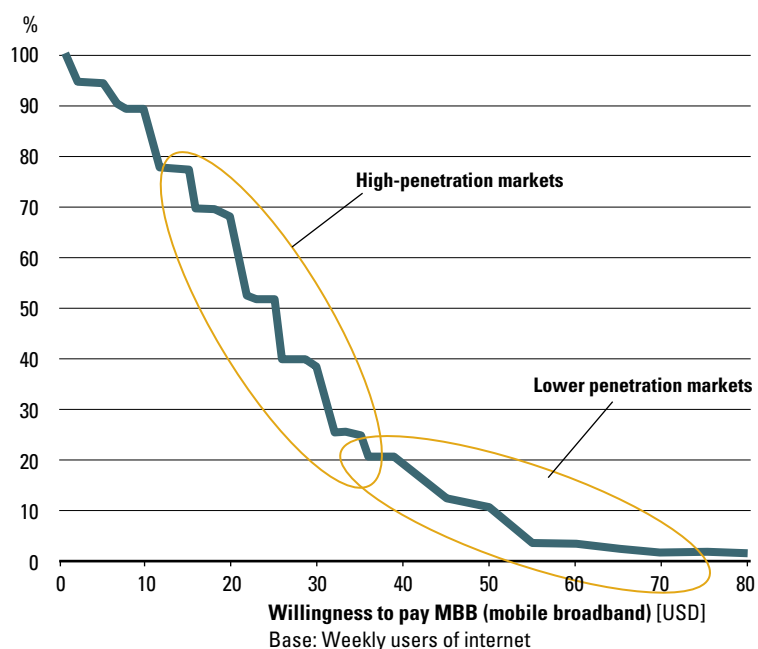
There is no question that many operators may correctly calculate their total cost per GB to be around EUR 10 (USD 12.9). However, this number represents an average cost across the entire network and is based on overall radio resources being virtually empty.

The average cost tells us when a mobile broadband business as a whole becomes

profitable. This will happen as soon as the pipe is filled up with enough paying subscribers – it is a matter of utilization. It is no different from an airline or hotel business, which will also be profitable with a good-enough utilization of its assets. The lower the ARPU, airfare or room charge, the more users, travelers or guests will be required.

What we need to realize is that since we are still at a very early stage of growing our business, and the pipe is still rather empty, we cannot use average cost per GB to figure out if an individual subscriber is profitable or not. Instead we need to look at the marginal cost to find our way forward. The question should be: What is the cost, from a network perspective, to handle additional traffic and additional subscribers? We can't know this unless we focus our attention on the most loaded sites and the cost of catering for growing traffic at those locations. As shown in a previous article (Mobile broadband – busting the myth of the scissor ►

Figure 1. Price elasticity – finding the sweet spot



Source: Ericsson ConsumerLab, 2010

**The magic number
– cost per GB**

► **Cost of a new site:**

EUR 100,000 (USD 129,000) depreciation period 20 years = a yearly cost of EUR 5,000 (USD 6,457)

► **Cost of a new radio base station:**

EUR 80,000 (USD 103,300) (21 Mbps 3x2 carriers) depreciation period 8 years = EUR 10,000 (USD 12,913)

Capacity = 80,000 GB at 50 percent utilization

Cost per GB = EUR 15,000/80,000 GB ≤ EUR 0.2 (USD 0.26)

► **Equipped with this knowledge, the operator's task becomes to:**

- Fill up the pipe, quickly and efficiently
- Optimize revenues based on customers' ability and willingness to pay
- Find additional revenue streams where possible to improve the case further.

► effect, EBR 2 2010) we find that this cost is less than EUR 0.1.

Based on this finding, you can conclude that basically any normal paying subscriber in virtually any mobile broadband network today is a profitable subscriber. The exceptions to this would perhaps be the extreme cases of the handful of users generating hundreds of GB per month, who, as a result, negatively impact other users' experience.

Another conclusion is that with such a low cost for handling the traffic load by, for example, adding another carrier at a site, there is no reason whatsoever to move an operator's most valuable asset (the subscriber) out of its second most valuable asset (the spectrum) through something like a Wi-Fi offload. Even looking at the option of adding a complete site, the cost is calculated in cents rather than euros or dollars (see side bar calculation). This makes solutions like offloading questionable. Instead, the focus should be on maintaining and improving the quality of the macro network, perhaps with future-proof solutions such as Het Net.

HOW TO FILL UP THE PIPE EFFICIENTLY

Simple one-size-fits-all packaging has helped to get the market going. But filling up the pipe while maintaining customer satisfaction and also increasing profitability will require more elaborate plans. Also, the higher data speeds of 4G will require that operators adapt their business models. Today most operators use some form of tiered pricing. In many cases, however, only data volume is used to separate the offerings. The reason for this is primarily the historical focus on cost per GB.

We still see cases of so-called overage charges per MB that are also intended to keep usage down. This is an efficient tool but has the adverse affect of scaring away subscribers. We can observe up to a tenfold difference in take-up rates for large bucket-based or "unlimited" offers compared to those with overage charges.

Ericsson ConsumerLab studies indicate that end users want two basic things from their data service:

1. *That it works for the entire month*
2. *That the cost is predictable.*

This means that limitations through throttling or overage charges are not acceptable if we ask our subscribers. Does this mean we should only use unlimited packages? Not really. In fact the best way forward is probably somewhere in between, but the most important change we need to make is to move towards value-based charging models, rather than cost-based ones.

Some operators are beginning to introduce services that are differentiated by qual-

ity of service, even if, in some cases, it is only a matter of ensuring a difference in speed between the various offers. Others are experimenting with differentiating the quality of user experience based on other parameters, such as time of day, location, device type and service type, to give additional flexibility.

Vodafone Spain, for example, in early 2010 introduced a "Gold Pass" package targeting business users. The promise they gave was that subscribers would always get a better experience than regular users in the event of congestion.

Value-based charging can be used to encourage take-up and usage of mobile broadband among all types of users, and to offer them informed choices about the way they pay for and use the services – creating the opportunity to increase revenue when subscriber usage patterns change.

As with the Vodafone example, premium subscribers will want to know that they are getting the best-possible data rates at all times. At the same time, regular consumers may be happy to accept that they will have more limited access to mobile broadband services at certain times of day or at certain locations or specific social sites on the web.

However, the charging model must fit the service or device. Operators would never be able to earn enough from connected electricity meters, for example, if the price was simply defined by data volume (a cost-plus model). The same is probably true for e-health applications or some surveillance solutions, in which traffic levels may be high, but only sporadically. The value of connectivity, on the other hand, is potentially huge. It could be considered similar to, for instance, the value that motivates us to pay an insurance fee.

COOPERATIVE MODELS

Application stores play an important part in filling the pipe in a way that also brings new value. Operators benefit either from being part of the transaction itself, in which they simply act as a broker, or by actually getting a large part of the revenue. This is the case with Android Market, for example. The 30 percent that is left when the developer has received their share is available to the operators.

Value-based business models can also include partnerships with media, content and other players, including over-the-top service providers. Operators can benefit from additional revenue and reduced churn, and the partner can expand its customer base very efficiently. Partnerships can expand the list of "values" beyond the traditional boundaries of a network to a wide range of areas,

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including music, video, safety, storage, entertainment, and gaming.

One good example of this is the tie-up between TeliaSonera and the music service Spotify. Although Spotify is available to anyone directly, TeliaSonera subscribers can pay for the service on their phone bill. This has been a successful way for the operator to attract new subscribers, retain existing ones and strengthen the brand. As a converged operator TeliaSonera has also realized the added value of offering a service on multiple platforms. Spotify also now works on TeliaSonera's set-top box with playlists synchronized across the platforms: set-top box, laptop and smartphone.

There is now a range of mobile broadband differentiation tools that make optimum use of available coverage and capacity, while strengthening the link between operators' commercial and marketing strategies and the technical capabilities needed to deliver them. These include both negotiation processes and enforcement policies and mechanisms, which are implemented by different parts of the core, transmission and radio networks.

These tools enable operators to move away from the reactive approach of simply limiting heavy users and take a more proactive, marketing-led approach to service differentiation, in which high usage is turned into a revenue opportunity rather than a problem.

By mixing and matching parameters, operators are able to define service packages and enforce them in the network to ensure real user experience meets expectations.

One example of where this might lead and how network tools play an important part is in cloud computing. The Indian company Novatium has developed a PC solution based on a Linux core – a web browser together with a standard Intel platform. The result is a sleek, cheap computer that runs in the cloud, meaning you can run your virtual computer anywhere and with any web browser.

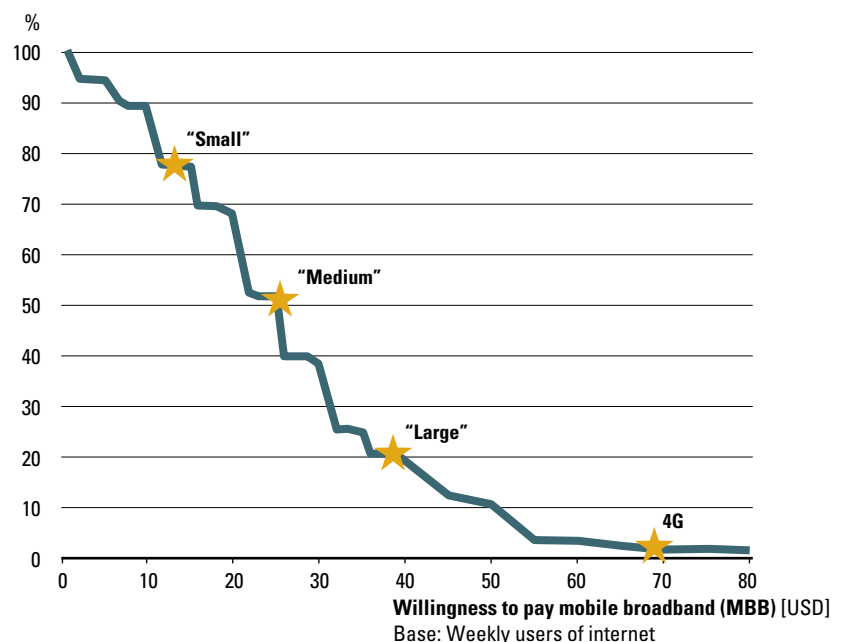
The operator enters this picture through the ability to package it all together – computer, modem, software and support – and offer it as a service for a monthly subscription fee. To differentiate further, the network

operator could detect and prioritize the OS traffic to secure a good quality end-user experience. Starting up the Vista, Linux or MacOS session (you can do any or all at the same time) will be smooth and quick. Starting up a document editor or a spreadsheet will likewise be treated as OS traffic. Whatever the operator decides to put in the package and define as prioritized traffic can be given premium treatment. Any regular traffic activities such as surfing, streaming and downloading, will be treated as best-effort data traffic.

Making sure end users are well informed and aware of opportunities to adapt their service packages to suit their changing needs will be key to success. It is also essential to manage expectations correctly so that they match the real-world user experience.

From an end-user perspective there is no relation between gigabytes and value. Using volume as a parameter for differentia- ▶

Figure 2. Targeting multiple segments



Source: Ericsson ConsumerLab, 2010. Based on one operator's broadband packaging using both bucket size and speed

The word “unlimited” is significant since it communicates to the end user that this *service will continue to work the entire month*, in contrast to a throttled service.

► tion still serves its purpose as long as the levels are kept reasonable.

FINDING THE SWEET SPOT

An Ericsson study by the business development team for Mobile Broadband clearly shows a significant difference in how the mobile broadband service is positioned when comparing various markets. In this study, we first grouped together the top 20 markets in terms of subscriber penetration, and the top 20 markets in terms of absolute number of subscribers. Then we mapped the offerings in each market with their respective specific or regionally applicable price elasticity curves. See figure 1.

The group with the highest market penetration has been able to hit the sweet spot nicely, while lower penetration markets are still in the non-elastic part of the curve. Some markets in this second group show strong growth and are closer to the sweet spot, but they are typically late starters and have yet to qualify to be on the other part of the chart.

Looking at a single operator from one of the top five markets we can see more clearly how its packages are positioned for different segments. See figure 2.

This operator uses two different methods related to segmentation and user “identification.” Speed is the key differentiating parameter, but for the low-end and mainstream packages, clearly communicated bucket sizes are also used.

The cheapest package offers a rather slow speed (around 2Mbps) together with only a 1GB limit and invokes throttling when the limit is exceeded. This low speed and small volume of this package clearly indicate that it is not for the normal user but rather for subscribers who are still uncertain or not willing to pay very much – yet. The main package targeting the broader population, however, offers quite a decent speed based on 7.2Mbps with a 5GB bucket, a size that more than 90 percent of subscribers in most markets would have a hard time filling up.

The premium 3G package offers the highest speed as well as what is called unlimited

usage. The word “unlimited” is significant since it communicates to the end user that this service will continue to work the entire month, in contrast to a throttled service. There is however a caveat in the form of a fair use clause in the contract terms allowing the operator to limit speed when necessary (typically using a priority function in the network).

Combining different speeds, volumes, as well as throttled and unlimited offers, this operator is able to address a very broad population. And judging from the positioning of each package on the curve, the operator is optimizing revenue nicely. Also, there are mechanisms in place to keep moving users up the curve.

In addition to these 3G-based packages there is also a 4G package based on LTE, clearly positioned so as to enhance the operator’s brand. At today’s price level, it will not generate a significant number of subscribers. But it is there and it is serving its purpose as an image-creating tool. ●

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