Point of View

The Fixed/Mobile Broadband Battle: Is It Time for "Smart Broadband"?

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April 2009

Cisco Internet Business Solutions Group (IBSG)

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Introduction

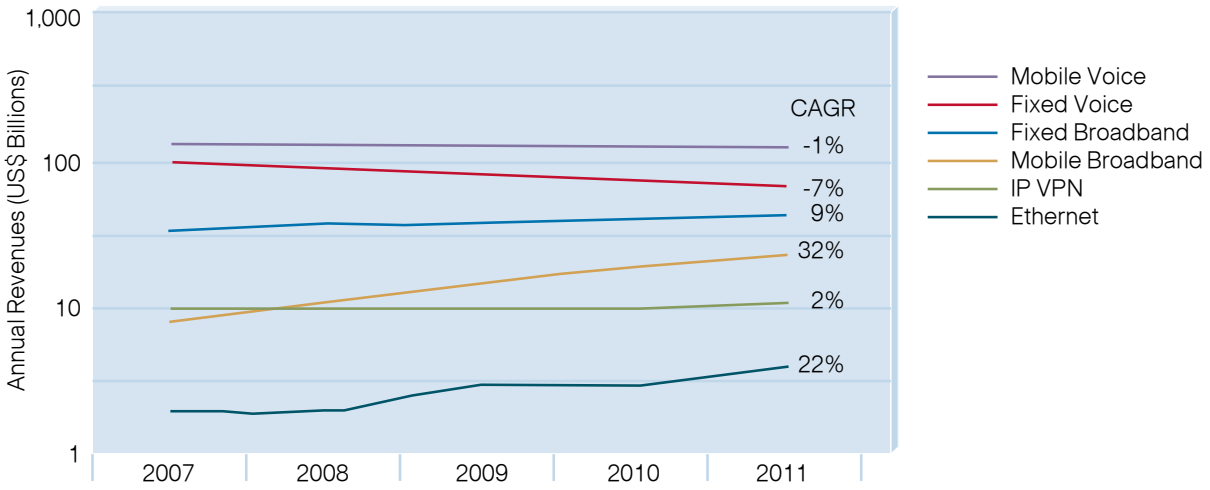
Fixed broadband, including digital subscriber line (DSL) and cable, has been a phenomenal growth story around the globe over the past five years. Today, however, it suffers from a number of challenges: massive growth of high-bandwidth video traffic, negative publicity in many areas, and ongoing price erosion—all of which are stressing operators' business models.

In contrast, the growth of mobile broadband has taken many people by surprise, with two major questions emerging: "Can it/will it overtake fixed broadband as the broadband connection mode of choice? What does this mean for broadband operators in terms of strategic options?"

This paper explores these questions and proposes that there may be a holistic outcome that offers consumers a more appealing, integrated broadband service, defined as "Smart Broadband." This new concept provides an integrated fixed, mobile, and Wi-Fi broadband offering, automatically delivering the best experience based on available connection, as well as the consumer's application use and cost profile.

This paper also explores the implications for different operators—integrated, mobile-only, and fixed-only—identifying strategic options for each in this exciting and dynamic new broadband world.

Figure 1. Western European Telecommunications Services Revenues, 2007–2011



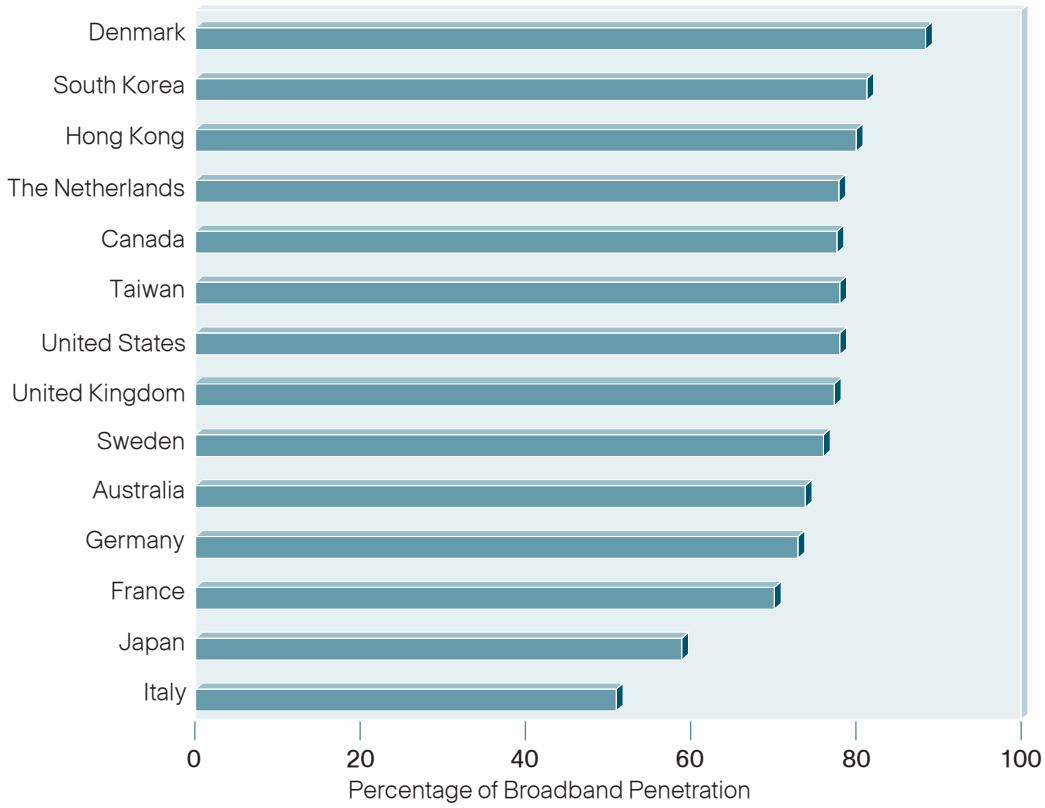
Source: IDC, 2007

Fixed Broadband Operators: Ongoing Pain from Margin Squeeze

By 2011, it is predicted that many telecommunications services will experience either flat or declining revenues. With 9 percent growth expected, fixed broadband remains one of the brightest spots (see Figure 1).

A number of forces, however, are stressing the fixed broadband business model. First, fixed broadband penetration is approaching a point of saturation (70 percent to 80 percent) in many markets, which will see revenue growth decline over time, as shown in Figure 2.

Figure 2. Fixed Broadband Penetration of Households in 2012



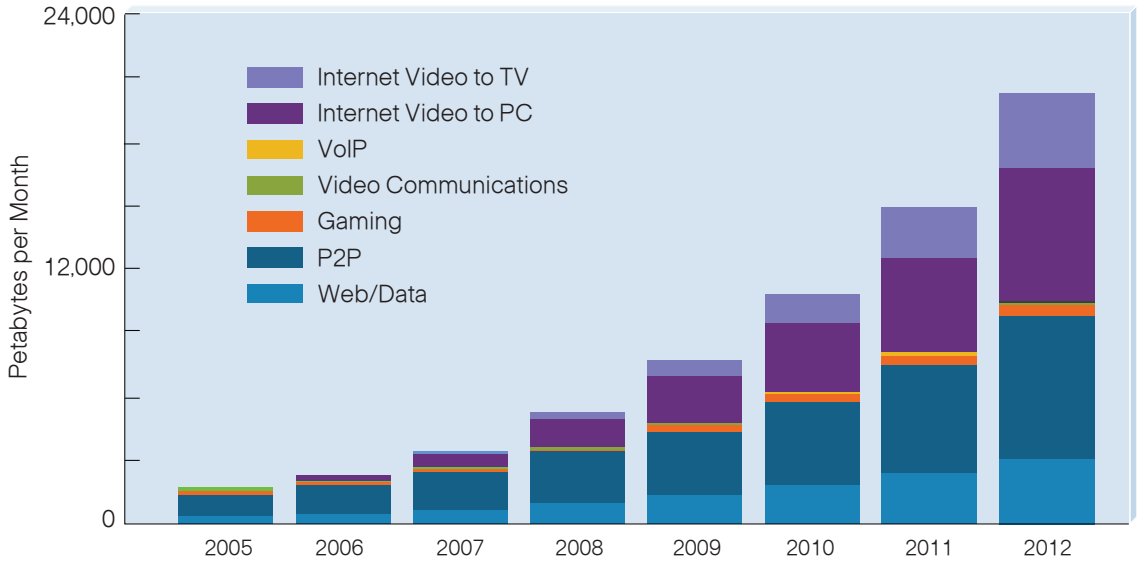
Source: Screen Digest, 2008

Second, fixed broadband operators are suffering from a margin squeeze, driven specifically by an increase in "revenueless" video traffic. The majority of this is UGC (user-generated content) from sites such as YouTube. Recent global traffic forecasts by Cisco (see Figure 3) show that in the future, "video to TV" will become a key traffic driver, with services such as BBC iPlayer making a successful transition from the PC to TV. (Virgin Media launched iPlayer on its TV platform and saw 11 million program

views in the first month.)[1] The root cause of the margin squeeze is that current business models do not allow this traffic to be monetized by fixed operators.

As traffic volumes increase, there will be added pressure to migrate to higher-speed broadband services. Cable operators are already migrating to 50 to 120 million bps services (Numericable, France—100 million bps;[2] Virgin Media, United Kingdom—50 million bps;[3] UPC Broadband, Europe-wide—120 million bps),[4] leaving DSL operators little choice but to contemplate next-generation access investments in FTTC (fiber to the curb) and FTTH (fiber to the home). These investments are not to be taken lightly, with studies by Merrill Lynch and Analysys Mason (among others) over the past three years identifying a likely cost range from $250 to $1,500-plus (per home passed) for FTTC and FTTH, respectively.[5, 6]

Figure 3. Global Consumer Internet Traffic Forecast



Source: Cisco Visual Networking Index, 2008

The third factor is price erosion, which has been accelerated with the introduction of new dual- and triple-play bundles advertising low-cost or even "free" broadband. France has been a leader in low-cost broadband with triple-play services offered by Free and Neuf Cegetel costing from €30 per month. Operators in the United Kingdom are offering broadband at £5 per month—or even for free, when taken with a bundle of telephony and/or TV services (such as BSkyB).[7]

1. http://www.guardian.co.uk/media/2008/nov/07/bbc-erikhuggers (accessed Dec. 19, 2008)
2. http://www.numericable.fr/offre/offre_internet_100-mega.php (accessed Dec. 19, 2008)
3. http://allyours.virginmedia.com/websales/50Mb/index.do?vmsrc=vmhpld (accessed Dec. 19, 2008)
4. http://www.upc.nl/internet/fiber_power_120/ (accessed Dec. 19, 2008)
5. "European Broadband Matrix Q3 05," Merrill Lynch, January 2006.
6. "Final Report for the Broadband Stakeholder Group: The Costs of Deploying Fibre-based Next-generation Broadband Infrastructure," Analysys Mason, September 2008.
7. Sky offers 2-Mbps broadband free with TV package (http://www.sky.com/portal/site/skycom/skyproducts/broadband); accessed Dec. 19, 2008.

As a result, fixed broadband is a tough market, with differentiation opportunities few and far between.

Mobile Broadband Applies Additional Pressure

In addition to these challenges, mobile operators are now attacking fixed operators on three fronts:

- They are launching fixed broadband (DSL) services. O2, Vodafone, and Orange have acquired, built, or partnered to obtain DSL capabilities in many countries. These services match other DSL offerings in these countries in both speed and price. They are looking to win share through aggressively priced bundles. For example, O2 in the United Kingdom is offering a DSL/mobile broadband bundle from £20 per month.[8]
- Mobile broadband operators have deployed 3G broadband on a wide scale, initially to mobile handsets, and more recently to USB dongle-equipped laptops/PCs. These services have been aggressively marketed and priced:[9]
  - 2 to 7 Mbps downstream, at €15 to €40 per month
  - Ranging from fixed download quota to "unlimited" download with a fair-use policy
  - Users just plug in a USB dongle and are online in minutes
- Further pressuring fixed operators, mobile operators are now aggressively marketing laptop-based mobility and incorporating 3G broadband with Wi-Fi hotspot access (and in the future, WiMAX). A number of operators are providing mobile broadband with a "free" or subsidized laptop/netbook (such as SFR[10] and Orange[11] in France and 3[12] and Vodafone[13] in the United Kingdom). Some mobile phone retailers are now expanding their business model to include laptops and laptop mobility solutions (such as Carphone Warehouse,[14] a pan-European retailer).

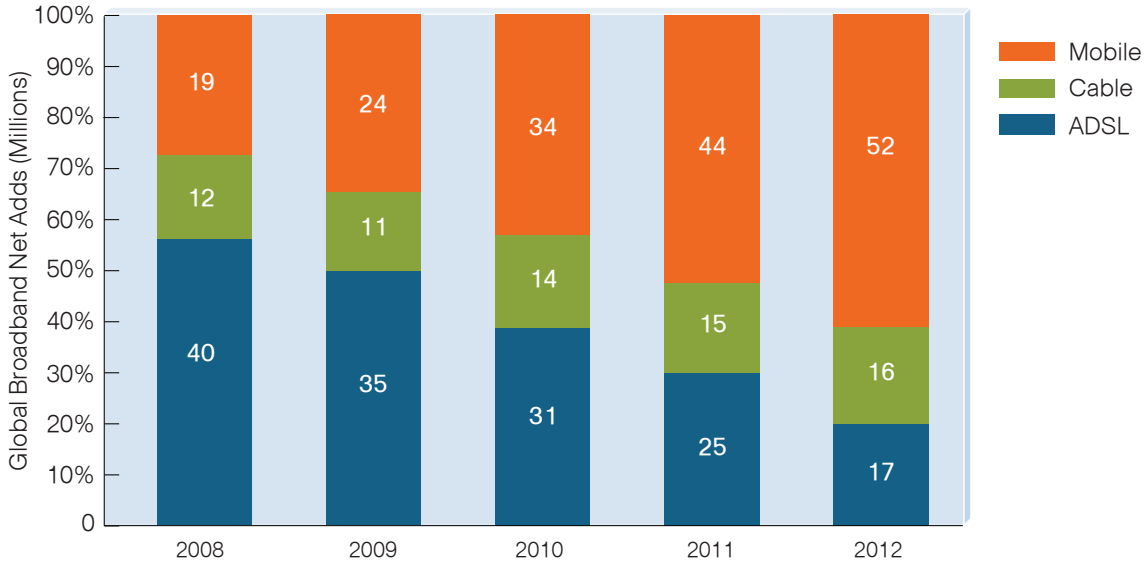
As a result, mobile broadband is a now a hot topic, receiving a great deal of positive coverage in the mainstream press.

Mobile broadband subscriber growth is forecast to double or triple that of fixed broadband over the next few years. In-Stat predicted that in 2012, approximately one-third of all global broadband connections will be mobile (242 million), accelerating away from cable (141 million) and catching up to ADSL (372 million).[15]

Even more dramatic is the mobile broadband share of all broadband net adds, as illustrated in Figure 4.

8. Buy O2 Mobile Broadband for £15 a month and save £2.45 a month on O2 home broadband, http://broadband.o2.co.uk/discount/discounthomebroadbands.jsp (accessed Dec. 19, 2008)
9. "The Power of Mobile Broadband: Implications for European Telcos and Equipment Vendors," J.P. Morgan, 2008.
10. SFR subsidized netbook offer, http://www.sfr.fr/mobile/internet-3g-plus-portable.jspe?sfrintid=HPI_BOL (accessed Dec. 19, 2008)
11. Orange subsidized netbook offer, http://abonnez-vous.orange.fr/residentiel/mobilite/Cle3G.aspx?idnode=147 (accessed Dec. 19, 2008)
12. 3 subsidized laptop offer, http://www.three.co.uk/Mobile_Broadband/Laptop_Packages (accessed Dec. 19, 2008)
13. Vodafone subsidized netbook offer, http://www.vodafonebusinessshop.co.uk/LaptopsWelcome.html (accessed Dec. 19, 2008)
14. Carphone Warehouse mobile broadband & laptop offers, http://www.carphonewarehouse.com/commerce/servlet/gben-server-PageServer?article=MAIN.UK.INTERNET.TRADEWIRELESS.IMAGES1.LAPTOPS (accessed Dec. 19, 2008)
15. "Worldwide Broadband Subscriber Forecast," In-Stat, September 2008.

Figure 4. Global Broadband Net Adds by Access Type



Source: In-Stat, August 2008

The most aggressive mobile broadband growth (and, hence, fixed broadband substitution) has taken place in Austria, as described in the following case study.

Case Study: Austrian Broadband Market

Austria has seen a huge uptake in mobile broadband since the end of 2006. According to analysis by Arthur D. Little,[16] this has been driven by a combination of services targeted at high-volume users (10 to 15 GB per month for about €25), as well as by three out of the four operators offering a prepaid service.

This has resulted in almost all broadband net adds in Austria being mobile (as of Q2 2007), with Mobilkom reporting that in early 2008, mobile broadband accounted for 28 percent of all broadband connections.[17] This is many years ahead of the In-Stat forecast for mobile broadband global market share.

The overall data and the Austrian example illustrate that the substitution effect will be different in each country. The extent to which fixed operators in a given country could lose will depend on three key factors:

- Presence of an aggressive, mobile-only player
- Absence of bundled, fixed-line video services (IPTV or CATV)
- Relative price level of fixed broadband

16. "Telecom Operators: In the Eye of the Media Telecom Storm," Arthur D. Little,, Exane BNP Paribas, February 2008.
17. "Mobile Broadband Connecting the Mass Market," Mobilkom, May 2008.

Using these criteria, France would score low (no aggressive mobile player, importance of IPTV, low fixed broadband price), whereas the United Kingdom would score higher (aggressive mobile-only operators, IPTV unimportant, broadband price is medium). Austria clearly scores the highest (aggressive mobile players, IPTV of medium importance, and high broadband price).

How Can Operators Thrive as Mobile Broadband Replaces Fixed Broadband?

Given all these factors, there is a key question around the potential substitution effect of mobile broadband on fixed broadband: What does this mean for fixed and mobile broadband operators in terms of strategic options?

A New Approach: "Smart Broadband"

When considering the impact of substitution, it is important to note that not all broadband users have the same requirements. There are key differences among various demographic segments based on the following requirements:

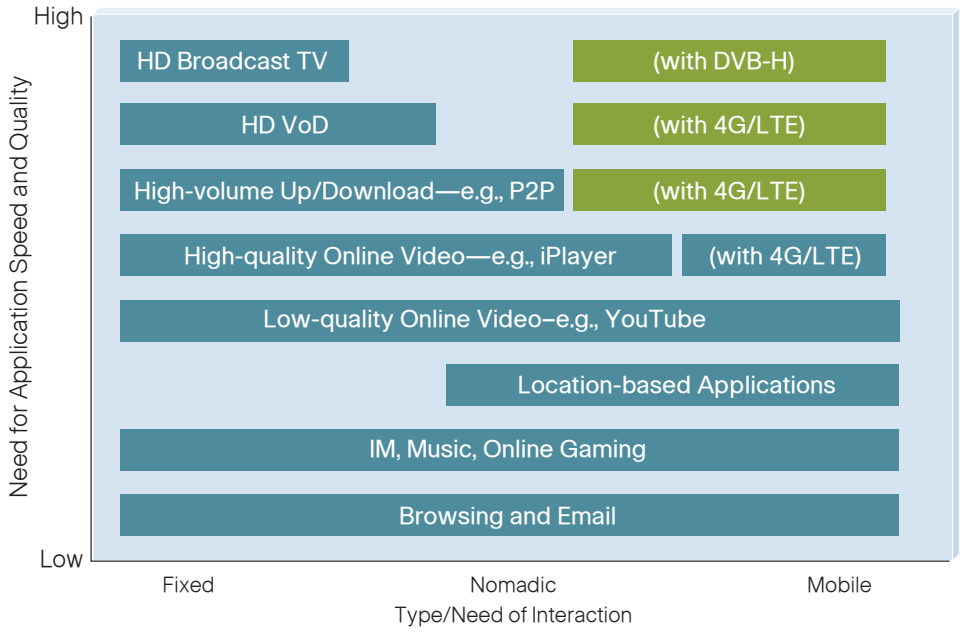
- **Applications:** Some applications just won't work today using mobile broadband—IPTV, video on demand (VoD), P2P file transfer.
- **Mobility:** Not all users want or need a mobility solution.
- **Price:** 3G roaming charges can be high, and heavy users may have to pay excess charges for mobile broadband.

In addition, there are some issues with Wi-Fi and 3G/HSPA (high-speed packet access) from a technology and ease-of-use perspective:

- Location independence and ease of use are key factors in favor of mobile broadband, unlike Wi-Fi hotspots, which can be challenging. There can be coverage issues, however, with 3G/HSPA.
- Wi-Fi access is currently offered by both fixed and mobile operators, but it has challenges around price, security, setup, and its availability from many providers.
- Until 4G/LTE (long-term evolution) is available, actual download/upload speeds will not match the higher speeds available on fixed broadband from FTTX and DOCSIS 3.0-based services.

To maximize broadband connectivity, providers will ideally need coverage provided by a combination of fixed, mobile, and Wi-Fi. People spend varying amounts of time in different locations using broadband access. A recent study by O2 around a mobile TV trial showed mobile broadband being used in the following locations: home (35 percent); office (23 percent); bus/train (21 percent).[18] Different combinations of fixed, Wi-Fi, and mobile broadband can serve these disparate locations:

Figure 5. Applications Supported by Type/Need of Interaction



Source: Cisco IBSG, 2009

- Fixed works best at home and in the office.
- Wi-Fi is best at home, and in airports, hotels, and the office.
- Mobile can work in any location, subject to 3G coverage.

We believe, while there could be a high degree of substitution (of fixed broadband by mobile broadband) among certain niche user segments, the majority of users will actually benefit from a simple, yet effective, hybrid solution—something that enables them to connect in the most appropriate way, based on where they are, the connectivity options available to them, the devices and applications they are using, and their budget/cost preferences—but with complexity hidden from the user.

We call this "Smart Broadband." At a high level, it means that an operator provides an integrated broadband service comprising a combination of fixed (at home), mobile (e.g., using a dongle), and Wi-Fi (at home and work, and for hotspot roaming). The "smart" part is based on a number of elements that work to provide a simple and easy-to-use connectivity experience:

- The device (TV, mobile, laptop, etc.) continuously monitors the connectivity options.
- It selects the best option based on user-defined preferences for speed and cost as

18. Results from a 2006 O2 Mobile TV trial in the United Kingdom.

well as applications being used. It does this based on its own capabilities, which the SP should be able to detect—TV, mobile, laptop, etc.

- It changes modes to best meet these preferences, and does so with a minimum of user intervention (cumbersome Wi-Fi hotspot logon is a thing of the past).
- It keeps users informed of connectivity modes, especially when preferred options aren't available, and gives them an option to override.

Integrated Operators Will Be First to Deploy Smart Broadband

Before looking at strategic implications for different types of operators, we should provide some perspective on how and when this market shift might occur.

What Will It Take for This to Happen?

To some extent, the market shift has already started in a number of countries. Players like O2 and BT in the United Kingdom are providing integrated fixed/mobile broadband offers. Orange has introduced an integrated mobile/Wi-Fi offering.

Case Study: Orange Business Everywhere

Orange in the United Kingdom offers a mobile broadband service that works across HSPA, 3G, EDGE (enhanced data rates for GSM evolution), GPRS (general packet radio service), and Wi-Fi connections. A piece of software on the laptop manages all the connections, automatically choosing the fastest available. It also provides information on usage. A variety of contracts is available, providing different mixes of connection capabilities and download quotas.

What Is the Opportunity for Successful Companies?

A shift to hybrid offerings will result in strong broadband market share, especially mobile. It will drive average revenue per user (and, hence, revenues), but will be sustainable only through continued innovation to deliver value to the various customer segments.

Who Will Do It?

Mobile operators—especially those with an integrated infrastructure, such as O2, Orange, and Vodafone—are leading this shift as they seek to gain share of the fixed broadband market.

What Are the Trigger Points?

These are already visible; the key is the launch of fixed broadband by a mobile operator in a particular market. Another trigger point is when mobile broadband net adds meet or exceed fixed net adds.

What Might the Evolution Path Look Like?

The service roadmap will be governed to a large extent by both types of operator capabilities, as well as by consumer reaction and uptake. As with all new ideas, the market

needs both education and stimulation to create demand. The likely stages of Smart Broadband development may well follow this path:

- **Marketing a price-based bundle** of fixed, mobile, and Wi-Fi (although not an integrated service). This is happening now with O2 in the United Kingdom (fixed plus mobile).
- **Phase 1 of integrated Smart Broadband service**, based around 3G dongles and embedded Wi-Fi, a fixed broadband connection at home, plus software to automate the selection process. This will be operator-driven, in partnership with laptop and dongle providers, and will happen over the next 18 months. As seen, Orange and others already provide this capability for mobile plus Wi-Fi.
- **Phase 2 of integrated Smart Broadband service**, based around embedded Wi-Fi and 3G modems in laptops, with Smart Broadband decision capabilities embedded in firmware. This will be driven more by laptop providers, in partnership with operators. Expect to see this capability in high-end laptops in 18 months to two years. The fixed broadband connection in the home will also be augmented with femtocells, and connectivity will be fully integrated in the solution.

So, what does this mean for the various broadband operators? That depends on who you are, and your starting point.

Integrated Operator

The integrated operator should aim to reach the market quickly, and to innovate rapidly around Smart Broadband with a focus on simplicity and customer experience. The emphasis should be on retaining existing fixed and mobile broadband customers and upselling Smart Broadband to both. An aggressive launch with femtocell-based home service may also help drive market share around a fixed/mobile proposition, although there is a risk of cannibalization of existing mobile revenues.

Mobile-only Operator

Mobile operators should grab late broadband adopters (via a simple "buy it and plug it in" message) as well as push for mobile broadband inside all devices ("Why bother wiring your home when everything is already directly connected to the 3G network?"). They should also target existing fixed broadband users through a combination of ease-of-use and branding.

Fixed-only Operator

Fixed operators should make fixed broadband indispensable by offering video-to-TV services and home hub-like services (personal video recorder, home security, and monitoring) so that users invest in a set of Wi-Fi-connected devices dependent upon an ADSL/cable connection. Providers should work hard to create easy, nomadic Wi-Fi access for their subscribers. Their message should be "You have Wi-Fi 'free' with your home broadband, so why bother with anything else?"

Conclusions

Mobile broadband is here to stay, and poised to make inroads into fixed broadband connections and market share (exactly how much varies by country, depending on a range of factors). The poster child for fixed broadband substitution is Austria, offering perhaps the ultimate doomsday scenario for fixed broadband operators.

With fixed operators looking for an answer to this threat, integrated operators are in perhaps the best position to capitalize on this situation, especially if they deploy a Smart Broadband service.

Smart Broadband takes advantage of different broadband connection modes to deliver a more valuable and compelling broadband service to users—connecting automatically to the most appropriate available broadband mode, wherever you happen to be. Initial services are appearing on the market, such as those offered by Orange in the United Kingdom, but these are still in their infancy.

The key to success for operators of all kinds is to develop an appropriate strategy to deal with this new situation. We propose that operators focus on three main steps for strategy formation:

- Consider their relative capabilities, depending on whether they are a fixed-only, mobile-only, or integrated operator, and compare those against their competitors and their likely strategic moves.
- Assess the likely level of substitution in the market by identifying the extent to which the three substitution factors (highlighted on page 6 of this paper) are in play in the country/countries in which they operate.
- Determine operators' options around deployment of Smart Broadband in terms of what to do, and how to do it: Do they deploy a service or do they need to make a defensive move? If they deploy a service, what is required to create competitive advantage? Can they deploy on their own, or do they need to acquire or partner with another company?

Broadband offerings are undergoing an evolution, with significant opportunities for operators able to provide the most compelling proposition. Smart Broadband has the potential to be that solution. Operators that embrace it can deliver greater value to their customers, as well as further distance themselves from their competitors.

For more information on Smart Broadband and hybrid fixed/mobile broadband delivery models, please contact:

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