



# Homeward bound

Telcos are turning to the digital home to increase ARPUS

Edward Munch's famous painting — The Scream — is not something you might automatically associate with fixed-line incumbents. Not until you consider, perhaps, the pressures they are under: fierce competition, bandwidth commoditisation and voice revenue erosion. "The telcos' worst nightmare is to become a bit-pipe provider," says Michael Philpott, principal analyst for broadband technologies at research firm, Ovum.

But all is not lost if telcos can launch new services to offset declines in traditional revenue. And, through their 'last mile' assets, they have the opportunity to do just that. "You can only address the issue of ARPU [average revenue per user] if you have a line to the home," says Stefan Tweraser, head of marketing at Telekom Austria. And it is these new services, primarily entertainment-based, that are driving the digital networked home.

Home networking until now has simply involved linking PCs. "This is 'pre-natal'," says Bob Larribeau, senior analyst at market research firm, MRG. What interests telcos, he explains, is the networking of all the home's electronic devices, which, in turn, are linked to the residential gateway — the main communication hub interfacing the home with the broadband network.

These networked devices include consumer electronics — TVs, set-top boxes, digital video recorders, Hi-Fi and the like — and PCs, whether a home PC or entertainment-centric PCs that run Microsoft's Media Center Windows operating system. Ultimately, a range of hardware will be networked, for home security and home automation.

## Homing strategies

For BT, entering the home is a consequence of its decision three years ago to become a broadband company. The services rollout is part of a "massive

extension of our broadband strategy", says Andrew Burke, CEO of BT Entertainment, part of BT Retail. Services include communications (such as VoIP), video telephony, instant messaging, e-mails, entertainment (such as music downloads), IP TV, and security monitoring for the home. "The criticality of each [service] is the network in the home," says Burke.

Incumbents such as BT, France Télécom and Belgacom are also backing fixed-mobile convergence. This allows mobile handset calls in the home to go through the fixed-line connection. It also enables media files and news alerts to be sent to the mobile via the residential gateway. "This is another way for carriers to retain fixed-line broadband customers," says Alice Enders, coordinator at media and telecom research company, Enders Analysis. (However, in the case of France Télécom and Belgacom, this would appear to threaten the high margins of their mobile business arms.)

One example of a sophisticated residential gateway is the platform that is part of SBC's HomeZone service. The gateway, supplied by 2Wire, includes a satellite video receiver and digital video recorder (DVR) integrated with the DSL modem and router. It will enable the RBOC to offer satellite TV combined with broadband data services later this year. The DSL can trickle video-on-demand services onto the DVR's hard disk for later viewing. The gateway also provides caller ID functions and stores and distributes personal media such as MP3 files and home video clips.

"We are a phone and entertainment company," says Larry Meyer, an SBC spokesperson. SBC plans to deliver quadruple-play services to the user via its cellular arm.

The potential of such services was demonstrated in May after France Télécom bought the rights to the French Open

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tennis tournament. The carrier offered live coverage of all seven main courts through its IP TV service, as well the ability to view matches on demand. Orange, its mobile arm, delivered Open coverage to handsets using video, SMS and audio commentary, while the carrier's ISP, Wanadoo, provided video match coverage via its portal.

**Home improvements required**

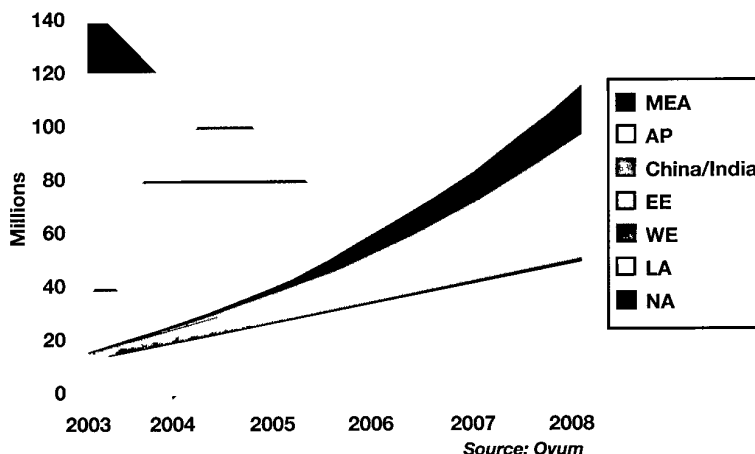
But if IP TV is a significant driver for home networking, it is already challenging the carriers. "France Télécom is having problems," says Ovum's Philpott. "First, an engineer must be sent to each home to wire the set-top box to the network, which takes time and is costly. All the carriers are interested in self-installation kits but the technology is not mature."

The second challenge is customer care once service problems arise. IP TV, data and voice services all share the same network. "Once a service goes down, customers pick up the phone to France Télécom," adds Philpott. "A 15-minute call is 15 a pop, or one month's revenue down the drain."

"Carriers can't rely on the end-user [for home networking], they have to manage proactively," says Sanjay Castelino, vice president of industry marketing, at management software company, Motive. "[Entering the home] the scale of carriers' network operations goes from managing thousands of devices to managing millions."

To enable and monitor the home environment from the comfort of their call centres, carriers are looking to the DSL Forum's TR-069, a management interface standard between their network and customer premises equipment. Using TR-069, software running on the carrier's server communicates with the gateway, and any compliant device connected to it. Carriers can then upgrade the gateway, to enable new services and troubleshoot.

Motive has software that sits on gateway-connected devices. "The PC is complicated enough to merit its own software client," says Castelino. Other devices, such as a



Note: Ovum defines a home network as comprising digital broadcast terminations to other entertainment devices in the home using standardised network technology (such as wireless, ethernet and HomePlug). It does not include Bluetooth, which Ovum views as unsuitable for whole home solutions

► Fig. 1 The number of home networks by region

VoIP analogue terminal adapter, do not. The resulting visibility means the carrier can tackle problems as they arise. Equally, the technology can also be used to simplify home networking for the consumer. "Home networking has to be as simple as what it replaces: the TV and phone," continues Castelino. "IP TV and VoIP are far too complicated for most customers."

Residential gateway manufacturer Westell is an early adopter of TR-069. Its residential gateway for Verizon is TR-069-compliant. The Verizon One gateway includes a touch screen, a DECT cordless phone that can support VoIP calls, and a wireless DSL router. "Customers can use the touch screen to select what [services] they want and [using TR-069] the gateway can be configured remotely," says Vaughn Armstrong, director of marketing at Westell. "Every service provider in Europe is asking about TR-069," says Armstrong.

But analysts remain cautious. "The TR-069 standard is important but it has yet to be proven," says Nicole Klein, an analyst at Yankee Group. And it can only do so much: "TR-069 is only at the box level, not at the application level," adds Philpott.

**Home expansion**

For telcos to target the home market successfully, they will be hoping to exploit their scale — a large customer base — to bring down costs. This will include working with content providers. "A collaborative alliance with entertainment providers is the only way this will work," says Larribeau. "What the telcos offer is a critical-mass of users that are always connected."

Indeed Microsoft claims a role here. The software giant is working with 11 carriers, including BT, SBC and Verizon, which have chosen its IP TV delivery platform. "We have acted as a matchmaker to bring the two groups together," says Ed Graczyk, director of marketing and communications for Microsoft TV.

Intel is another such facilitator. It is a hardware provider to consumer electronics manufacturers and developers of Media Center-complaint PCs. It also works with carriers on their home networking strategies as well as making strategic investments in digital home start-ups through its Intel Capital arm. "We've made investments in middleware start-ups



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to spur development of connectivity software," says Bill Leszinske, Intel's director of digital home marketing and planning desktop platforms group.

But if carriers have the scale to develop residential gateway products that provide them with a key differentiator, analysts question the cost. "The residential gateway is a very expensive product to develop. Will customers find it appealing enough?" says Enders.

Telekom Austria is one carrier adopting a gateway based on a DSL modem and router only. "It is the business case [of a complex hub] that we question: does it make the service any more convincing?" says Tweraser. Alternative gateway approaches includes that of D-Link. "Our approach is to have lots of building blocks that plug together," says D-Link's Lee Tanner, U.K. and Ireland telco ISP manager.

Motive's Castelino believes carriers will promote many gateway manufacturers and adopt several styles of platform: "They will not want to tie their service innovation to one manufacturer."

"Carriers need to keep exciting consumers with new applications that the residential gateway can support," says Enders. This is what the carriers plan, and is the crux of the home networking opportunity. "Half the families in Belgium do not have a home PC," says Van Kets. Services to the home gateway that are not PC-based will allow Belgacom to double the homes it can target.

Belgacom has bought the rights to broadcast all 306 of this season's main division football matches, and plans automated home bill metering and home automation services.

Telekom Austria, meanwhile, is planning services that include the remote delivery of medical care. Equally, BT's Burke highlights SMS alerts for parents as a child arrives home from school, or when an elderly relative fails to use their kettle by 11AM. BT is also planning paid-for technical support for home networking.

The mobile handset is also being scripted a growing role in the networked home.

## Raising standards in the digital networked home

Carriers are benefiting from the work of industry bodies, such as the DSL Forum and the Digital Living Network Alliance (DLNA), which are using open standards to promote interoperability between PCs, consumer electronic and mobile devices.

"The value that DLNA brings to service provider is that they can have confidence that the interoperability model and the certification of conformance to that model is taken care of," says Scott Smyers, chairman of the DLNA. Carriers can thus avoid the arduous task of product approval, speeding up deployments of new hot products.

But despite the contribution of the DLNA and the DSL Forum, telcos perceive a gap in standards for the digital home. As a result, several carriers — including BT and Belgacom — and equipment and chip manufacturers have formed the Home Gateway Initiative (HGI). The HGI has already selected TR-069 as the management standard, reports Dimitri Van Kets, business development manager at Belgacom

Rudy Lauwereins, vice president of IMEC, Belgium's interuniversity microelectronic centre, heads a unit that tackles handsets' requirements till 2012. "The mobile will start to borrow from the functionality of home equipment around it," says Lauwereins. A mobile will show who is at the door when a visitor rings, and redirect video images and broadcasts from its screen to a larger TV display if one is within range.

For now, though, it is IP TV services that are driving home networking. And with European carriers leading in IP TV, they also are ahead in the networked home. "IP TV activities have been going on in Europe for several years and have built up momentum. Asia has been moving more in fits and starts, while the regional Bells in the US are just now introducing services," says Larribeau.

Carriers must also form relationships to secure content and expand alliances with home networking specialists beyond traditional DSL modem makers. For example, carriers are working closely with consumer electronic manufacturers and software developers. A DVD stream from a games console or a Media Center PC may share the same network as programming delivered by the carrier. "If it doesn't work, users won't call Microsoft but the carrier," says Sanjay Castelino, vice president of industry marketing at management software company, Motive. This requires carriers to work with, and embrace, what the likes of Microsoft and Sony are doing.

"This is why we chose Microsoft TV, with the range of products that runs its software," says Andrew Burke, CEO of BT Entertainment. "This will ensure that content can travel across a ubiquity of products." But as Michael Philpott, an Ovum analyst, remarks, this is a case of "there is no industrial standard so we'll go with the biggest".

Analysts are less certain as to who will win in the emerging digital networked home market but the general view is that incumbents are in the best position compared to cable MSOs and competitive carriers.

But Ovum's Philpott expresses caution. "Having a lot of the cards in their hands can sometimes bring an arrogance. Telcos are in a good position but they shouldn't forget the technology cable MSOs have in the labs." ◀

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