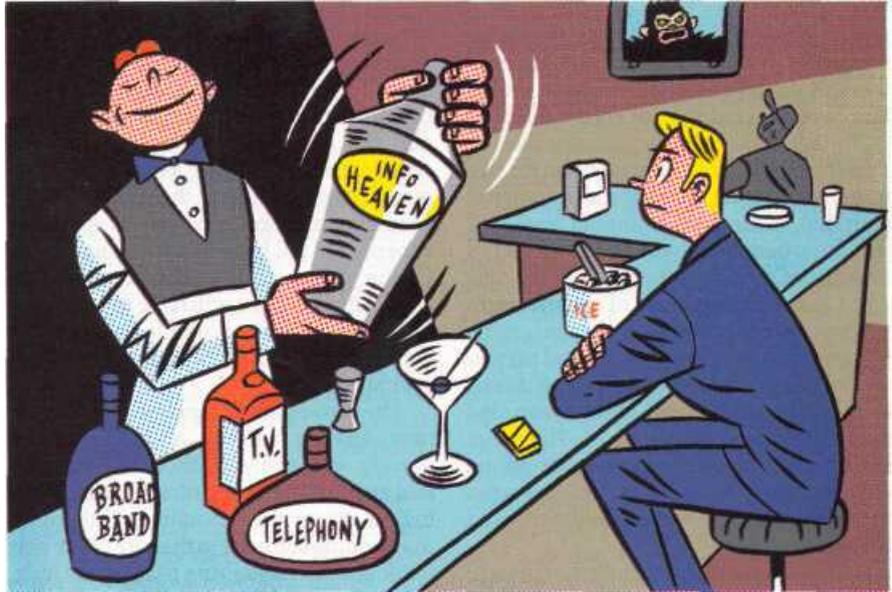


# Your television is ringing

Also in this section



"Convergence" is the telecoms industry's new mantra. Whether customers really want it is another matter, says Tom Standage

**W**HAT has come over the telecoms industry? The spectacular crash of 2001, with its associated bankruptcies, fraud and the destruction of around \$1 trillion of investors' money, has evidently been forgotten. The gloom has given way to a fresh sense of opportunity and a renewed frenzy of dealmaking. The past couple of years have seen a series of huge takeovers and mergers among network operators and makers of telecoms equipment around the world.

In America SBC paid \$16 billion for AT&T, took its name, and then swallowed BellSouth for a further \$67 billion. Its rival Verizon, meanwhile, bought MCI for \$8.4 billion. In Europe Telefonica, Spain's national incumbent operator, bought O<sub>2</sub>, a wireless firm with networks in several European countries, for £17.7 billion (\$31.3 billion). NTL, Britain's cable operator, bought Virgin Mobile, a mobile operator, for £962m. Vodafone, the world's biggest mobile operator by revenue, signalled a retreat from its global ambitions and sold its Japanese arm to Softbank, a local wireline broadband operator, for \$15.4 billion.

In addition to these and many other deals, operators around the world began building "next-generation networks" at vast expense. Verizon is spending over \$18 billion on its new network, and Britain's BT is spending £10 billion. These networks allow telecoms operators to offer television service in addition to voice calls and broadband internet access.

Meanwhile, large internet companies including Google, Yahoo! and Microsoft's MSN marched into the telecoms business by launching new services offering free calls over the internet. Skype, the leader in this market, was acquired by eBay for \$2.6 billion. And equipment-makers began teaming up too: Cisco, the world's largest network-equipment firm, bought Scientific-Atlanta, which makes television set-top boxes, for \$6.9 billion; Alcatel and Lucent agreed to merge in an \$11 billion deal; and Nokia and Siemens combined their network-equipment divisions.

At first sight these deals might not appear to have much to do with each other. But all of these transactions were prompted by a single underlying trend that has become the industry's new mantra: convergence.

## All together now

What this means, roughly, is the coming together of previously separate communications and entertainment services: fixed and mobile telephony, broadband internet access and television. But more often the word is used in a quasi-mystical way to evoke information heaven. "Convergence really means the freedom for consumers to use any service under any circumstances they choose to," says Ben Verwaayen, the boss of BT. "It is a question of convenience, enriching people's lives, because we can provide communications, information and entertainment the way >>>

> they want it," says Mark Wegleitner, chief technologist at Verizon. "We want to bring simplicity to our customers, the first step towards digital paradise!" exclaims Didier Lombard, the chairman of France Telecom.

In fact, although the industry likes to depict convergence as a great boon for customers, it actually involves a technological shift that, in the first instance at least, will primarily benefit network operators. At its heart, convergence is the result of the telecoms industry's embrace of internet technology, which provides a cheaper, more efficient way to move data around on networks. On the internet everything travels in the form of "packets" of data, encoded using internet protocol, or IP. The same system can also be used to encode phone conversations, text and photo messages, video calls and television channels—and indeed anything else.

It is only relatively recently that IP technology has matured to the point that it can carry these other services reliably and efficiently, says Basil Alwan, the president of IP activities at Alcatel. But now that it has happened, operators can replace a jumble of different networks for services such as voice, data and video—each with its own order-entry, billing and fault-reporting systems—with a single network on which everything travels as interleaved streams of IP packets. "The ultimate goal is to have one IP infrastructure, and services running on that infrastructure," says Mr Alwan.

This convergence affects not only wireline networks, but wireless ones too. Today, operators run separate but interconnected networks for fixed and mobile phones. But the new converged networks are "access agnostic". In short, a single core network may have a variety of devices connected to its edges via different technologies. Traditional fixed-line phones might be connected via wires; mobile phones via base-stations; and televisions or computers via broadband telephone lines or Wi-Fi links.

Access agnosticism should enable a mobile phone, say, to connect to the core network via Wi-Fi in the home and then switch seamlessly to a traditional cellular connection outdoors. The core network remains untouched as new access technologies (such as fibre-optic links or new kinds of high-speed wireless data technology) are added to its edges. In an industry that loves obscure acronyms, the framework for linking everything up in this way is known as IMS, TISpan or NGN.

"IP in a converged world enables one network, many services, any access," says

Robert Lloyd of Cisco. A converged, all-IP network of this kind has two immediate technical advantages for network operators, he says. The first is that it costs less to run, thanks to its far simpler architecture and the economies of scale associated with internet standards. BT, a firm widely regarded as a pioneer in the switch to next-generation networks, expects its operating expenses to fall by 30% once its new "21st Century Network" (21CN) is completed in 2009. "By 2010 you will have to look very hard to find a fixed or mobile operator that is not running its traffic over an IP core," says Mr Lloyd.

The second advantage is that in theory, new services can be added far more quickly and easily, without the need to add any new network infrastructure. Adding a new service amounts to little more than adding software to the core of the network and perhaps some new access technologies around the edges.

### The rise of the quadruple play

Because of the convergence on IP networks, companies that used to be in separate industries—telephone operators, internet-service providers and cable-TV firms—suddenly find themselves in the same business. Cable companies now offer broadband internet and voice services over networks that used to carry just television, and telecoms firms have upgraded their networks to carry television signals. In the new converged world any firm that can deliver an IP stream to customers over its network can offer any or all of these services. And offering several of them together, many operators believe, is a winning strategy.

Hence the current scramble to offer the "quadruple play"—the name given to the combination of fixed and mobile telephony, broadband internet access and

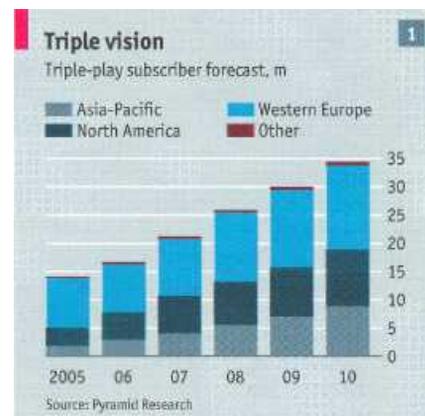
multichannel television. This explains many of the deals that have taken place in recent months. AT&T, which is already rolling out a fast new network to carry TV signals, bought BellSouth in order to win full control of Cingular, its wireless joint venture, and complete the quadruple-play package. Softbank, which already offers television, voice calling and internet access over fixed broadband links under the Yahoo! BB brand, bought Vodafone Japan to add mobile to the mix. Similarly, NTL bought Virgin Mobile, and America's big cable operators last year struck a deal with Sprint Nextel, a wireless operator.

The desire to offer a one-stop shop for quadruple-play services has also prompted several national incumbent operators to reabsorb their previously separate wireless operations. And it has hastened consolidation among telecoms-equipment vendors, such as the Alcatel-Lucent and Nokia-Siemens deals. Large operators have concluded that buying as much as possible from a single equipment-maker increases their bargaining power and avoids problems with integrating equipment from different suppliers.

Operators claim that selling all four services together as a bundle makes life easier and more convenient for customers. "Customers in our experience really want that," says Ed Whitacre, the swashbuckling Texan boss of AT&T and one of the most vocal proponents of the merits of bundling, "and we can give them a better price." The average American household spends \$176 a month on telephone, broadband and television services, according to figures from Parks Associates, a consultancy. Mr Whitacre's stated aim is to reduce costs by building a converged network, and to offer the quadruple play for as little as \$100 a month.

There is indeed evidence that customers like the discounts associated with bundles and the convenience of a single bill. "Customers are much more open to purchasing via the bundle," says Mikal Harn, vice-president of consumer marketing at AT&T. For the incumbent telecoms operators, however, the quadruple play is all about protecting their core business of fixed-line voice calls, which still accounts for the bulk of their revenues.

Their problem is that fixed-line subscribers are being lured away by cable operators and voice-over-internet firms, or are getting rid of their fixed lines in favour of mobile phones. During 2005, for example, the number of fixed telephone lines operated by Verizon, America's second-



largest telecoms firm, declined by 8%. Its losses were greatest in the New York metropolitan area, where it faces the most competition from cable operators offering voice services, says Stephan Beckert of TeleGeography, a market-research firm.

As cable operators offer customers the "triple play" of voice, broadband and television, telecoms operators have concluded that their best defence is to respond in kind and also to throw in wireless, which many cable operators are not yet able to offer. Customers who sign up for a bundle of services and its associated discount cannot defect to a rival provider of any one of the services without losing the discount. "We make the product more sticky—customers don't seem to leave," says Mr Whittacre. Similarly, cable operators are using bundles to protect their core business, which is not voice but television, as it, too, comes under attack from satellite-TV providers and now telecoms operators.

Another benefit of bundling everything together is that it reduces advertising, customer-acquisition and other marketing

costs, because all the services can be advertised together under a single brand. That is why France Telecom recently rebranded its Wanadoo broadband division and Equant corporate-networks division to align them with Orange, its far stronger mobile-phone brand. This will allow the company to sell bundles of services to both consumers and businesses under a single brand. "It cost a lot to support all those brands, so it's very rational to choose the most popular brand in the collection to support all our products," says Mr Lombard. Similarly, doing away with the old SBC, BellSouth and Cingular brands in favour of the much stronger AT&T brand is "a huge opportunity for us", says Mr Harn.

#### Shades of 3G?

Convergence and bundling, in short, are two sides of the same coin. The convergence of multiple networks makes bundles of services cheaper to provide; and the business logic of bundling makes the cost of building new, converged networks easier to justify. But anyone familiar with

the telecoms industry may be experiencing a sense of déjà vu. This is the same industry that spent tens of billions of dollars building new fibre-optic networks in the late 1990s, in anticipation of a surge in traffic that never materialised. The result was a spectacular crash.

Meanwhile, European operators paid around €100 billion for licences to build new high-speed "third-generation" (3G) mobile networks. They hoped that as revenue from voice calls levelled off, the new networks would open up a lucrative new data-services market. But take-up of data services fell far short of expectations, and 3G's real value proved to be much less exciting: an ability to cut operating costs and provide lots of cheap voice capacity. This caused huge write-downs in the value of the licences. Both of these episodes are now regarded as embarrassing collective hallucinations over which the industry prefers to draw a veil. But might the same thing happen again with convergence?

"What problem is convergence solving?" asks Andrew Odlyzko, an expert in I

## ALL things to all men

**P**ART of the attraction of convergence is that it covers so many different things. "If you ask five people what it means, you'll get seven different viewpoints," says Stephen Bye, who is in charge of "wireless and converged services" at AT&T. In addition to the broad trend of convergence between voice, data and entertainment services, and the networks and companies that deliver them, the term is also used in at least two other senses that are worth a brief glance.

The first is the convergence between the worlds of telecoms and computing, otherwise known as information technology (IT). These have long been two industries separated by a common love of technology. For many years there was networking the telecoms way (generally expensive, proprietary and unreliable) and the computer way (generally cheap, standards-based and sometimes flaky). But now the two worlds are starting to look more similar as internet standards and technologies spread.

Telecoms networks are becoming ever

more reliant on software and complex computer systems to handle service delivery; computing, meanwhile, is beginning to look more and more like telecoms as software is increasingly delivered as a network service and companies are increasingly dependent on their networks to keep things running. Hence the advance of the big systems integrators into telecoms services, and the move of telecoms firms into IT services. This trend is real enough, but it is not central to most telecoms operators' strategies.

#### A remote control for your life

The second is "device convergence". Everything from a laptop to a mobile phone to a television to a games console is now, arguably, the same kind of device: each consists of a microprocessor, a screen, some storage, an input device and a network connection. You can make phone calls on your laptop, play games on your mobile phone and watch videos on your games console. This has prompted much speculation about con-

## Twoother kinds of convergence

vergence on a single powerful device that can perform all of these functions.

But although the various kinds of digital device look increasingly similar on the inside, they look increasingly different on the outside. Just look at the huge range of mobile devices, from basic handsets that simply deliver voice calls to BlackBerry-type e-mail terminals and multimedia handsets that let you watch TV on the move. "We have to be extremely careful that we don't go in the Swiss army knife kind of direction where we lose focus on what the consumer wants," says Olli-Pekka Kallasvuo, the boss of Nokia, the world's biggest handset-maker.

Jack-of-all-trades handsets have generally not sold very well. So Nokia's range of "converged" devices, the Nseries, consists of a variety of devices with specific strengths: as a music-player, a mobile TV or a camcorder, in addition to being a phone. The trend is not towards a single converged device, but towards a greater diversity of hybrid devices. Not so much convergence, then, as divergence.

> the economic history of telecoms at the University of Minnesota. "It is solving complexity issues for service providers, but it is not actually solving much for consumers." Guy Zibi, an analyst at Pyramid Research, a telecoms consultancy, is equally sceptical: "It's the technology department driving the marketing department." As with 3G, he says, operators are rushing to provide new services even though consumer demand is unclear and the technology is still immature.

Even some people in the industry, such as Arun Sarin, the chief executive of Vodafone, have their doubts. As a wireless-only operator, Vodafone could find itself high and dry if convergence does indeed prove to be the next big thing. But so far Mr Sarin has taken a cautious view of convergence, prompting much criticism of his strategy. Despite some recent convergence-friendly tweaks to its business model, including moves into the fixed-line broadband market in Britain, Germany and Italy, Vodafone's main focus is still on mobile. "It's very early days," says Mr Sarin. "We are dubious that customers really want all the things that people are imagining that they want." In particular, it is wrong to assume that everyone wants quadruple play, he thinks: "We're not saying that there are no customers who demand this—we're saying it's a very small fraction of customers."

So far, the evidence seems to prove him right. Only 1% of consumers in Italy, 8% in France and 10% in Britain have signed up for triple-play bundles of fixed-line voice, broadband internet and television, according to figures from Forrester, a consultancy. In a survey it carried out, 44% of European consumers said they were not interested in such service bundles, though 49% said they might be interested if there was a discount. But if operators have to offer steep discounts to get people to sign up for their bundles, it will be harder for them to justify the expense of building new converged networks.

### Ready or not, here it comes

True believers in convergence insist that it is about more than simply bundling existing services together: it will make new services possible, too. Many operators are already getting excited about "fixed-mobile convergence", in which a single handset can be used both as a mobile phone outdoors and to make cheap calls via a fixed line at home or in the office. Another oft-cited example of a new service made possible by convergence is to enable customers to programme their digital-video re-



corders remotely, either via the web or from a mobile phone.

Mr Verwaayen, a passionate football fan, talks enthusiastically about the idea of combining television with audioconferencing, so that a group of friends can watch a match "together" from different locations. Many operators are experimenting with security cameras that sit in your home, or perhaps your holiday home, and allow you to keep an eye on the place from your mobile phone or over the web. And there is the prospect of integrating your telephone with your television, so that when you are watching a film and someone calls you, the caller's name appears on the screen and the film pauses automatically if you pick up the phone.

Convergence, then, promises operators both the means to defend themselves against competitors today and the prospect of new revenues tomorrow. According to a survey published last year by IBM, a computer giant, and the Economist Intel-

ligence Unit, a sister company of this newspaper, 80% of telecoms executives surveyed agreed that it was essential to embrace convergence within the next three years as a source of long-term revenue growth. The same survey also asked respondents which converged services and markets they thought were likely to prove most important (see chart 2). The clear leader was voice-data convergence, followed by fixed-mobile convergence and telecoms-media convergence. And these are, indeed, the three areas where convergence is most visible.

This survey will examine the prospects for convergence by looking at each of these areas in turn. Of the three, voice-data convergence is clearly the most mature (think of the popularity of Skype, an internet-calling service that is now practically a household name) and provides the strongest evidence of the power of convergence to reshape the industry. Fixed-mobile convergence is less advanced, though the first commercial services are now available in some countries. Telecoms operators' move into the television market is also at an early stage, though there have already been some notable successes.

Whether or not convergence turns out to merit the hype, the industry has convinced itself that it is worth pursuing, and anyone who disagrees risks being left behind. "As soon as one operator adopts convergence, all the others have to follow," says Mr Lombard. Quite how far and how fast the process will go remains to be seen. But like it or not, convergence is coming. •

