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Future outlooks from 2007's lessons

Now is the time to keep one's eye on the sky, all around and, above all, ahead. At our feet is a constant swirl of innovation in technology, marketing and business models, at times flowing faster and deeper than the most optimistic of forecasts. It reflects the push of the past; now we should heed the pull of the future. The horizon of the digital world is crowded with challenge. The acceleration of bitrate in mobile and fixed communication apparently knows no end. New uses of the Internet, in a seeming explosion of pent-up energy, are somehow clustering around Web 2.0. And value chains are unravelling into new links between consumers and providers of equipment, service and content.

This report, our eighth, is a rare collection of data and discussion on the many dimensions of the *Digiworld 2008*, analysed and reported upon by IDATE's experts against the backdrop of a year when eras changed.

IDATE

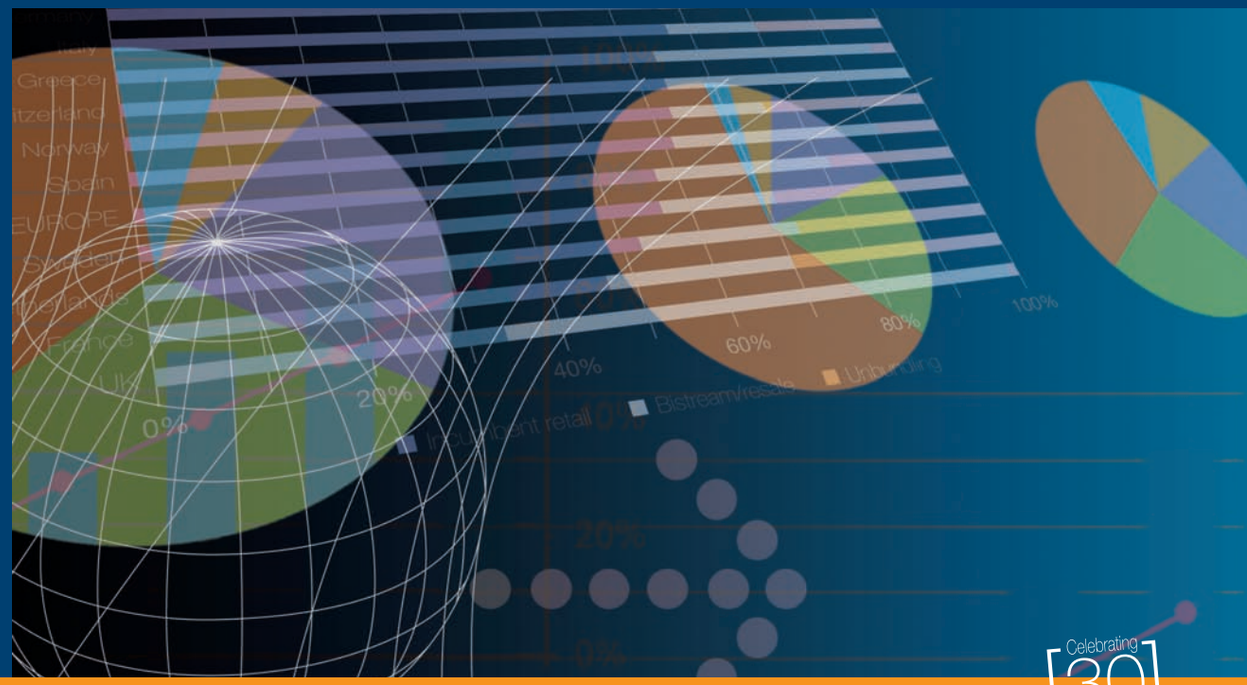
DigiWorld Yearbook 2008

The digital world's challenges

- telecom
- internet
- media

DigiWorld Yearbook 2008

The digital world's challenges



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IDATE
DigiWorld Programme

Founded in 1977, IDATE is one of Europe's foremost market analysis and consulting firms, whose mission is to provide assistance in strategic decision-making for its clients in the Telecom, Internet and Media industries.
The DigiWorld Programme was created several years ago with the goal of supporting those initiatives launched by the Institute that seek to make concrete IDATE's core objective of being a European forum for debate and exchange of corporate experience. IDATE has thus been instrumental in enabling international discussions between the industry's key players through its annual DigiWorld programme, supported by its members representing the sector's most prominent companies:

- DigiWorld Network: a series of monthly meetings in European capitals and international business trips
- DigiWorld Events: the DigiWorld Summit annual conference and a series of associated seminars devoted to the year's central issues
- DigiWorld Publishing: the DigiWorld Yearbook and the DigiWorld Economic Journal (Communications & Strategies)

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Foreword

In the foreword to last year's edition of DigiWorld, I put forth the idea that the true dynamic of the sector was being obscured by the receding growth in turnover for telecom product and service suppliers. The only real stimulus to industry momentum could be a constant stream of innovations across the board of its technologies, marketing and business models. 2007 helped to confirm this assessment, and the same will likely hold true in 2008.

Several factors attest to this belief, and none more so than the ongoing rise in bitrates for both fixed (xDSL and fibre optic) and mobile (HSDPA or EVDO) communications. This surge, which exceeds even the most optimistic forecasts of just a few years back, has boosted demand rapidly. And while it may call billing models and traditional sources of revenue into question, it has also – and above all – spurred an extraordinary degree of creativity in the use of available means of electronic communications.

When combined with the strides made on the software front with widgets and more, it has allowed new spaces to emerge, rich with dreams and utopias, and new realities to grow and show their immediate earnings value. Social networks, user-generated content, participatory encyclopaedias – all these new ways of using the Internet have coalesced, more or less willy-nilly, under the Web 2.0 umbrella. There, they constitute the elements of nothing less than new financial and social architectures whose development and scope is hard to predict. Alone in this landscape of the unfamiliar and the unknown stands the undeniable fact that they are eluding the grasp of traditional operators and regulators, both public and private.

This trend is helping to strengthen the presence and role played by the titans of the Internet which, born in the 1990s, have no old territory to protect or heritage to protect. They have built their success without technological preconceptions, by keeping up with consumer behaviour, by circumventing the market's veteran players and by developing an extreme flexibility. They know how to take the utmost advantage of the proliferation of technological and marketing innovations generated by the tens of thousands of start-ups around the globe.

In terms of revenue, they do not yet measure up to the brick and mortar multinationals. But these players without a past and without borders prove, day by day, their ability to change the rules of the game in their favour and to upset, if not threaten, those corporations now dominating the digital world's market for products and services. From the entry of Google into the software-as-a-service market, to the launch of the Android mobile OS, the initiatives keep on coming. Some, such as Google's bid on wireless spectrum, have no other goal than to sustain the current Internet economy – in other words, to secure their continued ability to benefit from equal treatment on the fixed and mobile networks that they themselves do not control. Yet, withal, the cards are definitely being reshuffled.

In this market context, the leading Internet players have managed to work to their advantage the culture of virtually 'free' that has developed around online services, by structuring their business models around third-party revenue, and ad monies in particular. Here, 2007 was a year marked by increased competition between traditional media, Internet companies and telcos, each vying for a growing share of advertising spending. Their expansion of user or subscriber bases, and the drive to tie down their loyalty, are forcing them to engage in fierce battles to secure popular content and services.

The confusion created by all these changes is exacerbated even further by the rapid rise of

Chinese, Indian and South Korean players. The size of their markets, their abundant pool of top-flight technicians and managers, their capacity to market simple, low-cost products and their overall creativity are helping to build home-grown companies capable of upsetting their Western rivals, and perhaps even of imposing their rules, at some time in the future.

Parallel to this, increased pressure is driving a shift in the value chains that tie consumers to equipment, service and content providers. The imperative to preserve, or refashion, these chains is engendering a profound restructuring of the sectors in the telecommunications economy. The trends themselves may appear somewhat incoherent, contradictory even: vertical integration, from infrastructure management to video distribution; horizontal consolidation, with the revival of telcos' external growth strategies; concentration on core business areas or diversification… There is clearly no single solution, with the need, often, to reconcile opposing demands: agility and critical mass, specialisation and seamless solutions, capillary actions and economies of scale… What does seem likely is that the winners will be those who manage the fastest to adjust not only to changes in technology and in the environment, but also to the ramifications of the passage into adulthood of those who grew up with the Web as teenagers and who have structured the way they learn, the way they behave and the way they relate with institutions around the discovery of a world that was not available to their elders.

The shape of things to come is by no means set in stone, and the coming years seem as rich in opportunity as ever before, and this as much for existing players as for creative and agile newcomers.

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Introduction

Yves GASSOT, CEO, IDATE

In the past, we have always begun the *DigiWorld Yearbook* with a look back over the exceptional events of the year gone by, drawing several conclusions in the process. This year, we have decided to reverse our perspective this year and discuss the prime uncertainties that lie ahead, as they appear to us in these early days of 2008.

Accordingly, we have chosen to summarise in three central questions the most pressing issues weighing on the future of the telecommunications, Internet and television industries:

- Will broadband data applications soon become a key component of the mobile economy?
- What are the lasting elements of the Internet dynamic, and which are more ephemeral?
- What industrial organisation should there be for DigiWorld markets?

1. Will broadband data applications soon become a key component of the mobile economy?

A great many market observers agree that the launch of the iPhone was a key event in 2007, but this does not make it any easier to answer the question. The formidable growth driver that was the mobile phone has lost a lot of steam over the past few years – so much so that it now accounts for around 2% of growth in value in most European countries. In many cases, penetration levels have reached saturation while ARPU, still largely comprised of calling services, has, at best, levelled off. We could put this down to there being a mature market with oligopolistic tendencies, which has justified a strict regulatory framework; in this case, the future of mobile telephony would seem to clearly lie in the equipment momentum in emerging economies.

Yet the events of 2007 also suggest the end of one era and the start of a new one for cellular, one that will be dominated by technological innovation and services, by the arrival of new players and by the search for new business models. Such a transformation would be comparable to that in the fixed telephony market, which evolved, in a matter of years, from simple landline calling to delivering multi-service broadband connections.

Beyond the hopes and dreams of equipment suppliers or technologists, where can we find the markers of a new paradigm in the mobile sector? First off, the latest 3G generations of gear offer a significant increase in bitrates: HSDPA delivers access at speeds expected to be near those of ADSL. Until now it has been difficult to give consumers a really concrete idea of what the switch from 2G (GSM) to 3G means. Since their launch, 3G infrastructures (W-CDMA or CDMA) have not revolutionised usage and, with the exception of Japan and South Korea, 3G subscribers have remained a minority in the global cellular population. But 2007 gave us hints of increased consumption of data services – especially clear in the ARPU being reported in the United States and Australia, and in a more nuanced fashion across Europe.

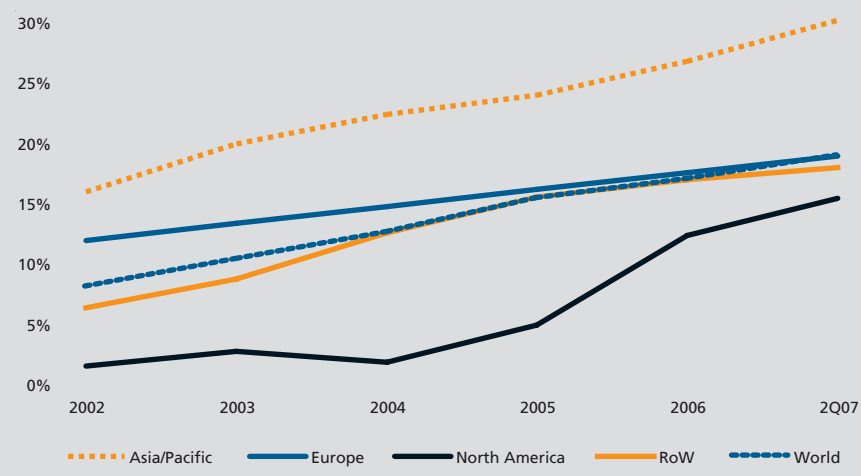
Spurred by the mobile version of WiMAX, which is now part of ITU 3G standards, future generations promise further progress in spectrum efficiency, with speeds in the tens of Mbps and a per-Mb cost that is expected to drop by at least a factor of 10. As concerns technologies and standards, the playing field is still wide open. It appear that, between now and 2012, the W-CDMA/CDMA rivalry could give way to a battle between Long-Term Evolution (LTE) and the expected development of WiMAX since they share a number of common options (OFDM/A, MiMo antennae). LTE seems to have the advantage here: it is being touted as a solution of continuity

by industry insiders such as mobile equipment leader Ericsson, and by virtually all major operators, including such players as Verizon Wireless, which have kept up with the development of the CDMA family of standards up to now. The developments scheduled for mobile WiMAX are backed chiefly by those outside the mobile equipment game, such as Intel and Motorola, and by new entrants to the services market – with the exception of Sprint Nextel which has nevertheless suffered a series of setbacks since committing to the technology, added to its difficulty in reaching an agreement with Clearwire.

Over and above the remarkable orchestration of its launch, the iPhone could cause disruptions on a number of fronts. It goes without saying that it serves as proof of the importance of the quality of the user interface. No doubt it will elicit counter-offensives from industry heavyweights in the months to come. But it also gives operators an incentive to market subscriptions that include high volume data options and that may go so far as unlimited data use, comparable to what is now ubiquitous on the fixed Web. Naturally, the transition from capped flat rates needs to take the different customer segments into account. Incorporated into bundles that are properly designed to prevent a too swift cannibalisation of voice and text message revenue, operators can hope to see their income stabilise. Even if the model for sharing traffic revenue imposed by Apple will not necessarily be adopted across the board, the iPhone does indeed move the goalposts. Nokia, which has been struggling to find an opening, is one likely beneficiary. Having spun off its infrastructure business, now managed by the new Nokia Siemens Network unit, the globe's number one handset supplier did not confine itself to just increasing its market share in 2007. With OVI, it launched a service aggregation platform equipped with improved interfaces and giving users a range of personalisation options. The company also continued its acquisitions to consolidate its vertical integration strategy, taking control of Navteq to strengthen its position in GPS-based applications.

Meanwhile, the top Internet companies took every opportunity in 2007 to underscore the

Share of data services in total mobile revenue



Source: Merrill Lynch

importance they see in carrying their success over to the mobile Web. Yahoo! took the lead by signing agreements with mobile operators and handset suppliers. Google managed to fuel rumours about the release of the GooglePhone before going public about an alliance around its mobile OS, Android. The challenge for Google is to create the best possible conditions for its applications to function on mobile, while preventing any future restrictions on the operating systems developed by Microsoft (Windows Mobile), Nokia (Symbian) or other open source alliances Linux (LiMo Foundation) which are much less devoted to its interests. In the same vein, the company has focused on the other bottleneck, namely access to spectrum, with the semi-successful launch in the autumn – at the start of the auctions for frequencies liberated by the digital switchover in the United States – of a debate about imposing an open access model.

Operators, most of which are working on a fixed-mobile convergence strategy, cannot ignore the latest ambitions of Apple, Nokia and the Internet giants, nor overlook their name brand clout and the popularity of their applications with landline customers. We shall thus see a great many more partnerships forming, even if we hear operators speak of a lack of interoperability between IM applications and the dangers of saturated capacity, while Internet companies will complain about having their cookies blocked. Cellcos indeed enjoy considerable leverage – through their handset subsidies, customer identification and billing and through the establishment (via alliances with other operators) of standardised profiles (IMS) – to promote the interoperability of multimedia communication applications.

Several scenarios can be mapped out from these rivalries and partnerships. It is, though, still too early to predict whether any one trend will prevail.

The role of the operators in the mobile Internet could be confined to selling broadband access, either in the retail market by monetising integrated fixed and mobile access, or in the wholesale market. Control over the network constitutes a strategic element as competition between operators is based on the price charged for access, according to network quality in terms of availability, reliability and speed. Search and personalised interfaces for accessing applications are the realm of either handset makers or specialised Internet portals. Consumers may well have to deal with a lack of interoperability between their application environments for functions such as address books and buddy lists. And regulation may legitimise the situation by imposing an open access model that encourages a high degree of infrastructure sharing, while intervening *ex-post* against players who are over-dominant in certain applications or services.

The future could also hold a shopping mall type configuration whereby the cellco puts an original service offering on the market but which is built in tandem with major media or software brands. Here, the network plays a smaller role; it can be outsourced and governed by sharing agreements. The quality of the service aggregation platform, as well as the entire subscriber management environment, tracking connections, partner relations and remuneration are all essential to building a successful solution.

Of course, the largest operators may well have their eyes on an integrated approach, combining control over fixed and mobile network infrastructure with their own service and user management platform, and by developing original content. They would thus have to work to impose their applications, which would be competing with those supplied by the Internet titans, by delivering innovations in the areas of fixed-mobile convergence and evolved interoperability in multimedia communications. Meanwhile, regulators will be regularly called upon to examine the dangers of discrimination in the way

services are handled, according to whether or not they are controlled by a cellco.

We should add that these different operator positionings need to be correlated with the varying degrees of integration that we can expect between mobile broadband and the Internet. If the prevailing belief, one upon which we have based our analysis to now, is that the three billion mobiles that are currently in use are destined to become the chief means of accessing the Web, we cannot ignore the inconveniences of Web browsing that exist for a pedestrian using a small, mobile screen. The future of the mobile Web will thus focus on simple searches largely associated with the user's location, on security, healthcare, credit and payment applications. Growth will also go by way of machine-to-machine. On the other hand, the failure of the mobile Internet, or its very gradual development, could well be the result of exacerbated competition over wireless roaming services, such as fixed WiFi or WiMAX.

Parallel to this, although public authorities have the power to stimulate and encourage investment through regulation, they wield even greater power by ensuring dynamic spectrum management. The large-scale deployment of the mobile Internet requires frequencies being made available to the sector. The allocation of a portion of UHF bands currently used by analogue TV to be able to provide affordable coverage in medium-density zones needs to be confirmed. But spectrum allocations also have to take into account the 20 MHz channels that will be needed to supply enough bandwidth. When it comes to spectrum management, and not only of the digital dividend frequencies, there is a large degree of uncertainty that has to be removed rather quickly, and public authorities will need to make a great many rulings concerning the different frequency bands – performing a balancing act between the weight of the lobbies, chosen priorities, the constraints of regional and international coordination…

And what of mobile TV? Two or three years back, it seemed as if the mobile sector's revival was to go by way of mobile television. But the delays in the commercial launch of these services reveal a trial and error approach to creating an ecosystem that is very different from the existing cellular telephony one, involving choices over standards and frequencies, new entrants and a new set of business models. It does appear likely that, through mobile handsets, we shall see an increase in TV and video consumption but, drawing on the examples of the South Korean and Italian markets, it also appears that its impact on the mobile sector is overstated. And has this not, in fact, been the source of a certain reluctance on the part of mobile operators to address the issue of the mobile Internet until recently?

We can therefore hope that, in the coming months, the launch of mobile TV will go hand in hand with the uptake of the mobile Internet. Yet certain questions remain stubbornly unanswered: At what pace will mobile broadband develop? When shall we see mobile operators' capex increase? What are the predictions in terms of leadership and dominant applications, given what we have already learned on the Web? What role will the more mobile-centric applications play, such as those based on GPS? How will the various components of ARPU and operator margins evolve? …

2. What are the lasting elements of the Internet dynamic, and which are more ephemeral?

It is paradoxical to wonder about the Internet's momentum at a time when all-IP appears more inexorable than ever before, including for mobiles. It is, nonetheless, legitimate to identify the uncertainties that remain on both sides.

The first concerns questions triggered by Web 2.0 sites and, more generally, the expected impact on the related industries that are television and software.

Alongside Apple, Facebook is undoubtedly one of the stars of 2007, succeeding YouTube without eradicating the prominence of the top UGC site and without undermining Google's ongoing rise in value. For social networks, advertising is still key in the race for audience as online ad spending continues to increase steadily. Google is still the prime beneficiary of these monies, providing a perfect illustration of the long-tail phenomenon with its sponsored links. It remains to be seen how Google will manage its developments and investments on so many fronts while continuing to be the gateway to the Web.

Beyond that, and for a great many Web 2.0 sites, the business models are not yet stable, and questions remain over the true ability to capitalise on the sophisticated segmentation mechanisms they offer to advertisers. Nor can we ignore Internet users' ultimate reactions to tracking and exploiting their browsing patterns. Video aggregators also need to build trust with advertisers by negotiating with the copyright holders for access to professional quality videos capable of generating a mid-tail audience.

Whatever their distribution mode, new communication and consumption models cannot be defined in comparison to the television sector, whose announced demise seems greatly premature. The TV audience is stagnating but not shrinking and television's share of media ad revenue continues to rise. The ambiguity derives from a too frequent confusion between TV industry players and TV viewing. The sector's leaders need to adapt to the fragmentation of viewers created by the rise in the number of channels on offer and the new platforms created by the digital revolution. They also need to adapt to time-shifted viewing and the trend of increasingly personalised viewing, made possible by PVR, VoD and, of course, the Web.

And, then, what of piracy? All indications (spread of P2P software, success of store and share sites and dedicated newsgroups) are that it is still on the rise. The logical reaction of TV industry players has been to work on strengthening their flagship channel, and by adding pull to push through VoD and especially through Catch Up TV services – playing on syndication through agreements with the Web's top players, using a B2B or B2B2C model.

Across the board, television is not the only sector to be concerned about the impact of the Net. The software industry is also having a tough time unpacking what has appeared to be an endogenous shift in the sector up to now – software as a service and replacing the licensing model with subscription-based remote access formulas – combined with the more direct export of Web 2.0 developments (RSS, mashup, AJAX) to the business world, and the issue of ad revenue. In other words, when Microsoft states that it hopes to have 25% of its revenue come from advertising in the very near future we do not know whether that means a drive to have MSN catch up to Google in the race for Internet dominance (since accentuated by the takeover of Double Click) or whether the Seattle giant perceives Google's initiatives as a real threat to its desktop software and PC and server OS market share.

These uncertainties about the future of the Web and its leading protagonists, spurred by the rise of the mobile Internet and the object-centric Internet of the future, go hand in hand with increasingly relevant queries over the inner workings of the Internet as the network of networks. We have seen operators question peering agreements when faced with the constraints created by asymmetrical video streams. Until then, a sizeable portion of interconnection agreements had been based on principles of cooperation in

view of a balanced exchange between peers, but such is no longer really the case.

Similarly, operators such as Comcast, the North American cable giant, have admitted that they have restricted their subscribers' use of P2P. If peer-to-peer in its current legal incarnation on BitTorrent can appeal to service providers for distributing popular rich media content, while saving on the bandwidth capacity usually required for connecting to the server, it shifts the load to the operators who find themselves faced with atypical traffic that can bring down the actual speeds supplied to customers. A number of solutions have been imagined, including ones that would enable the P2P application to know enough about the network topology to be more efficient at searching for all the elements of the video file to be assembled and not have to go to a hard drive in, say, Sydney when they can be found on a hard drive down the road.

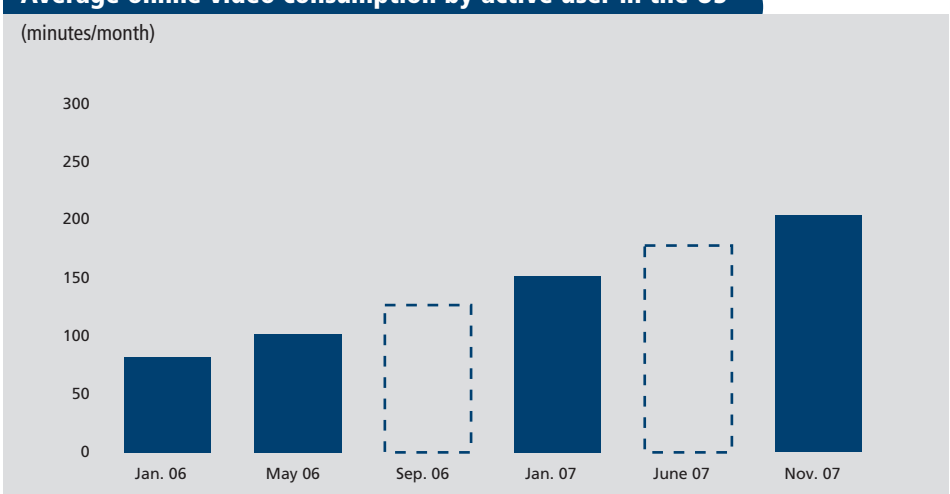
As a result, as disparate online services converge, the Internet will need to adapt packet management mechanisms to the nature of the applications themselves, or provide varied managed distribution packages. It is hard to imagine that this technical differentiation will not also lead to a more or less pronounced differentiation of prices and strategies by operators.

We have seen that the idea of net neutrality is not confined to stigmatising those few cases where telcos have sought to ban the use of Skype on their ADSL connections.

Now when we look at media distribution on the Web, we can see that not all mechanisms are equal, depending on whether a user is downloading files progressively, with or without streaming, direct connection, via peering or transit, over a CDN, using cache architectures over a P2P network or not… Each of these methods, depending on the nature and expected quality of service, means involvement from different players along the chain, ranging from content management (featuring DRM, geo-blocking, usage statistics and payment) and Web hosting to the distribution network and to browsing control and tracking operations.

Questions over the differentiation phenomena that accompany the all-IP convergence are by no means divorced from the issue of the impact of FTTx rollouts that have only

Average online video consumption by active user in the US



Source: Comscore

just begun here and there in Europe. Naturally, we need to know the pace at which these new infrastructures will be deployed and what the profitability outlook is. But it also provides an opportunity to wonder about the nature of wholesale revenue which could ensure a return on investments, and about the merging processes of the IPTV market (telcos' triple play bundles) with the more or less managed over-the-top TV packages.

It seems safe to bet that, in the coming years, among the major issues shaping the financing of tomorrow's Internet we shall find changes in interconnection agreements and, more generally, shifts in the content-pipeline relationship near the top of the list.

3. What industrial organisation should there be for DigiWorld markets?

To ensure the success of their triple play bundles, telcos are having to become increasingly involved in the packaging of TV channels, to invest in programmes and even in a channel's operation. At the same time, operators are signing a growing number of network outsourcing contracts with equipment suppliers and the number of competitors in each national market is shrinking fast. These three apparently co-existent trends – vertical integration, functional or structural separation and horizontal consolidation – make for uncertainties in the future shape of the DigiWorld.

In Europe, the TV service that telcos market through their triple play seems currently to act more as an element of differentiation and a means of securing the loyalty of broadband customers than a means of spurring an increase in revenue or higher margins. Access to programmes is made easier with the launch of digital terrestrial TV which involves a growing number of channels and broadcasters. The services might, however, encounter an obstacle when seeking to offer access to the premium programmes that are controlled by satellite Pay TV providers. Hence the onset of debates over unbundling the BSkyB and Canal+ packages and telcos' involvement in the bidding wars for the broadcasting rights to major sporting events. The more aggressive telcos will need to overcome the handicap of an ADSL base that covers only 50% of households, of which a sizeable portion do not have a service fast enough to support IPTV.

In the United States, where spending on TV is much higher, telcos are counting on amortising their latest network investments with television packages that they struggled to negotiate, due to the existing ties between Hollywood and the top networks. Here it is the country's cable operators that are going head to head with AT&T and Verizon.

As stated earlier, telcos' IPTV strategies will also need to be examined in light of what will undoubtedly be increased competition with the programmes being distributed online. For some, the risks of discrimination are expected to be erased by net neutrality legislation that imposes a clear separation between ISP activities and the service provider business. Will the next step be widespread functional or structural separation between the business of network operator and that of service provider?

The European Commission wants to give national regulators the power to impose functional separation if necessary. In Europe, this provision is a response more to the dangers of a lack of effective competition in the access market than to the risks of discrimination in the distribution of content. The new remedy draws its inspiration from BT's creation of the Openreach division to manage access, at a time when local loop unbundling was slow in coming to the UK market. For some, the inexorable advent of fibre optic access, which is thought to create a natural monopoly, is just one more reason to create a model that distinguishes the network operator from the service provider.

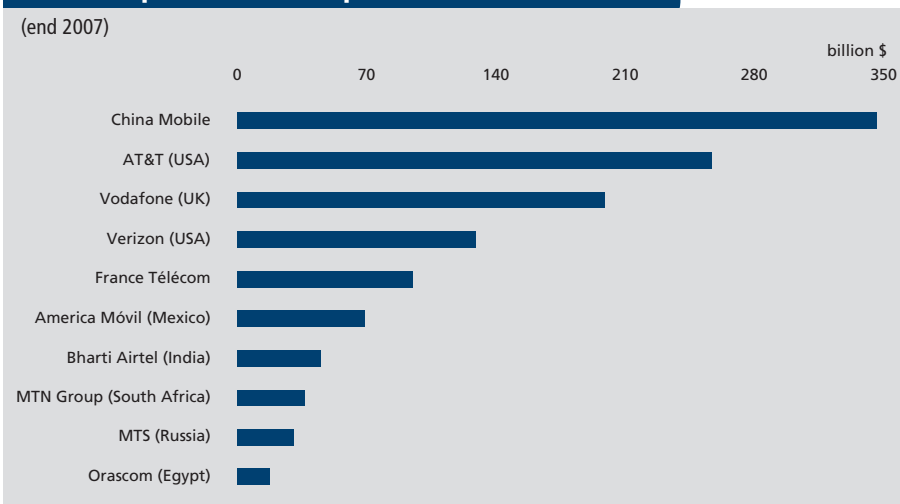
In northern Europe and in France, it is the towns and cities that feel they are in the best

position to implement the open access approach, and taking control of the rollouts themselves. But private equity firms also have a close eye on the opportunities that could arise from the dismantling of telcos. The spin-off option was briefly examined in Italy back when Telecom Italia's chief shareholder was in trouble, and is still on the table for Ireland's Eircom. The hopes of private equity firms are sustained by their investments in utilities that guarantee them regular and stable income. The model seems currently to be best suited to outsourcing procedures, which are well established in the mobile industry. Without being able to say for certain that these practices have become a commonplace, we did see a growing number of deals signed in 2007 in both Europe and Asia. In India, for instance, to keep up with the incredible pace at which their customer base is growing, and to maintain their remarkable margins despite such low ARPU, we are seeing outsourcing of tower operations to half-owned, half-shared tower companies. At the same time, the planning, deployment and management of networks is being outsourced to leading equipment suppliers, and the IT management of subscribers and services to software specialists.

It is, however, too early to predict widespread separation in the coming years. First because many regulators are still attached to a competition dynamic that remains based on investment in innovation and intermodal competition. They prefer to find regulatory provisions that will lift barriers to access by developing targeted forms of sharing (civil engineering, ducts, wiring on the premises) and to promote the diversity of players and technologies (cable, wireless, fixed and mobile broadband). And, second, a great many analysts have pointed to the problems of perimeters and dividing lines when undertaking separation, along with the losses of technical and commercial synergies in the process.

It is in fact likely that the model of industry organisation will be no more than that of the 'pure and perfect' market. Depending on the features of a given market, it will combine the strategies of the players and the geographical zones involved with competition dominated by rival infrastructures or concentrated chiefly at the services level, sharing

Market capitalisation of top world telcos, end-2007



Source: *Les Échos*

the infrastructure that is managed in a separate fashion. Similarly, we shall no doubt see more and more differences in the ways operators position themselves, comparable to the models sketched out for the mobile Internet.

All these outstanding issues need to be combined with the question of whether we are going to witness a new round of consolidation in the telecommunications sector. Consolidation continued in Europe in 2007, though still mainly on a national scale (despite an added initiative by Telefónica in 2007 which acquired a stake in the holding company that controls Telecom Italia) and driven by the current, virtually unanimous, belief in the need for fixed-mobile convergence. It would seem safe to bet on the onset of a pan-European consolidation phase that would help generate economies of scale, without limiting the number of operators providing services to the European consumer. We are nevertheless aware of all the impediments and difficulties involved in these types of operation. In a more or less near future other alternatives could well emerge, with the intervention of sovereign wealth funds and the industrial and financial powers that are developing in the emerging economies.

To conclude, it is hard not to place these queries alongside the hypothesis of a new, chillier economic climate ahead, weakened by the impact of the sub-prime housing crisis and skyrocketing energy costs. At the market level, in recent weeks stock markets have focused chiefly on the counter-cyclical nature of telecom stocks but the lack of cash flow will undoubtedly have an effect on the investment power of the industry.

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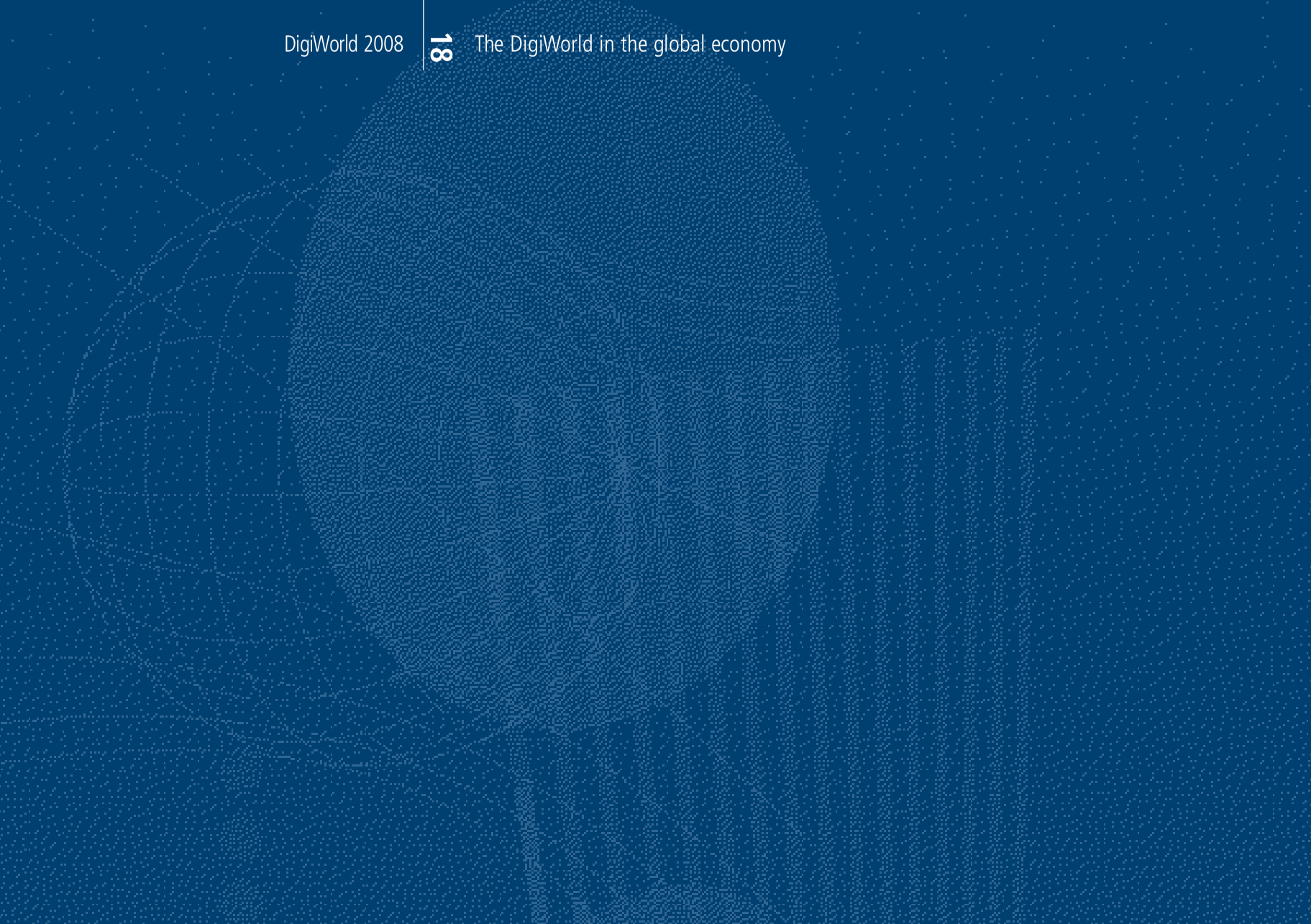
And so, here is a brief – and by no means exhaustive – look at why it will be fascinating to watch how things play out in 2008. In deciphering the latest twists and turns in the marketplace, you can count on IDATE to be at your side.



I The DigiWorld in the global economy

The role of the DigiWorld in the overall economy

In 2007, the markets of the DigiWorld grew to 2,750 billion EUR, a 5.8% increase over 2006 – a slower rate of progress than in previous years but, because GDP growth worldwide has also slowed considerably, the ICT industry is enjoying a growth rate that is half a point higher than the economy as a whole. It is, nevertheless, too early to see in this the sign of a lasting growth revival for the DigiWorld, particularly given the looming prospect of a global recession which will undoubtedly have an impact on the industry.

Any analysis needs, to be sure, to be nuanced by segment and by region. We have thus categorised the components of the DigiWorld by major geographical region and by sector. As in previous editions, the first two chapters are devoted to an overall review of the market. The following chapters, dedicated to changes in information and communication society access and content (business and consumer applications), reveal the unabated momentum of innovation, as much from a technological point of view as in terms of consumer behaviour and business models, all of which are helping these markets to evolve. Despite the progress made, however, a great many questions remain unanswered, at all levels.

Positions still unstable

After the effervescence of the 1990s, in which DigiWorld markets grew annually by over 12%, on average, between 1995 and 2000), the burst of the dotcom bubble at the turn of the century put a brutal halt to the euphoria. After several years of sluggish growth of between 3% and 5% from 2000 to 2004, ICT markets have been enjoying slightly rosier health in more recent times. The latest plateau, with growth only just in line with growth of the overall economy, could, on the face of it, reflect having reached a certain degree of maturity. Such a judgement, however, would overlook a number of features that hamper the harmony of a fully-formed model. There are the ongoing disparities between modest, and even feeble, growth in terms of value and the sometimes massive growth in terms of volume; the equally persistent disparity between the meagre growth rates of mature markets and the double-digit growth reported by emerging economies; and, finally, the contrasts between the remuneration models inherited from the old economy and new forms of monetisation. And so it is that instability or effervescence appears to reign over any given market, even if the relative inertia of the major balances can create the illusion of a relatively flat DigiWorld landscape.

Still massive volumes…

In last year's edition, we underscored the tremendous rise in market volume, particularly in the consumer segment: sales of some one billion mobile phones, 235 million computers, 50 million flat screen TVs, more than 60 million new broadband connections… These figures seem all the more impressive when compared to sales figures from three or four years earlier, at a time when most of these goods and services were only just coming onto the market (with the exception of the mobile which had already been around for awhile). The momentum held up in 2007 with sales of more than 1.1 billion mobile phones (+16% over the year before), 264 million PCs (+12%), 68 million new broadband connections, close to 100 million flat screen TVs (double 2006 figures) and 50 million handheld GPS devices.

The markets are growing at a much less dramatic pace in terms of volume due to ongoing pressure on prices: the average price of a mobile phone has dropped from 130 USD at the end of 2005, to 120 USD in 2006 and down to 110 USD by the end of 2007, while the average price of a flat screen TV dropped by 20% (LCD) and 30% (plasma) in a single year. The same trend has taken hold in the corporate equipment market, with examples including servers whose average price has decreased by between 5% and 15% in a year, depending on the manufacturer, and this with very few exceptions (high-end systems suppliers).

… and thriving regions

One outstanding feature of the ICT goods and services industry is the impact that its development has on overall economic growth. Although not everyone agrees on the ability to truly measure its impact on productivity, there is no denying that production, on the one hand, and consumption, on the other, of these information and communication tools do create new opportunities. There is no end to the initiatives, both public and private, being rolled out to take the utmost advantage of these new capabilities.

Emerging economies are taking advantage of this changing environment to position themselves on the world stage. Their weight in the equation, in terms of both consumption and especially production, is rising rapidly: these markets' share of the world total is increasing by over a point each year, and has now reached 30%. China alone accounts for a quarter of worldwide exports of IT and telecommunications hardware.

But economic climate is chillier

ICT markets as a whole have managed to maintain a steady momentum, thanks to massive sales and the steady rise of emerging economies. But pressure from all sides is leading to shrinking margins for DigiWorld companies, as illustrated by mediocre and, in some cases, poor stock market performances. This scenario, until now limited largely to North American and European firms, is gradually spreading across the entire globe, including Asia. Of course, the trends need to be put into their historical context, as the companies in these same sectors enjoyed huge margins and super-performance on the stock market for many years. The setback in the early part of the decade could be seen as a 'natural' self-correction by the market were it not for persistent signs of tension and, now, the uncertainties clouding over the global economy.

Accentuated by the financial turbulence of the summer of 2007, and skyrocketing oil prices, these uncertainties are creating a climate that weighs heavily on investment, and even on consumer spending. They are giving rise to questions about possible repercussions in the DigiWorld.

Growth in the United States is expected to continue to suffer the blows of the sub-prime housing debacle. Employment rates will likely continue to adjust and limit the rise of consumption. It remains to be seen whether the measures taken by the Federal Reserve and the increased competitiveness created by the weak dollar will help fend off a recession.

In the Eurozone, after a surge in the third quarter of 2007, growth is slowing down again. A mild slump in the housing market, nowhere near as dramatic as on the other side of the Atlantic, and the ongoing strength of the Euro – which is impacting exports – are the two main contributors to this decline.

Meanwhile, in Japan, the lack of a real revival in consumer spending continues to impede steady growth.

Finally, growth in emerging markets is still high, particularly in China (+11% in 2007), but the grim outlook in the rest of the world could eventually hinder the momentum being enjoyed by these economies.

The slow rise of emerging markets

DigiWorld markets by region

What is the DigiWorld?

We define the DigiWorld as encompassing all those sectors that are already or on the verge of being based on digital technologies, namely:

- telecommunications services: fixed and mobile telephony, data and image transmission;
- telecommunications equipment: public network equipment, private systems, handsets, software and associated services;
- computer software and services: data processing;
- computer hardware: mainframes, PCs and peripherals, data transmission gear;
- TV services;
- consumer electronics: audio and video equipment.

Industrial regions still dominate the landscape…

In 2007, Europe and North America still accounted for 64% of DigiWorld value, having lost 0.9 points since the year before. This total goes past the 75% mark when adding Japan and South Korea to the mix, along with several other mature markets in the Pacific region (Australia, New Zealand) – in itself, a drop of 1.2 points from 2006. Growth in value nonetheless needs to be correlated with equipment levels in each country or region, along with the average price of hardware and especially services in the different markets.

As a result, Japan, whose ICT equipment levels are very high, does not have the same growth potential as less mature markets, which goes some way to explaining the steady and tangible decline of Japan's weight in the DigiWorld (dropping from 12% of the world market in 2007 to 11% in 2007).

On the other side of the equation, emerging countries still harbour considerable potential, particularly in terms of volume, although the impact of that growth in terms of value is hampered by the generally lower, and in some cases much lower, ARPU than those found in advanced markets.

… but growth is losing steam

As a result, there were considerable disparities in growth trajectories around the globe in 2007, ranging from 3.7% in Europe to 12% in the rest of the world (Latin America and Africa-Middle East), passing by way of 5.1% for North America and 6.7% for the Asia-Pacific region as a whole. It should also be said that these average growth rates can include sizeable variances between countries within the same region, and between different sectors of activity. The growth momentum in Europe as a whole is also losing steam, with growth rates lagging behind other regions, including North America, and decreasing even further in recent times. The Old Continent's share of the DigiWorld dropped by 1.7 points between 2004 and 2007.

In Asia-Pacific, meanwhile, the most mature markets' share (Japan, South Korea, Australia, New Zealand) of the ICT sector has dropped from 56% to 50% over the past few years. There is a dramatic contrast between their annual growth rates, which have been under 3%, and those found in the region's emerging nations, led by China and India, of around 10%.

In terms of contribution to growth, the weight of each region is more balanced: while emerging markets in Asia account for a quarter of global growth and the other emerging regions for around 20% – on par with Europe – North America still leads the way with close to 30%

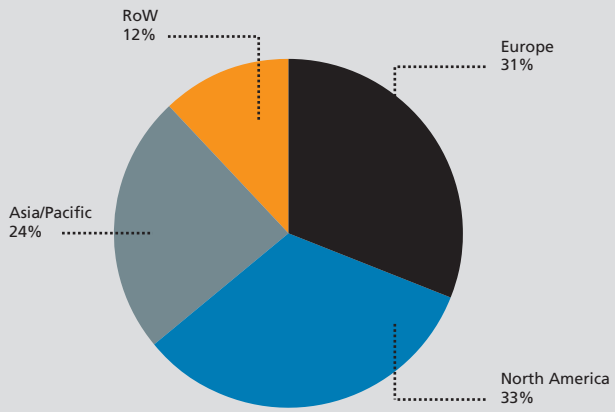
DigiWorld markets by region

(billion €)	2004	2005	2006	2007	2008	2011
Europe	746	783	819	850	882	975
North America	761	810	855	899	941	1 071
Asia-Pacific	554	589	630	672	715	832
RoW	221	256	293	329	356	431
Total	2 283	2 438	2 597	2 749	2 894	3 309

Source: IDATE

The slow rise of emerging markets

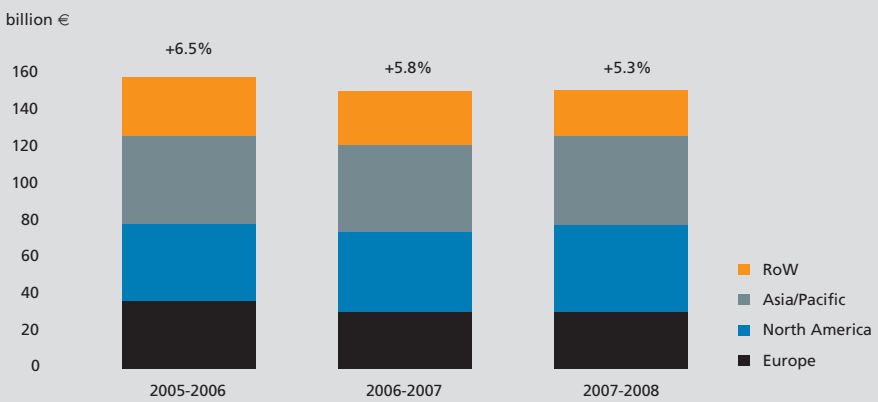
Breakdown of Digiworld markets by region, 2007



Source: IDATE

at a time of slowing growth

DigiWorld markets contribution to growth, by region



Source: IDATE

The DigiWorld, one of contrasts

ICTs' weight in the economy

DigiWorld markets represent 7.4% of global GDP, a percentage that has remained relatively stable for several years now. This means that DigiWorld markets have evolved at more or less the same pace as the economy as a whole. As mentioned earlier, and examined elsewhere, this is due in part to the considerable gap that exists for certain products and services, between a huge increase in volume but an only moderate rise in value. It is thus somewhat paradoxical to name those sectors as driving the market when value growth is only keeping pace with the economy overall. Another, perhaps more significant, explanation naturally lies in the impact of the spread of ICT products and services: what is important is not so much the monetary value of these sectors as their contribution to the economy as a whole. For DigiWorld players, the issue of monetising their business nevertheless remains a central concern.

It should also be pointed out that overall trends reflect the sizeable contrasts between the different segments and regions.

Consumer electronics drive growth

On the whole, the contribution made by hardware to the economy is shrinking. Here again, however, a distinction needs to be made between computer hardware, which has been steadily losing ground for several years (going from 0.9% to 0.84% of GDP between 2004 and 2007), telecommunications systems and handsets, whose momentum has shuffled along since its 2005 peak, and consumer electronics which, on the contrary, have been slowly gaining points. The services segment, meanwhile, has been increasing its weight in the equation but, here too, as the result of sometimes opposing trends in its sub-components. IT and software services are leading the charge, while telecom services are only just staying the course and the declining contribution to growth from TV services that began in 2006 was even more pronounced in 2007.

Telecom and IT segments are losing some ground overall, while media segments are gaining thanks to the healthy momentum of CE markets.

DigiWorld markets in Asia-Pacific, growing faster than GDP

The large emerging markets of Asia-Pacific, together with the emerging markets in the rest of the world (Latin America and Africa-Middle East) are the only regions where ICT markets represent more than 8% of GDP. In terms of growth momentum, only the number one region, Asia-Pacific, made even greater strides in 2007 while ICTs' contribution to the economy dipped slightly in other developing regions. The performance of Asian marketplaces is all the more remarkable given that IT investments in the sluggish Japanese market still contribute 40% to GDP growth: the region's emerging markets, led by China and India, are reporting even stronger performances!

On the flipside, Europe's ICT markets, which have historically contributed less to GDP growth than in other regions, lost more ground in 2006 and 2007. But this is no doubt the region that best illustrates the paradox mentioned above given that the Old Continent has equipped and continues to equip itself with the latest communication devices and services.

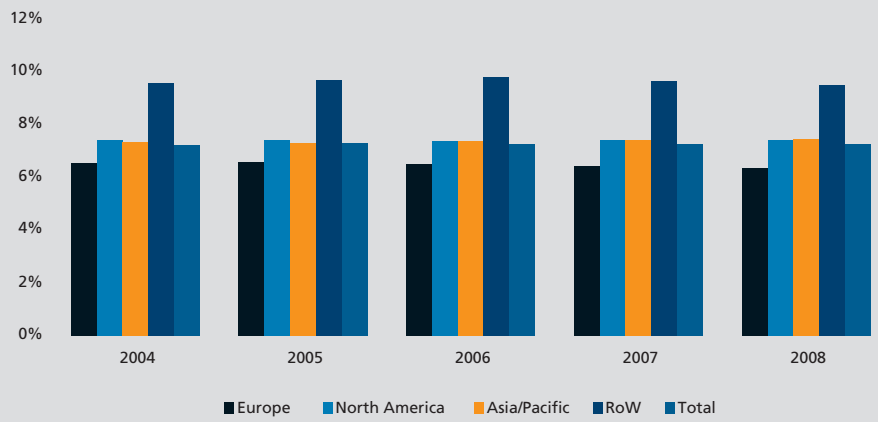
DigiWorld contribution to global GDP

	2004	2005	2006	2007	2008
Telecom services	2.7%	2.7%	2.6%	2.7%	2.7%
Telecom equipment	0.6%	0.6%	0.6%	0.6%	0.6%
Software and computer services	1.7%	1.7%	1.7%	1.8%	1.8%
Computer hardware	0.9%	0.9%	0.8%	0.8%	0.8%
TV services	0.7%	0.7%	0.7%	0.7%	0.7%
Consumer electronics	0.7%	0.7%	0.7%	0.8%	0.8%
Total	7.2%	7.3%	7.3%	7.3%	7.3%

Source: IDATE

Europe dragging

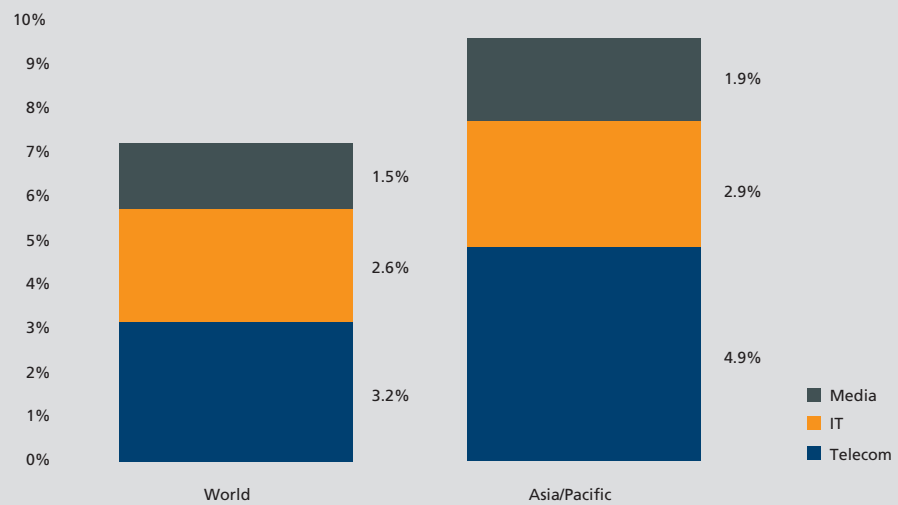
DigiWorld markets as % of GDP



Source: IDATE

as ICT plays a growing role in emerging economies

DigiWorld markets as % of GDP, 2007



Source: IDATE

Rise of the large emerging markets

ICT investments

ICT spending in OECD countries has risen by close to 5% a year, on average, since 2000, roughly one point below the worldwide average. Of course, emerging countries are enjoying a much more vibrant momentum, reporting increases in spending of around 14% a year over the same period. Within that set of nations, spending in the five largest markets –Brazil, Russia, India, China and South Africa, collectively called BRICS – has risen by more than 18%, and now accounts for 60% of ICT spending in emerging markets, and more than 10% of expenditures worldwide.

In developed economies, after the major setback that followed the burst of the tech bubble, business investments in ICT have been rising gradually. European markets appeared to have hit a plateau recently while, in the United States, the moratorium that lasted for most of 2006 was (momentarily?) ended with a sharp rise in spending starting in the autumn.

Market revival in the US

The financial situation of North American businesses, which is still good, along with a boost in competitiveness on the pricing front due to the weakness of the dollar, are two elements that are propping up the economy and the investment momentum. As a result, ICT spending (in value) in the United States in early 2007 exceeded its 2000 peak and is continuing on an upwards trajectory. Data for the end of 2007 reveal a market that is still enjoying clear growth, fuelled chiefly by businesses' software expenditures. If, in terms of value, corporate spending on computers in North America is still not back on par with 2000 levels, this is largely the result of a massive drop in prices (going from an index of 100 in 2000 to 30 in 2007, even factoring in the increase in 'quality'): computer sales have, in fact, tripled in volume over the past seven years! More generally, recent data on investment volumes suggest that ICT is weathering cutbacks by North American companies, at a time when spending on other types of equipment has begun to decline.

Spending in Europe hits a plateau

In the Eurozone, after reaching close to 3% in 2006, growth is moving more in line with its long-term potential of 2% annually. A mild slump in the housing market, which is nowhere near as dramatic as it is on the other side of the Atlantic, and the ongoing strength of the Euro – which is weighing on exports – are the two main contributors to this decline. After a sizeable climb in 2005 and 2006 (up more than 6% both years), telecom carriers' spending on infrastructure appears to have dropped again in 2007.

Meanwhile, in Japan, the lack of a real revival in consumer spending continues to impede steady growth, but the relatively weak Yen is giving exports a boost and allowing the country's largest corporations to maintain high profit levels and to prop up investments in production.

ICT: growth vectors in emerging economies

It is in emerging markets that ICT investments appear to be the steadiest, spurred by consumer demand and to a great extent by corporate spending. In China, for instance, ICT spending has risen by more than 20% annually over the past two years, well above the country's overall economic growth rate. Demand in emerging economies is also behind the revival of the semiconductor market since mid-2007.

ICT market spending, 2000-2008 (in current USD)

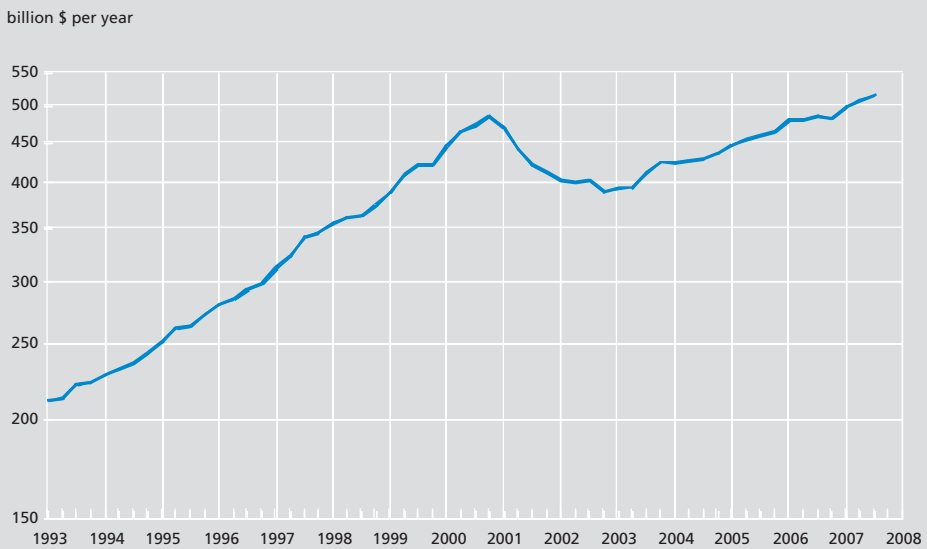
(year 2000 = 100 index)	2000	2001	2002	2003	2004	2005	2006	2007	2008
IT Equipment									
OECD countries	100	81.6	76.0	81.7	90.6	94.7	101.0	108.8	115.2
BRICS	100	120.9	142.4	193.2	269.5	338.8	403.0	466.8	552.3
Software									
OECD countries	100	104.7	107.9	124.6	142.5	154.4	167.4	185.0	204.3
BRICS	100	122.8	146.4	215.7	304.7	416.1	537.1	692.7	901.7
IT Services (OCDE)									
OECD countries	100	101.8	102.7	115.9	129.6	137.0	145.8	160.8	175.4
BRICS	100	108.9	128.5	195.6	273.3	377.4	486.0	621.6	811.5
Communications									
OECD countries	100	90.2	96.0	105.7	116.9	122.7	126.4	135.1	143.0
BRICS	100	98.8	110.6	131.4	159.0	187.4	208.2	223.6	241.2

BRICS: Brazil, Russia, India, China, South Africa

Source: *OECD*

ICT investments in US still rising

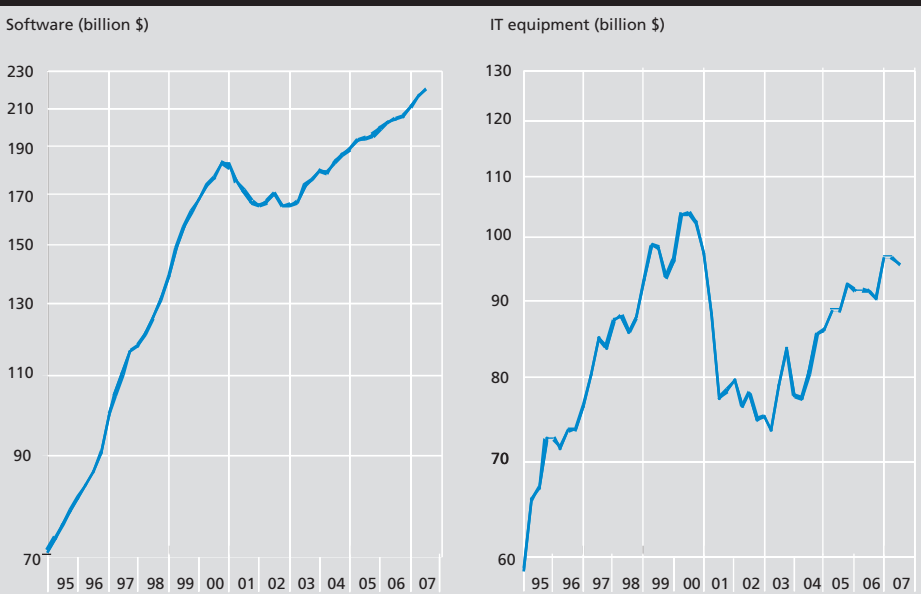
Annual growth of ICT investments by US companies



Source: Coe Rexecode

Software driving value increase in corporate IT spending

Corporate IT spending in the US, in value



Source: Coe Rexecode

China centre stage

ICT production

While still on an upwards swing, ICT hardware production in the United States has been slowing down considerably since mid-2006, going from an over 20% increase in volume, on average, to less than 10% in 12 months. But production growth in North America (which has doubled since 2000) is still exceeded by a large margin by South Korea which has more than tripled its production in seven years. Next in line, Japan, along with Sweden and Finland for Europe, are reporting more moderate growth (+30% to 40% in seven years) while France is only just maintaining 2000 production levels and the British industry is suffering a severe decline, with production levels in 2007 back to what they were in 1995 (-40% compared to 2000).

IT, the cornerstone of production in the United States …

The use of production capacities in the United States, which was hit hard by the dotcom debacle in 2001, has got back on track since then and has managed to maintain a level of close to 80% in recent years. If the rebound has been particularly significant for telecom equipment, whose utilisation of production capacity fell to 40% in 2002, production growth for computers over the period has been higher. Production volumes have as good as doubled since 2000, chiefly since 2004 in fact since production remained more or less stable during those first four years. On the other hand, telecom equipment production plummeted by 30% in two years before picking up again in late 2002 and, in 2007, exceeded 2000 levels by 30%.

On the flipside, with a volume that has more than tripled in seven years, it is telecom equipment production that is responsible for the stunning rise of South Korean industry. The impact of the bursting tech bubble was much more short-lived in that country and production has been on a virtually uninterrupted growth trajectory since 2001.

Over in Japan, computer production weathered the slump better than telecom equipment, but both are on the decline and it is the local components industry that is helping to sustain overall growth.

… as are telecoms for Europe

The situation in Europe displays more contrasts due to sizeable national disparities. On the whole, however, IT production is decreasing. Sweden and Finland, all the same, both report a healthy growth momentum for telecom equipment production (+40% since 2000) thanks to their respective national heavyweights, Ericsson and Nokia. As to France, its paltry performance in finished product production is being compensated by a strong semiconductor sector.

The inexorable rise of China

Regardless of how well some industrial markets are performing, all pale into insignificance when compared to the rising giant that China has become. Computer production has risen by 30 times in seven years, and potential for growth is still high given that it still accounts for only a fraction of global production (fewer than 15 million computers produced locally in 2007, out of the 250 million PCs sold worldwide during the year). As concerns trade, China now accounts for over 20% of communication hardware exports in the world, and for more than 25% of computer hardware shipments – a stunning rise from virtually zero at the start of the 1990s!

Major regions' share of ICT hardware exports

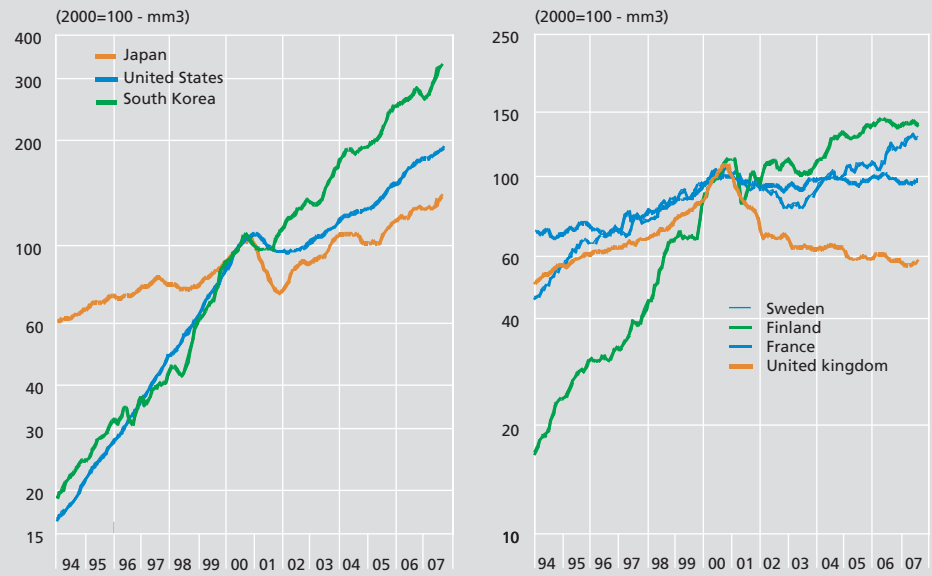
	Telecom equipment		IT equipment	
	1995	2005	1995	2005
USA	14.1%	5.3%	15.0%	6.8%
Japan	16.4%	5.7%	16.0%	5.8%
EU-15	36.2%	34.0%	31.7%	28.3%
China	3.8%	19.2%	2.7%	26.8%
Other Asia*	17.9%	21.4%	28.6%	24.3%
RoW	11.6%	14.4%	6.0%	8.0%

** Hong Kong, South Korea, Singapore, Taiwan, Thailand, Malaysia*

Source: *Cepii-Chelem*

Wide disparities in growth of ICT production growth by country

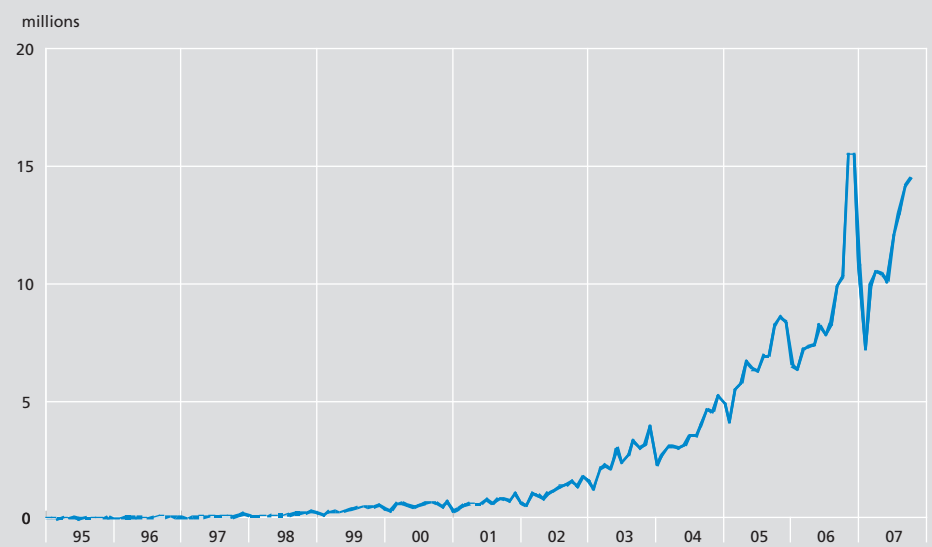
ICT industrial production



Source: Coe Rexecode

… and particularly high in China

Computer production growth in China



Source: Coe Rexecode

Clear decline in growth

DigiWorld markets in North America

North America represented 33% of the global ICT market in 2007 (the United States alone accounting for 30%). The North American ICT market is estimated at 899 billion EUR, more than 5% up from the year before. While growth in the consumer electronics, IT and telecom markets remains solid, the media sector's momentum has slowed significantly compared to 2006.

ICT growth had been sustained by the overall health of the North American economy up to 2006, with corporate profits and advantageous financing terms helping to fuel the IT market and CE hardware consumption. The current environment is much less rosy, however, and a clear decrease in growth is expected for 2007-2008.

R&D spending on ICT is particularly high in North America, involving sums that exceed the monies spent in Japan and the European Union combined. Since the start of the 21st century, public financing has been tending to increase its weight in the equation with private R&D spending being increasingly offshore.

Good performance for both software and CE

The United States continue to dominate the global software and IT services industry, with a market share of 40%. It is still a fragmented market but, following a massive wave of consolidations since 2003, a handful of titans are managing to be present on virtually all applications. Microsoft and IBM are going head to head on middleware and cross-platform applications while Oracle is one of the leaders in the business applications market. The situation in the IT hardware market has declined considerably since 2004-2005 when sales got a boost from businesses upgrading their old equipment. Meanwhile, the consumer electronics market reported over 8% growth again in 2007, following two years of over 10% increases.

Massive consolidation of the telecom services market

Growth in the American telecom services market, estimated at close to 5% in 2007, has been sustained by the expansion of mobile services, a little behind other industrialised countries and fuelled by an ever-growing subscriber base and by the development of data services. In 2007, mobile services accounted for 46% of the telecom services market (vs. 56% in Europe).

Cablecos are still the broadband market leaders, but telcos are increasing their market share with DSL (43% of Internet connections in the US) and, more recently, FTTx (1.6 million lines as of mid-2007). Having to contend with the steady decline of their traditional telephony revenue for several years now, and to a shrinking base of access lines, telcos haven been investing in fibre optic networks to be able to deliver IPTV and to compete with cablecos' triple play bundles.

A wave of major mergers and acquisitions since 2004 has profoundly altered the structure of the telecom services market in both the United States and Canada, which is now concentrated around two regional incumbent carriers: in the US, AT&T (ex-SBC) and Verizon are by far and away the market leaders, reporting a turnover in 2007 of 119 billion USD and 94 billion USD, respectively.

Setbacks in the TV market

With revenue that exceeded 110 billion EUR in 2007, the United States concentrate 40% of the globe's television market. Market growth since 2006 has declined sharply, due in large part to a sluggish advertising market on the top terrestrial networks which are still the industry's heavyweights, but getting stiff competition from Pay TV. Close to 90% of the nation's 125 million TV households subscribe to a Pay TV offer, and 70% to a digital service (chiefly via cable or satellite). Cable still dominates the TV landscape, having made its way into 60% of TV households in the US, but it is steadily losing ground to satellite (Dish and DirecTV). In addition to the partnerships negotiated with satellite Pay TV providers, the country's telcos are now positioning themselves more directly in the TV market with their triple play bundles delivered over broadband, although the adoption of TV over DSL is still marginal. The United States boasts tremendous expertise in the TV market which is being exported through the production of some of the world's most popular programmes, along with the export and creation of local versions of North American speciality channels around the globe. The country is also home to the world's most powerful media companies (including Time Warner, Viacom, Walt Disney, News Corp. and NBC Universal) and remains a pioneer in new television services.

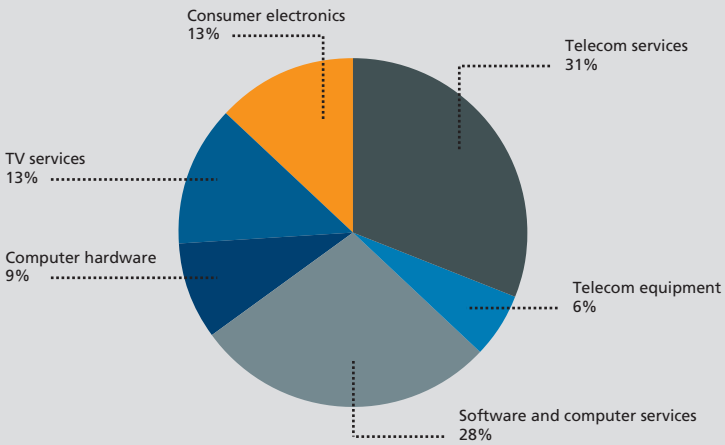
DigiWorld markets in North America

(billion €)	2004	2005	2006	2007	2008
Telecom services	236	246	253	265	281
Telecom equipment	46	50	51	54	56
Software and computer services	217	232	248	264	277
Computer hardware	82	85	88	90	89
TV services	96	101	109	111	116
Consumer electronics	83	96	106	114	121
Total	761	810	855	899	941

Source: IDATE

Balance between telecom and IT segments

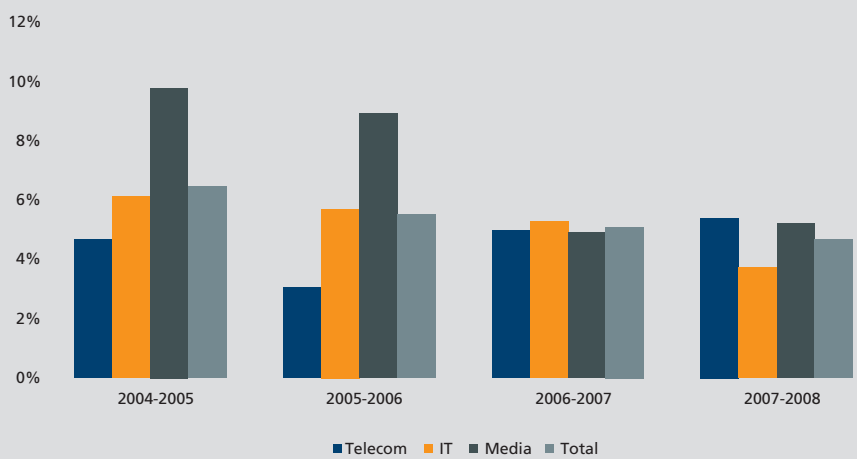
Breakdown of DigiWorld markets in North America, 2007



Source: IDATE

Similar growth across segments

Annual growth by segment in North America



Source: IDATE

Growth on hold once again?

DigiWorld markets in Europe

With an estimated value of 850 billion EUR in 2007, Europe's ICT market accounts for just over 30% of the world total. After a recession in 2001-2002, the market enjoyed an upswing that reached its peak in 2004. Growth since 2005 has tended to be on a downwards slide, due chiefly to ailing telecommunications markets – its value having increased by a modest 3.7% in 2007, compared to around 5% in 2006.

European ICT policies include pan-European initiatives, essentially from the European Union (in June 2005, the European Commission launched the i2010 initiative focused on digital convergence) along with a host of programmes rolled out at the national level and, more and more, at the regional level as well.

Dynamic IT services market

After suffering a setback in the early 2000s due to a bleak economic climate and weak stock market prices, the information technologies sector has been enjoying a rebound since 2004. In 2007, growth in the services and software markets – which account for 70% of the total IT market – nudged 7%. Growth in the hardware market is less impressive in terms of value (+3.1% in 2007) but more so when it comes to volume, and is reflective of the growing trend of users switching from desktop to laptop computers. The consumer electronics sector was reporting lesser growth 2007, albeit with sizeable variations from country to country.

Telecommunications: increased take-up and decreased growth in value

Growing competition and the high rate of take-up for telecom services has meant a sizeable drop in growth in terms of market value since 2002. As a result, growth for telecom services in Europe has gone from 10% in 2001 to 7% in 2004 and down to 3% in 2007 – despite which telecommunications are still a major driving force in the European ICT industry, by virtue of their weight in the equation (services account for 38% of the region's total ICT market, and 44% when factoring in equipment) and their influence on the convergence process.

Mobile telephony has reached saturation, even in several Eastern European countries (the average penetration rate in the region has topped 100% since 2006), which has naturally been weighing on growth prospects year after year. Data services nevertheless constitute a major growth outlet for cellcos, and currently account for 16% of mobile services revenue (19% for Western Europe).

In the fixed telephony sector, broadband continues to sustain the momentum. With 114 million subscribers at the end of 2007 (of which 94 million in Western Europe alone), this is a high potential sector that invites competition: beyond ADSL unbundling, the playing field is shifting to ultra-fast broadband and the development of broadband-based services (IP telephony, video over IP).

A fragmented TV economy

TV licensing fees still play an important part in the European television economy – accounting for close to a quarter of TV channels' income, all types of channel combined – with 48% of TV households still receiving their programmes over the terrestrial network only in 2007. Terrestrial reception is nevertheless losing ground swiftly to cable and especially to satellite which has achieved the digital switchover much more quickly than the other networks.

Telecom carriers have entered the television market with TV over DSL services which, although still marginal in terms of market share, are nevertheless enjoying considerable success in several countries, including France and Spain. Another major trend in the market is the solid progress of digital television, spurred chiefly by Pay TV and by satellite in particular: 30% of European households now receive a digital service. Digital terrestrial TV is poised to become a major growth outlet for the market, as has already been the case in the UK with further encouraging signs coming from the successful launch of (chiefly free-to-air) DTT packages in France, Spain and Italy.

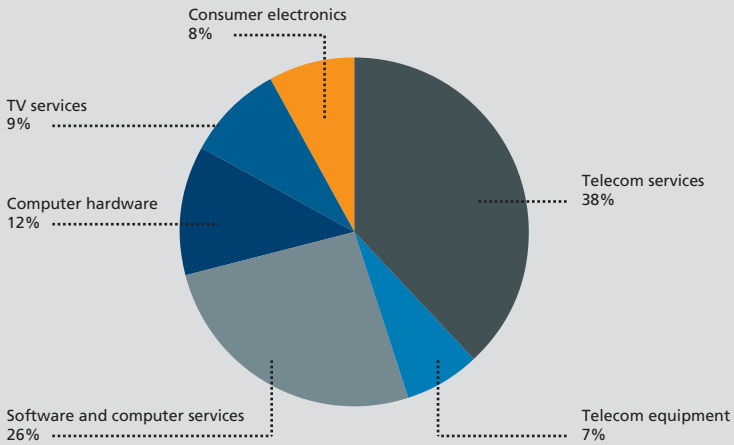
DigiWorld markets in Europe

(billion €)	2004	2005	2006	2007	2008
Telecom services	287	300	312	322	330
Telecom equipment	53	57	59	56	57
Software and computer services	189	198	210	225	239
Computer hardware	96	99	102	105	108
TV services	66	69	72	76	79
Consumer electronics	56	60	64	67	69
Total	746	783	819	850	882

Source: IDATE

Telecom market still driving growth…

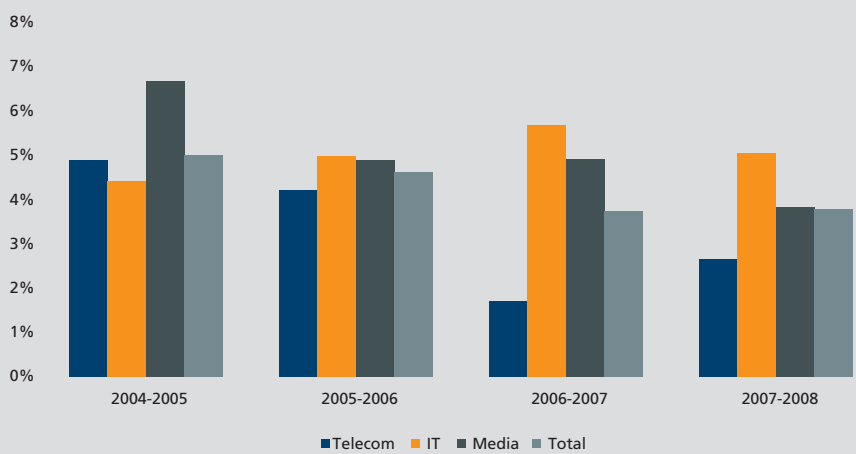
Breakdown of DigiWorld markets in Europe, 2007



Source: IDATE

… but growing slowly

Annual growth by segment in Europe



Source: IDATE

A region of contrasts

DigiWorld markets in Asia-Pacific

Even more than the disparities between the markets of Eastern and Western Europe, the Asia-Pacific region is marked by profound differences in the performance of its advanced markets (especially Japan and South Korea) and that of its emerging ones. Not only are these emerging markets helping to spur growth in the region, they are in fact major contributors to the market's growth worldwide. In 2007, Asia-Pacific accounted for 24.5% of the global market: a very slender increase! At the same time, however, Japan, which represents close to half of the region's market value, has lost a point. As to the regional growth momentum, the Japanese market has been growing at just over 1% a year, on average, whereas the rest of the region has been reporting annual growth of over 10% – single-handedly contributing a third of worldwide growth between 2003 and 2006.

Japanese and South Korean laboratories

Despite sluggish growth in its national market, in a number of ICT sectors Japan boasts a sizeable advantage over many other industrialised countries. In the area of telecommunications in particular, it is home to the world's largest 3G customer base, totalling over 60 million in mid-2007 or close to two-thirds of the country's total cellular user base. The same holds true for ultra-fast broadband, with the FTTB/FTTH rollout plan by NTT having already supplied more than 10 million households – or a third of Japan's broadband subscribers – with fibre optic access. Fibre is gradually edging out DSL which has been on the decline since 2006. From a more general perspective, the E-Japan programme, which launched in 2001, has helped step up the country's ICT development. And, finally, Japan is also the world's HDTV leader with high definition programmes on offer for several years now on the digital terrestrial, cable and satellite networks.

South Korea, too, boasts sizeable assets in several areas: it was long the global leader in broadband access before being rivalled by several European countries but, along with Japan, it remains a pioneer in ultra-fast broadband, having opted for the use FTTB/Ethernet LAN and VDSL. As to wireless access, WiBro, the home-grown version of WiMAX, has begun to be deployed as part of the 'Ubiquitous Korea' programme.

China and India driving growth

But it is in the region's emerging economies that we find the greatest source of growth for DigiWorld markets. China continues to equip itself at breakneck speed: in 2007, 80 million new mobile customers helped swell the base even further, and at an entirely unprecedented rate, while the country is also home to 13 million new broadband subscribers. China has reinforced its position as the world's largest cellular market (525 million subscribers) and is close on the heels of the United States in terms of broadband subscribers (65 million at the end of 2007). China is also a market of 260 million Pay TV subscribers. Chinese industry is developing largely around new technologies, with local companies now become major players on the world stage with their IT (Lenovo, Founder Group), telecommunications (Huawei, ZTE…) and consumer electronics products.

The healthy momentum of the Indian market is also making an increasing contribution to regional growth. ICT development in India is being spurred by IT services (software, call centres) and mobile telecom services (more than 70 million new cellular customers in 2007). This heady expansion is due in part to recent public initiatives to open up the economy: ICT growth in India had long been hampered by restrictions on foreign ownership and by a lack of infrastructure (roadways, electricity, telecommunications).

And, lastly, though not on par with these two giants, several other Asian countries (Vietnam, Indonesia, Philippines, Pakistan) are also contributing to the growth of DigiWorld markets in the region.

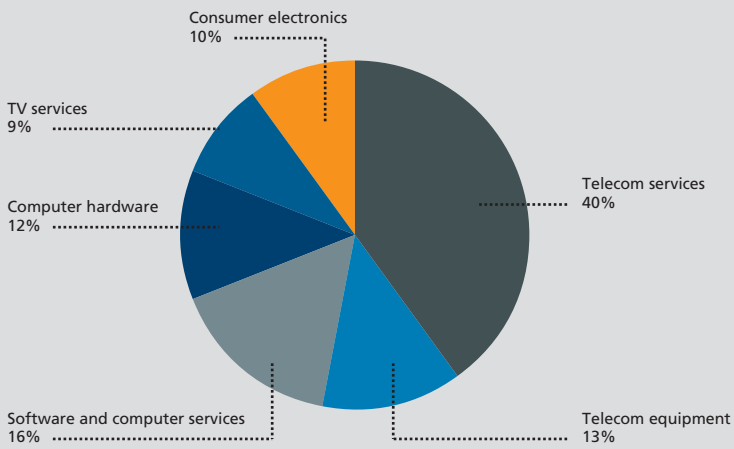
DigiWorld markets in Asia-Pacific

(billion €)	2004	2005	2006	2007	2008
Telecom services	225	237	254	272	294
Telecom equipment	73	77	84	88	90
Software and computer services	90	96	102	111	119
Computer hardware	65	69	73	77	82
TV services	49	53	56	59	62
Consumer electronics	52	57	62	66	69
Total	554	589	630	672	715

Source: IDATE

Equipment markets' maintain key role in equation

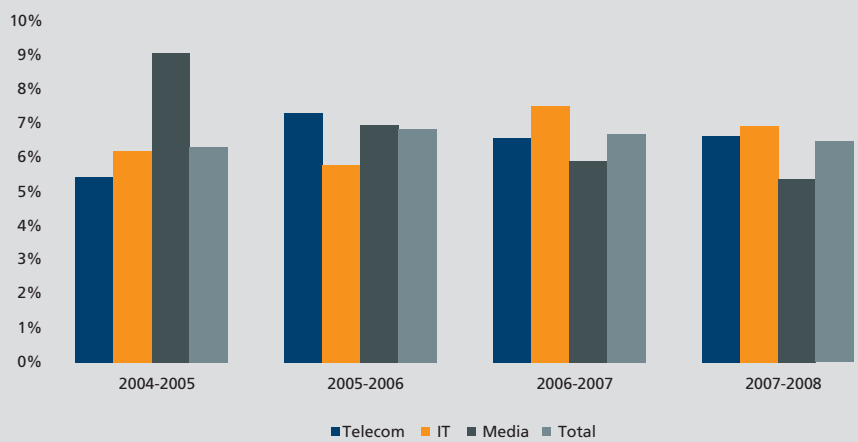
Breakdown of DigiWorld markets in Asia-Pacific, 2007



Source: IDATE

Very balanced growth

Annual growth by segment in Asia-Pacific



Source: IDATE

Significant progress in ICT take-up

DigiWorld markets in the rest of the world

With an estimated value of 329 billion EUR in 2007, DigiWorld markets in Latin America and in Africa-Middle East account for just over 12% of the world market, and are still very much on a growth trajectory, with an estimated rate of increase of 12% in 2007.

Solid growth in Latin America…

The financial crisis that hit Latin America in 2001-2002 has been weathered, and the market is back on track, particularly in the area of ICT. The regional market is dominated by Brazil and Mexico which, combined, account for close to two-thirds of total revenue. Digital services, and particularly IP-based ones, are making strides in both the business and residential segments. The rollout of new services is nevertheless being hampered by a lack of infrastructure in some cases and by the solvency of demand. As concerns telecom services, the continent is reporting over 60% teledensity and a fast growing broadband market, with a still relatively low average density of 6% at the end of 2007.

The region's leading players are being very proactive, with telcos introducing new generations of both fixed and mobile Internet access, while projects for switching to digital TV are gradually taking shape.

There is still great potential for growth, with access to telecom services, both telephony and broadband, being still well below the rates found in mature markets such as Western Europe and the United States, and still too low for households and businesses to take full advantage of the benefits of the digital age.

… sustained by public policies

Because of the current state of affairs, public policies aimed at reducing the digital divide appear key to instigating or enabling network rollouts and to encouraging consumer take-up of, and demand for new packages and technologies, particularly through the creation of public services online. Private operators also have a major role to play, as they are generally behind network rollouts and upgrades, and the launch of new services. So public authorities can leverage their power in several ways: subsidy policies for universal service funds, procedures for selling new licences, especially for wireless networks, and the launch of e-services (government, healthcare, education).

This is also a time of technological choices for moving to the next stage: digital terrestrial broadcasting standards and alternative telecom networks aimed at increasing access to telephony and broadband Internet services.

Africa-Middle East: disparate markets

Disparities in the Africa-Middle East zone are even more marked as the region is made up of several very distinct groups:

- a few mature markets (South Africa, Israel) where equipment levels are close to those found in major Western markets;
- the countries of Northern Africa (especially Morocco, Tunisia, Egypt) which have been engaged in reforms for over 10 years, making sizeable investments in ICT and home to relatively open markets;
- Persian Gulf nations whose DigiWorld markets have been expanding at an increasing pace since 2006, thanks to rising oil prices and the recent market liberalisation (new licence awards), and to operators that are now investing in other countries in the region;
- and, lastly, the countries of sub-Saharan Africa which are still the region's 'poor relations', with equipment levels that remain very low, albeit making good strides. In the mobile services market, the average density has doubled in two years, reaching close to 20% at the end of 2007.

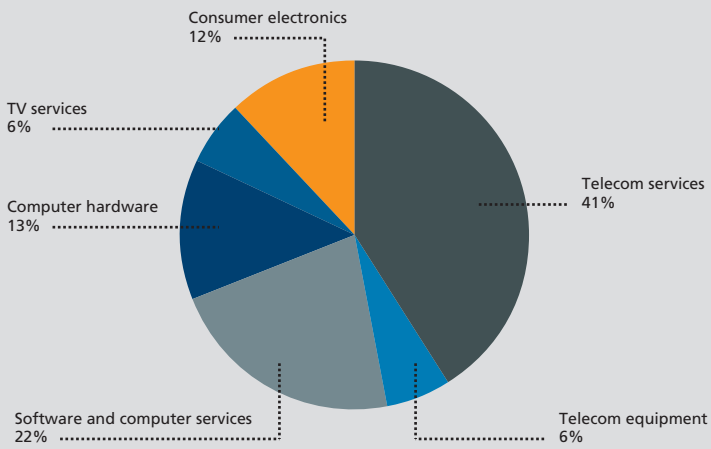
DigiWorld markets in Rest of World

(billion €)	2004	2005	2006	2007	2008
Telecom services	91	107	126	145	161
Telecom equipment	16	18	20	20	21
Software and computer services	46	50	56	61	65
Computer hardware	30	32	36	39	41
TV services	17	19	21	22	23
Consumer electronics	21	29	36	42	44
Total	221	256	293	329	356

Source: IDATE

Dominant weight of telecom services

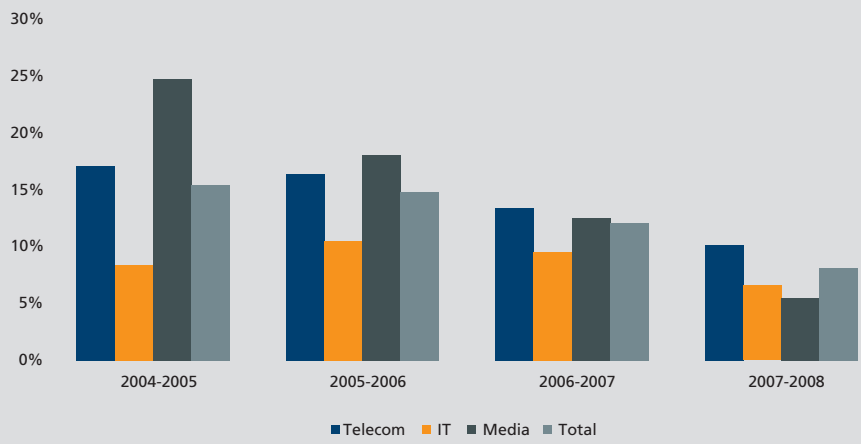
Breakdown of DigiWorld markets in Rest of World, 2007



Source: IDATE

Shrinking growth disparities

Annual growth by segment in Rest of World



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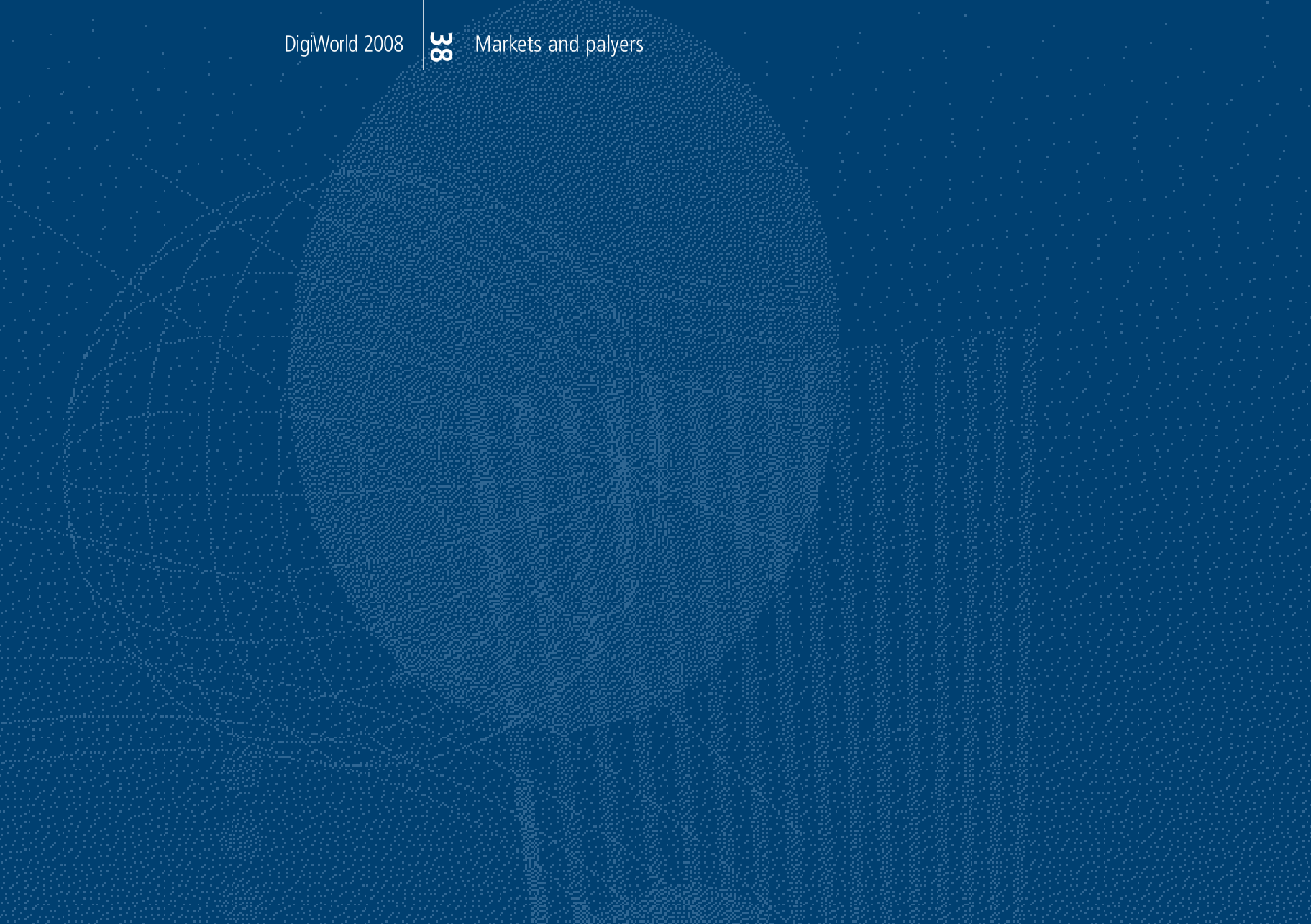


II Markets and players

Commoditisation, or the new law of gravity in the DigiWorld

The paradox of the moment: while growth in the DigiWorld in 2007 was down slightly as a whole, leaving the pre-2000 double-digit growth as yet to be equalled, another less high-tech sector has been making a much bigger contribution to increasing global wealth, namely raw materials. By reminding us of the possible virtues of the commodities market at a time of increased growth, this contrast helps to shed new light on the current momentum in DigiWorld markets.

Commoditisation is permeating DigiWorld

As has happened with the personal computer – the driving force of the IT industry in the 1990s – two other major DigiWorld sectors (telecom equipment and services) have entered the era of commoditisation.

While these sectors continue to contribute to the growth of the DigiWorld overall, it does so essentially through outlets in emerging markets (China, India, Russia, along with Latin America and Africa) which account for more than 75% of total growth in these two segments.

In most developed markets, on the other hand, the lasting decline in growth rates is symptomatic of this phenomenon of commoditisation. Saturation of the mobile market is either imminent (USA, the UK, France) or already a reality (Italy, Scandinavia). Added to this are exacerbated price wars – with the proliferation of high-volume and even unmetered fixed calling packages – and a stricter regulatory framework as applied to roaming and call termination. As a result, we are seeing negative growth for the first time ever in the mobile telephony segment in such major markets as Germany. In fixed markets, remaining pockets of growth for broadband are barely compensating the steady decline of fixed calling revenue caused by the technological disruption that is VoIP.

The same applies to the telecom network equipment market. Here the IP revolution shook up the balance of power – tilting it in favour of new entrants that have enjoyed stunning success (Cisco and, to a lesser degree, Chinese firms Huawei and ZTE) at a time when hardware prices were tumbling (due to a lack of differentiation) and value was shifting to the applications layers. At the same time, in a bid to turn the tide on shrinking prices and margins, 'veteran' equipment suppliers entered into an unprecedented phase of consolidation.

Commoditisation is gradually making its way to a sector that many thought immune, where we give praise to unending innovation. Yet the excitement surrounding the introduction of new, bleeding edge smartphones (and the iPhone in particular) cannot overshadow the realities of an industry that is replacement-driven in the West and where more than 60% of worldwide sales are already aimed at emerging markets. In consequence, the drive to renew the installed base with high 'iso-value' phones and the concurrent rise of low-cost phones compatible with prevailing purchasing power in these emerging markets are both increasing in scope and accelerating the decline of the average price of a handset, which now exceeds 10% a year.

Innovation-driven logic now dominated by inter-sector competition

Faced with this rampant erosion of prices, attempts at innovations that seek to rekindle a differentiation of the DigiWorld's flagship products and services are only having an impact on the very high-end market (luxury mobile phones and ultra-mobile laptops). Until now, they have done nothing to reverse the gravitational pull that is dragging down growth in the entire ICT market.

For a good many of the DigiWorld's major players, these attempts have been largely replaced by innovation strategies based on diversification – expanding their business into neighbouring segments. As with the transformation of IBM, the inventor of the PC which is

now a company dedicated entirely to IT services (facilities management, service pacts with Nokia), so consumer electronics and computer manufacturers are entering the mobile telephony market (Apple, Lenovo…), telcos are making TV services a strategic part of their development, and cablecos are providing voice call services. While not radically altering the competitive positions of established players (Nokia reported a record market share of 40% in 2007, despite it being the year of the iPhone), this effervescence is only adding greater pressure on prices in DigiWorld service and equipment segments, and further driving the commoditisation process.

Signs of a new world

It is by no means a foregone conclusion for an industry that is still very attached to the double-digit growth paradigm to explicitly accept the status of commodity. Looking beyond only mildly successful diversification strategies, we can see the first adumbration of a new landscape taking shape, in more recent trends in services which have been very slowly emerging.

In the area of mobile services, truly flat rate calling offers have become increasingly common in major markets such as the United States (for the top four cellcos), in Germany (with T-Mobile) and in France (Bouygues Telecom). Open mobile Internet access packages are taking over from the traditional walled garden, and are helping to stimulate consumer usage by offering virtually unlimited traffic and/or an increasingly broad array of Internet applications. Although far from being ubiquitous, these strategies are enjoying a considerable degree of commercial success and helping to underscore the growing propensity of operators to lean in favour of stimulating demand for flagship products (voice and connectivity), rather than to maximise the unit price based on the (illusory) claim of distinctive services.

This type of strategy is already well in place in the fixed services market, where the revenue generated by unlimited connectivity (to the PSTN and, increasingly, to broadband Internet) represent 80% of the market's value, whereas per-minute voice calls now account for only 20%.

Within this context, two key factors for success in a commodities market are beginning to materialise in the DigiWorld.

Much like commodities markets such as maize, whose price has been stable for 100 years but whose production sales in the United States have increased ten-fold during that same period (thanks to the incorporation of corn in a range of products, from cattle feed to soft drinks by way of cosmetics), the key to future growth in IT and telecom services markets lies in stimulating existing consumption (flat rate offers for telecoms, software-as-a-service for IT), and in multiplying the outlets (such as machine to machine applications).

The second key to success is to ensure ongoing and first-rate cost-based competitiveness (through specialisation, economies of scale and optimising capital expenditures) thanks to productivity gains. The wave of market restructuring created by mergers and acquisitions in the main segments, along with radical infrastructure outsourcing decisions (including H3G and E-Plus) and operational or structural separations (Telecom Italia, TeliaSonera…), are proof that DigiWorld cost structures are in the process of being revamped.

The hour of the Cornelian dilemma is approaching

In this era of growing commoditisation, the business and production models of DigiWorld players are in a state of flux. While consumer electronics and mobile telephony players are working to emulate the planetary success achieved by Apple with its iTunes/iPod combination, and reiterated with the iPhone by securing a portion of service revenue from operators, the network equipment manufacturers are continuing their for-

ays into the services market. It is, though, undoubtedly on the telco side of things that decisions will be more complex since they will have a greater impact on market structure. The market forces at work are leading inexorably to a Cornelian dilemma between providing enhanced connectivity (including associated features such as GPS and communication) and providing applications based on this connectivity. There is no right or wrong choice as both models will coexist, and the decision made by each operator will depend as much on its starting point as what it wants to be when it grows up: the maize grower, or the chef who uses maize in his tempting dishes.

Growth running out of steam

DigiWorld markets by sector

With average growth of 5.8%, for a global market of close to 2,750 billion EUR, the DigiWorld's growth momentum in 2007 was notably more sluggish than in the two previous years. Of particular note are the major gaps between the different segments, with a sizeable drop in growth in telecom equipment markets while consumer electronics continue to prop up the DigiWorld as a whole – even if they too are reporting lower sales than in 2005 and 2006.

The figures for 2007 also provide confirmation of the growing momentum in the services segment, with the notable exception of television.

Sizeable decrease for equipment markets

It is undoubtedly in the telecom equipment segment that the decline is the most dramatic, with growth rates falling below 2% in 2007, compared to 7% in 2005 and close to 6% in 2006. Computer hardware is showing moderate growth (+4.4% in 2007), while consumer electronics are reporting a sizeable decrease in growth (from +15% in 2005 to +8% in 2007) even though they are still performing better than all DigiWorld segments combined.

Beyond these separate diagnoses, all segments are having to contend with pressure on prices. The technological leaps that helped to buck the trend a few years back (such as migration from 2G to 3G mobile, and the switches to laptop PCs and to flat screen TVs) have now settled down by and large, and we shall have to wait for the next round of new generation technologies (4G, HDTV…) for sales to enjoy a comparable boost.

Services account for 75% of growth

Services account for just over 70% of DigiWorld market revenue and, more significantly, accounted for three-quarters of total growth in 2007, with telecom services single-handedly delivering 40% of the sum (59 billion EUR of a total 152 billion EUR). Software and IT services also have a sizeable share, in second place at almost 30% (44 billion EUR).

The more modest contribution from TV services (7%) can be put down not only to the size of the market but especially to an overall decline due to the sluggish growth of ad revenue.

Although subject to the same strong pressure on prices as hardware markets, the services segment is holding up better thanks to the exceptional volumes involved, and particularly to skyrocketing demand in emerging markets. To give an example, the number of mobile customers in the world rose from just under 2.7 billion at the start of 2007 to close to 3.2 billion by the end of the year: in the space of two years (end of 2005 to end of 2007), more than one billion new customers signed up for cellular services, a nearly 50% increase. Of this total, half of all new subscribers are located in the Asia-Pacific region, and 300 million in China and India alone!

NB: The data supplied here are end market figures for each sector and may contain certain double counts in the case of consumption in overlapping sectors. We have nonetheless eliminated the possibility of double counts as much as possible in cases where the scope of two sectors overlaps, such as mobile handsets and home computers were eliminated from CE markets and counted only in the telecom segment (mobiles) or the IT segment (computers). Furthermore, the data are based on consumption. For certain categories, disparities with production data may be significant in cases of very high volume international trade.

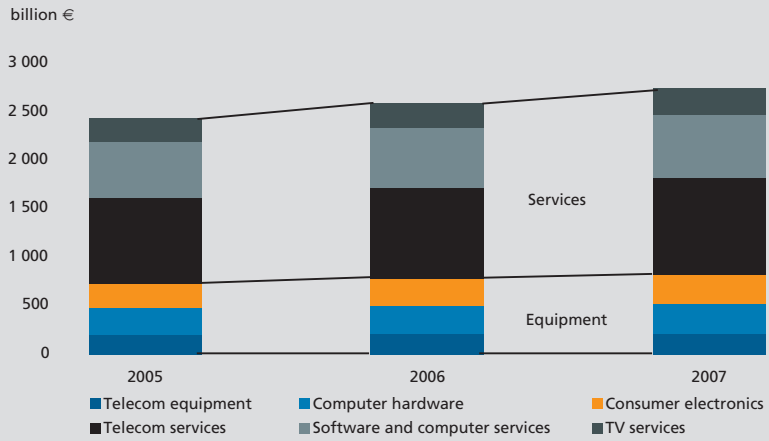
Global DigiWorld market by sector

(billion €)	2004	2005	2006	2007	2008	2011
Telecom services	839	889	945	1 004	1 065	1 242
Telecom equipment	188	202	214	218	225	232
Software and computer services	542	576	616	660	700	827
Computer hardware	274	286	298	311	320	355
TV services	228	243	258	268	281	322
Consumer electronics	212	242	267	288	303	331
Total	2 283	2 438	2 597	2 749	2 894	3 309

Source: IDATE

Revived growth momentum for services…

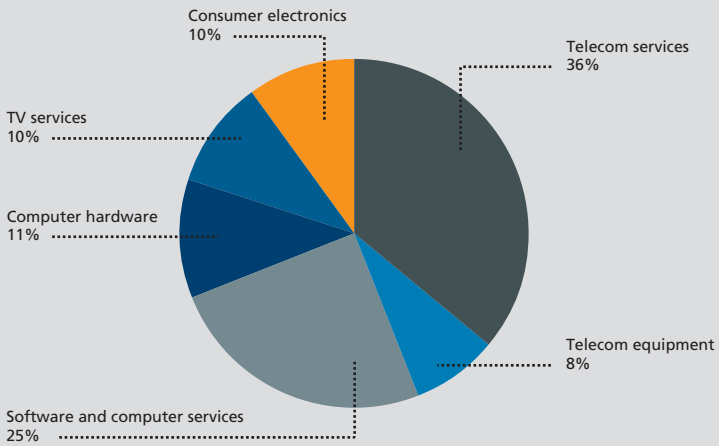
Global DigiWorld market growth by sector



Source: IDATE

… which still account for 70% of DigiWorld markets

Breakdown of global DigiWorld markets by sector, 2007



Source: IDATE

The search for new growth outlets

Telecom services

Worldwide growth driven largely by mobile broadband services

Over the last two years, the value of the global telecom services market has increased by over 6% annually (6.3% in 2006, 6.2% in 2007), and is estimated at 1,004 billion EUR in 2007.

Since 2006, more than half of the world's telecom services revenue has come from mobile services, a market that is estimated at 540 billion EUR in 2007, excluding equipment and interconnection, and responsible for 90% of the telecom services market's increase in value. Growth has been spurred to a large degree by the expansion of the customer base (+24% in 2006; close to 20% in 2007) which topped the two billion mark in 2005 and the three billion mark in 2007. At the same time, average revenue per user is shrinking, having fallen below 16 EUR a month in 2007.

The inexorable decline of fixed telephony continues, accelerated by the growing use of cellular phones and the spread of Voice over IP solutions, which has led to plummeting calling revenue for operators. The development of data services, starting with broadband access, is nevertheless helping to offset this dwindling revenue (a net decrease of 13 billion EUR for fixed telephony in 2007 versus a gain of 16 billion EUR for data and Internet services).

Developing markets account for 75% of growth in 2006 and 2007

Developing countries' share of the global telecom services market is rising dramatically, soaring from 20% in 2002 to 32% in 2007. In 2007, the telecom services market in developing countries grew by close to 40 billion EUR, accounting for 75% of growth worldwide. Growth for all emerging markets totalled around 10% annually for the past two years, compared to under 3%, on average, for industrialised nations as a whole.

Half of the telecom services market in developing economies is concentrated in five countries: China, Brazil, Mexico, India and Russia, with China alone accounting for close to a quarter. The progress being made by these markets is due to a very healthy mobile momentum, with emerging markets now home to 60% of the cellular user base. Rising Internet take-up is another factor, and China is now close on the heels of the United States in its number of broadband subscribers. Other countries also boast a fast-growing Internet market, including Brazil (8 million subscribers at the end of 2007) and India (7 million).

Mature markets highly innovative on the technical and marketing fronts

Innovation is still very much the byword, as much for fixed services where the growing ubiquity of IP has made it possible to deliver voice, data and video services over the same broadband connection, as in mobile services which are increasingly powerful and diversified as bitrates increase. The competitive landscape that is helping to spur these developments is also weighing on ARPU, but with the development of mobile data and Internet access services, per-user revenue in emerging mobile and Internet markets is tending to level off, or at least to decrease less dramatically. Alongside these technical innovations, operators are more and more battling it out over bundled and fixed-mobile convergence packages.

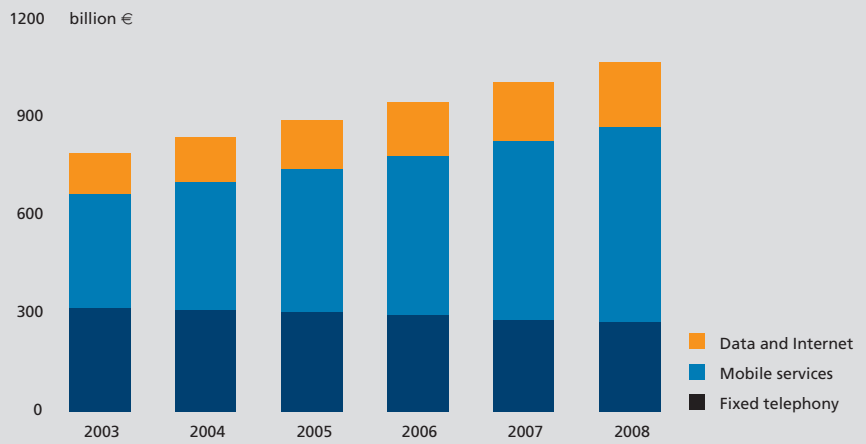
Global telecom services market, by region

(billion €)	2004	2005	2006	2007	2008	2011
North America	236	246	253	265	281	324
Europe	286	300	312	322	330	356
European Union	253	261	268	272	277	291
France	36	37	38	39	40	42
Germany	51	51	51	49	49	49
Italy	29	31	31	32	32	34
Spain	21	23	25	26	27	29
UK	44	45	46	47	47	49
Russia	11	13	17	19	20	25
Asia-Pacific	225	237	254	272	294	358
China	54	59	65	70	77	105
India	9	10	12	16	20	31
Japan	92	92	94	95	97	102
Latin America	57	66	75	83	92	120
Brazil	24	27	30	33	36	49
Africa and Middle East	34	41	51	62	69	83
Total	839	889	945	1 004	1 065	1 242

Source: IDATE

Markets

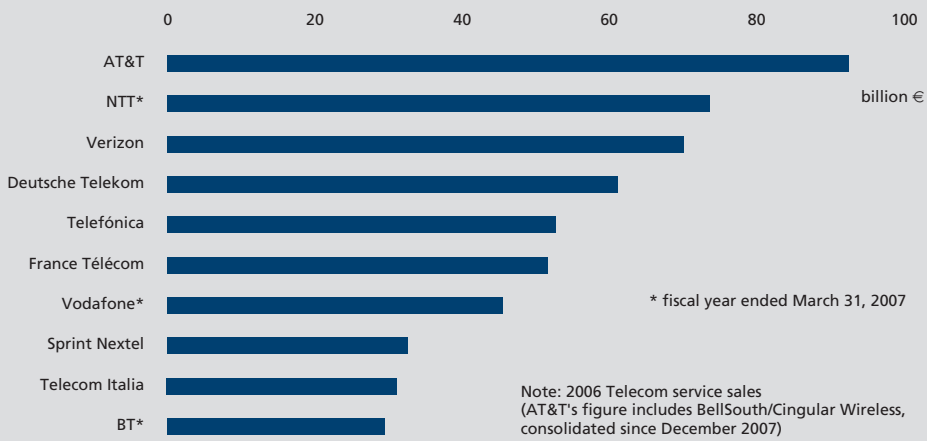
Breakdown of global telecom services market, by segment



Source: IDATE

Players

The top world telcos



Source: IDATE

The year after the Big Bang…

Telecom equipment

A new telecom equipment industry landscape emerged in 2006, following several major mergers. The primary consequence was a strong consolidation of the market, with the four major equipment suppliers now representing close to two-thirds of the world market (compared to less than half in 2004). The competitive dynamics also changed, with leading players achieving critical mass while Chinese equipment manufacturers improved their strong penetration in the market with massive revenue growth as shown by Huawei. Pressure is now on such players as Motorola, Nortel, and NEC which ail under this new market configuration.

Consolidation effect in carrier infrastructure markets

The mobile equipment segment had been the most impacted by consolidation. This market is now structured around a limited number of vendors with the three major ones accounting for around 70%.

On another side, the fixed equipment segment, which comprises sub-segments such as broadband access, optical transmission and IP routers, remained a fragmented market which was impacted less. Cisco and Alcatel-Lucent remain market leaders but have become seriously challenged by Chinese vendor Huawei, notably in broadband access and optical transmission equipment.

The growing role of infrastructure services

Infrastructure services were the most dynamic segment of the industry. All telecom infrastructure vendors saw a major growth opportunity in this market and more particularly in managed services.

For several years, Cisco has been the leader, mainly providing infrastructure services to enterprise customers. Regarding carriers, Ericsson has maintained its leadership leveraging its dominant position in mobile equipment.

Technological transition drives growth

Worldwide, 3G networks are ramping up at a strong pace. UMTS is continuing to gain traction as mature markets switch to 3.5G technologies such as HSDPA and HSUPA, while emerging countries begin to deploy UMTS networks to cover territories with mobile internet connection.

In the carrier fixed equipment market, broadband networks continue to be deployed worldwide with a strong focus on the transition from DSL to faster networks such as ADSL2+ and VDSL technologies. In the most developed countries, operators are pushing for the deployment of FTTx networks allowing access speeds up to 100 Mbps.

On both metro and core network equipment side, in a context of migration to IP-based technology and growing demand for very high broadband services, WDM equipment demand remains strong, as well as IP router and Carrier Ethernet switch sales as operators need greater bandwidth in order to support very high broadband access and services requiring large capacities.

Overall slowdown of operators investments in recent past

Worldwide investment expenditure by telecom operators (except cable operators) continued to increase over the past two years, but at a lower level than 2005 (+7.5%). This growth was mainly driven by the momentum from mobile operators.

2007 has mimicked 2006 trends. In the fixed market, operators continued to invest in the broadband network access, so as to offer more triple play services. On the mobile side, investments grew slowly in expanding and modernising their current infrastructure. In emerging countries in the Asia-Pacific and Africa-Middle East regions, however, there are still huge opportunities to develop mobile infrastructure.

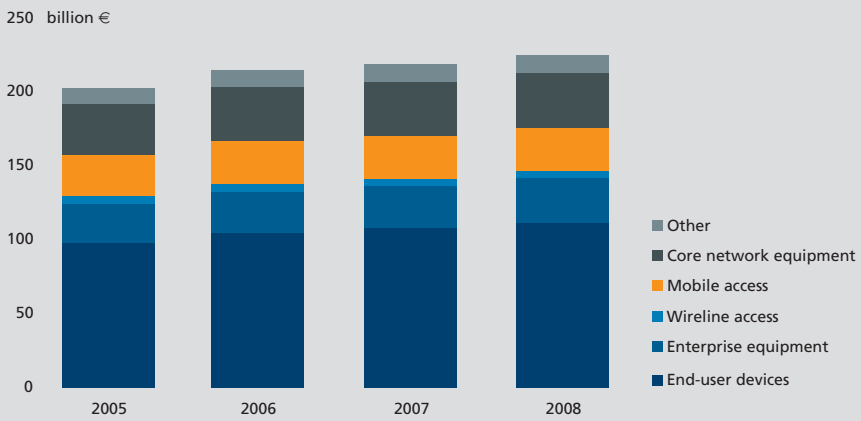
Global telecom equipment market, by region

(billion €)	2004	2005	2006	2007	2008	2011
North America	46	50	51	54	56	64
Europe	53	57	59	56	57	60
France	6	6	6	6	6	7
Germany	7	8	8	8	8	8
Italy	6	6	7	6	6	6
Spain	4	4	5	4	4	4
United Kingdom	9	9	9	9	9	9
Asia-Pacific	73	77	84	88	90	86
China	21	21	23	24	23	23
India	5	7	10	12	15	17
Japan	24	25	26	25	24	22
Latin America	10	11	12	12	13	13
Africa and Middle East	6	7	8	8	8	9
Total	188	202	214	218	225	232

Source: IDATE

Markets

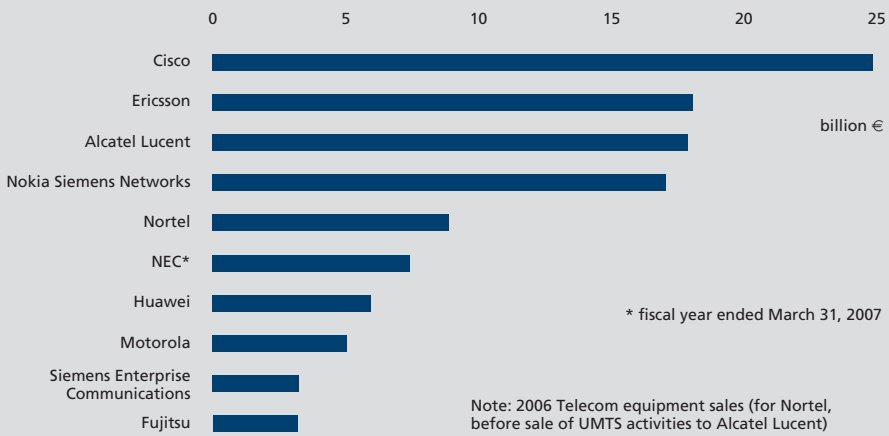
Growth of the global telecom equipment market by segment



Source: IDATE

Players

The top world telecom infrastructure suppliers



Source: IDATE

Steady growth

Software and IT services

2007 was as good a year for the global software and IT services market as 2006 had been, reporting growth of just over 7% and higher still for the software market alone, except in Europe where it is the services market that is enjoying a stronger momentum.
From a regional perspective, growth in Europe was on the rise but down slightly in North America. And, again, it is emerging markets that are enjoying the strongest growth, with the Chinese market alone reporting close to 20% annual growth even though it represents only 1% of the global market. Software and IT services also constitute the ICT industry sector most concentrated in industrialised regions, with emerging markets accounting for only 15% of the global market, and half of that output is consumed in Latin America. India, of course, is one of the sector's leading producer countries.

A market of knowledge-based services, on the path to maturity

Information technologies have matured over the past few years. The cornerstones of IT strategies now include the alignment of a company's IT and corporate strategy, IT governance, IT innovation management, IT risk management, IT purchasing, IT compliance… Businesses that want to master these elements need help from IT consultancies, which explains the growth of the services market in Europe in 2007.
Another trend in the market is the increasing use of flat rate services, to the detriment of cost-type contracts, as businesses work to streamline their IT services budgets.

Revised outsourcing strategies

On the whole, after a phase during which outsourcing 'unresolved problems' was often central to the decision-making process, customers are now reconsidering their outsourcing strategies. This could lead to increased insourcing or more selective outsourcing, and to a task-oriented segmentation of contracts to replace global outsourcing. The ERP market's revival is likely to lead to increased demand for application management, with services related to CRM, HRM and others also helping to spur growth.
Software-as-a-Service (SaaS) is a particularly appealing solution for the SME market which boasts considerable growth potential. SaaS is also another step towards on-demand computing which a great many outsourcers are now pursuing.

Software market revival

Infrastructure software is still the segment making the smallest contribution to software sales growth in Europe. This is due above all to the ever-increasing availability of products and the ensuing drops in price. Meanwhile, the operating system (OS) segment is still highly concentrated, with Microsoft enjoying continued dominance of a mature market thanks to its control over the workstation environment.
The security market is enjoying very solid growth, with increasingly complex solutions capable of responding to a vast array of threats. The growing use of the Internet, of Web services and of their applications has profoundly altered the nature of the threats, as well as consumers' perceptions of them.
Meanwhile, growth in the database market is suffering from pressure on prices and competition from open source products. Proprietary database suppliers are currently working to revive the market by integrating new features such as capacity management, access control and security tools.
Finally, on the applications side of things, service-oriented architectures (SOA) will provide a blend of packaged software and dedicated developments, while integrating the various components of desktop software, business applications and other solutions.

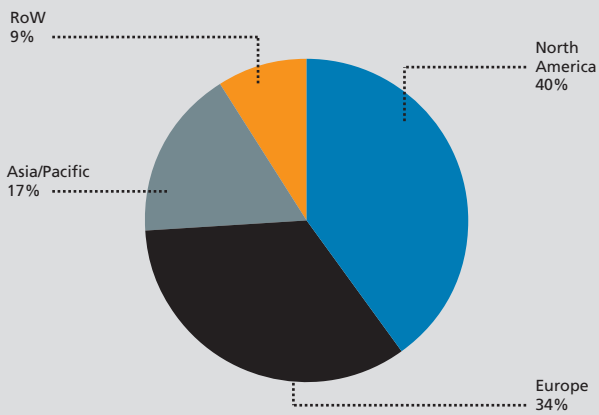
Global IT services and software markets

(billion €)	2004	2005	2006	2007	2008	2011
North America	217	232	248	264	277	323
Europe	189	198	210	225	239	281
France	27	29	30	32	34	40
Germany	38	40	42	45	48	56
Italy	13	14	14	15	15	16
Spain	8	9	10	10	11	13
United Kingdom	45	48	51	54	57	66
Asia-Pacific	90	96	102	111	119	144
China	4	5	6	7	8	12
Japan	53	55	57	60	63	73
Latin America	38	42	47	51	54	65
Africa and Middle East	7	8	9	10	11	14
Total	542	576	616	660	700	827

Source: *PAC*

Regional breakdown of IT services and software markets

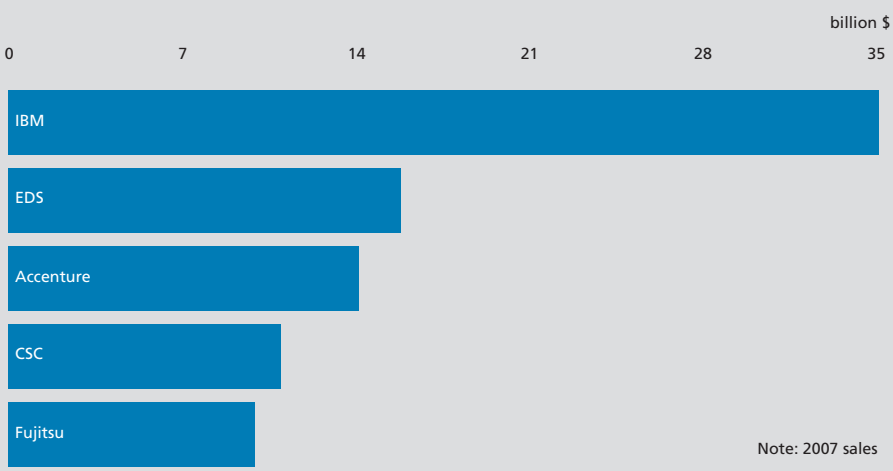
in 2007



Source: PAC

Players

The top world IT services companies



Source: PAC

A modest revival

IT hardware

Up slightly compared to 2006, the global IT equipment market grew by 4.4% in 2007, spurred chiefly by emerging markets which now account for close to 25% of sales. European and especially North American markets are much less dynamic, reporting annual growth of 2% to 3% although, in terms of volume, they are enjoying a much healthier momentum.

More than 260 million PCs sold worldwide in 2007

Personal computer sales are increasing at a rate of over 10% annually, rising from 235 million units worldwide in 2006, to 264 million in 2007 and expected to reach 293 million this year, according to Gartner. Between two major equipment replacement cycles in the business world (the last one dates back to 2004-2005 in the United States then in Europe, with the next one expected to start in late 2008), the market in industrialised countries is currently being buoyed up by the increasing switch to laptop computers. On the whole, demand for computers is still high in Europe, sustained by the price war between the top PC manufacturers vying for market share. A very small share of this demand can be attributed to the release of Windows Vista in early 2007.

The momentum is stronger still in emerging markets which now account for over 50% of PC sales on the planet.

Overall, though, the chillier economic climate in the United States and the possible downturn in the Chinese economy, combined with rising oil prices, are expected to weigh on the market in the relatively short term.

Moderate growth in server sales

Personal computers account for close to half the IT hardware market, with the remaining half going to servers and peripherals. Growth in the server market is slightly below the sector's average. As with PCs, the volume increase outweighs growth in terms of value, with 8.8 million servers sold around the world in 2007, or 7.4% more than in 2006. While HP and Dell are the globe's two largest suppliers in terms of units shipped, IBM still enjoys top spot when it comes to the value of the sales due to the higher average price tag of their machines (though still well below the market's number four player, Sun). IBM's lead is tending, however, to shrink as its two main rivals report much healthier increases in their server revenue (+8.8% for HP and +13.2% for Dell compared to only +0.8% for IBM). Though still accounting for only 7% of sales, blade servers are steadily forging themselves a foothold in the market.

Disparate growth rates for peripherals

In the peripherals segment we find stark contrasts between a very sluggish printer market and a very dynamic external hard drive segment. Whereas printer sales far outnumbered computer sales in 2003, thanks to bundled PC + printer packages along with the popularity of all-in-one machines (printer + scanner + photocopier), volume growth for printer sales dropped to 3% in 2007. The external hard drive market, on the other hand, reported a rise in value of close to 7%, with sales of storage capacity that have increased by more than 50%!

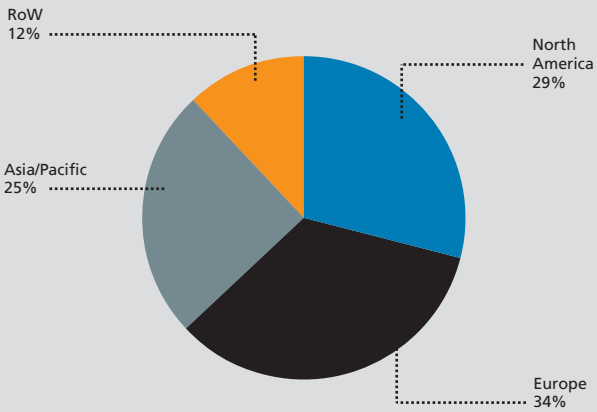
Global IT equipment markets

(billion €)	2004	2005	2006	2007	2008	2011
North America	82	85	88	90	89	93
Europe	96	99	102	105	108	117
France	14	15	15	15	15	15
Germany	19	19	19	19	19	19
Italy	6	7	7	7	7	8
Spain	6	6	6	7	7	9
United Kingdom	17	17	17	17	17	17
Asia-Pacific	65	69	73	77	82	95
China	10	12	13	15	17	23
Japan	30	31	30	31	31	32
Latin America	22	24	26	28	30	35
Africa and Middle East	8	8	9	11	12	16
Total	274	286	298	311	320	355

Source: *PAC*

Regional breakdown of IT equipment markets

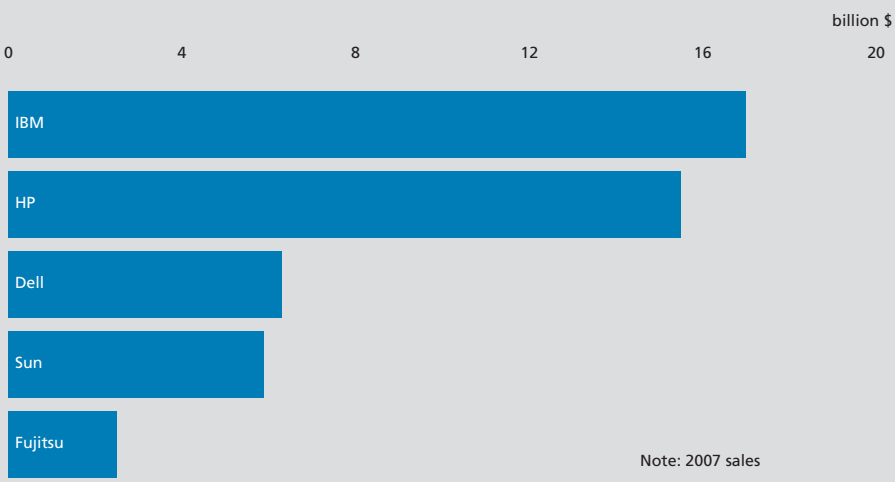
in 2007



Source: PAC

American firms still at the helm

The top world server suppliers



Source: PAC

Growth slowdown after rebound

TV services

In 2007, the total value of the worldwide market for television services was estimated at 268 billion EUR. However, growth should experience a slight slowdown. Growth was estimated to be about 3.8%, compared to 5.8% in 2006. This level of growth follows several difficult years, with the height of the crisis coming in 2001/2002.

The slowdown in 2007 has primarily resulted in pressure on advertising revenue, essentially in the most advanced markets, such as the United States, and some European countries, such as the United Kingdom.

Generally, the three primary markets worldwide, the United States, Europe and Japan, remain heavily dominant, representing between them 78% of worldwide TV revenue. However, combined, they continue to lose 1% to 2% of worldwide market share per year.

Subscription television revenue recorded the highest growth rates, but advertising still remains the main source of revenue for the TV sector worldwide.

Reception still dominated by terrestrial…

According to IDATE's estimates, 1.1 billion households have a television set, with 53% in the Asia-Pacific region. Terrestrial television reception represents 47% of TV households, constantly dropping, ahead of cable (34%), particularly advanced in China, India and the United States, and satellite (17%), whose market share is growing the fastest. On a worldwide basis, the impact of television over ADSL remains small (barely 1%).

… while subscription television continues to grow

The worldwide market for subscription television represented nearly 495 million households in 2007. Cable remains the primary media for multi-channel packages across the world, especially in Asia, but also in other regions to varying degrees. Satellite seems to have more momentum, both in terms of growth in the number of subscribers and in the area of digital TV services distribution. The number of satellite TV service subscribers continues to grow more rapidly than cable subscribers.

21% of TV households receive digital television

Digital television is found primarily in TV households in the largest markets: the United States, Western Europe, and Japan. The growth of digital TV on a global scale is increasing however, with a penetration rate for services growing three points in 2007, reaching 21% of TV households.

For some countries, in particular the United Kingdom and the United States, the conversion to digital is a relatively short-term objective.

As the most promising driving force behind the rise of digital, satellite continues to move into the least advanced countries, whilst the world's two largest markets in terms of TV households, namely India and China, are still lagging behind in their attempts to digitise their gigantic cable networks.

Industrial structure

The ranking of the world top TV companies reveals:

- the weight of the North American companies, which hold the first ten spots in the ranking (due mostly to the size of their home market)
- the weight of public TV services, whether Japanese or from the major European countries, which compete in size with their private competitors, sometimes even overtaking them.

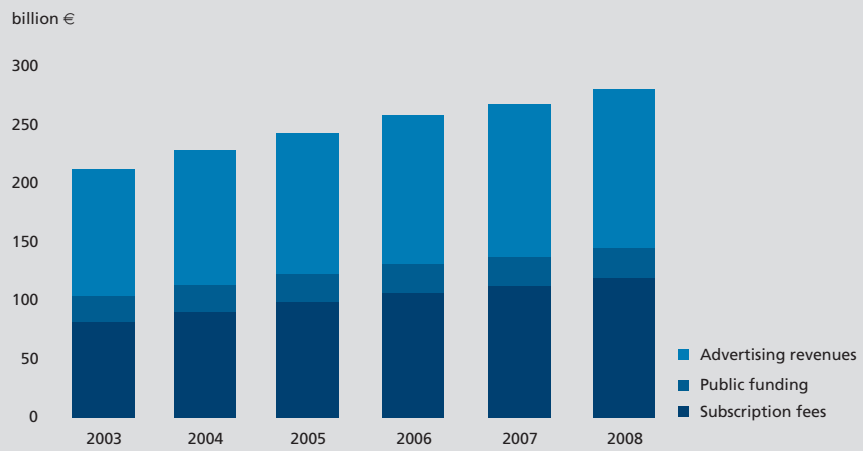
Global TV services market

(billion €)	2004	2005	2006	2007	2008	2011
North America	96	101	109	111	116	131
Europe	66	69	72	76	79	90
France	9	9	10	10	11	12
Germany	12	13	13	13	14	14
Italy	8	8	9	10	10	12
Spain	5	5	6	6	7	8
United Kingdom	15	16	16	16	17	18
Poland	3	3	3	3	3	4
Asia-Pacific	49	53	56	59	62	74
China	6	7	7	8	9	11
India	3	4	4	5	5	7
Japan	27	28	27	29	30	35
Latin America	13	15	16	16	17	20
Brazil	5	5	6	6	7	8
Mexico	3	3	4	4	4	4
Africa and Middle East	4	5	5	6	6	7
Total	228	243	258	268	281	322

Source: IDATE

Markets

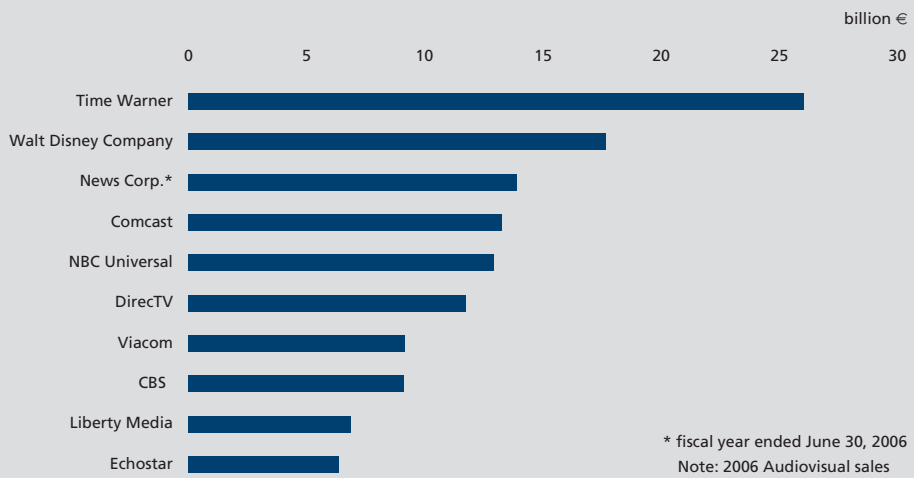
Growth of the global TV services market by segment



Source: IDATE

Players

The world's top media companies



Source: IDATE

Still room for growth

Consumer electronics

Still having to contend with declining growth since reaching its peak in 2004-2005, the global consumer electronics (CE) market remains nevertheless one of the most dynamic ICT segments.

Over 5% growth worldwide

Growth in the United States was just over 8% in 2007; in Europe it is still hovering above 5% while the momentum in Asian markets continues to be fuelled by the popularity of high tech devices in the more mature markets, and by tremendous demand for equipment in emerging economies. On the whole, all of the world's emerging CE markets (Latin America, Middle East…) still have considerable room for growth.

The shift in the best selling product lines is translating into increased pressure on price. As a result, in Western Europe, sales for high-end televisions (plasma, LCD, projector) rose by 50% in terms of volume but by only 15% in value. In the digital camera segment (including camcorders), despite a 5% increase in unit sales, the market's value has dipped slightly.

Flat screen TVs still driving the market's momentum

The three pillars of the consumer electronics market in 2007 were the same as in the two previous years with flat screen televisions still leading the way. Close to 100 million flat screen TVs were sold worldwide in 2007 (of a total 210 million sets sold during the year), or virtually twice as many as the year before: LCD screens accounted for close to 80% of these sales, and are expected to remain supreme in the medium term. In both Western Europe and the United States, digital TVs have been outselling analogue sets since 2006, as the latter are quickly becoming extinct.

While DVD player sales have been on a downwards slide in most regions around the world (since 2003 in Japan, and since 2005 in North America and Europe), two phenomena are compensating for the decline: first rising sales for DVD recorders which, although selling in much more modest quantities (16 million recorders sold in 2006, compared to 125 million players), carry a higher price tag and, second, the onset of HD-compatible equipment sales which are expected to pick up now that Blu-Ray has prevailed over HD DVD. Close to five million high definition players were sold in the US in 2007, with forecasts indicating unit sales of 32 million in 2011.

MP3 players are still wildly popular: 182 million units sold worldwide in 2006 a figure which, when combined with portable media players (PMP), could reach 275 million in 2011.

GPS devices gaining ground

The GPS device market is also enjoying a healthy momentum: from 14 million units sold in 2006, the global market doubled in 2007 and, thanks to systems embedded in mobile phones, could reach 500 million by 2015 – with GPS phones expected to become the biggest sellers starting in 2008.

Another trend that is shaping the CE market's evolution is the swift growth of online sales. In the United States, online consumer electronics product sales went from 5% in 2005 to 14% in 2007, and consumers are more and more likely to do some comparison shopping online before making a purchase in a shop.

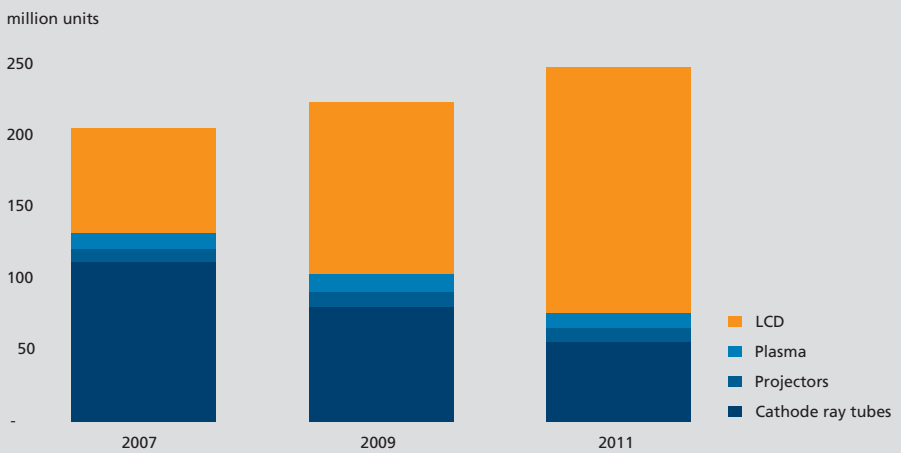
CE product penetration rates in US households

		Jan. 2005	Jan. 2006	Jan. 2007
Video	Digital TV	12%	20%	33%
	LCD TV	17%	22%	27%
	DVD player	75%	82%	83%
	Satellite dish system	25%	25%	25%
	Camcorder	45%	46%	48%
Communication	PC	70%	75%	82%
	Digital still camera	42%	55%	59%
	Modem	68%	75%	78%
Audio	Home CD player	57%	55%	54%
	Home theater	33%	36%	36%
	MP3 player	14%	28%	33%

Source: CEA

Flat screens becoming the norm

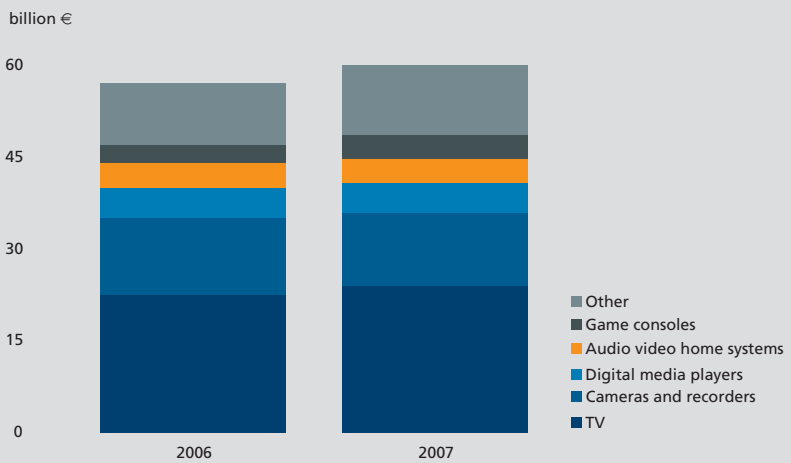
Global TV set market



Source: iSupply

TV sets account for 40% of the CE market

The CE market in Western Europe



Source: GfK

The Internet giants

Bursting onto the scene some ten years ago (with the exception of Microsoft), the Internet giants still only account for a fraction of the telecom and media servcies market: generating revenue in the tens of billions of EUR worldwide in a global market of close to 2,000 billion EUR.

Innovative flagship services spurred by the Internet giants…

A handful of online services have achieved very high take-up levels (Webmail, IM, search engines, browsing, e-commerce, practical services).

Aside from peer-to-peer systems, almost all of these services are controlled by the Internet giants, and generally only a few major players per service and geographical zone. Google dominates the search engine, MSN/Windows Live dominates instant messaging and eBay online auctions. The quasi-ubiquitous Yahoo!, as well as being the most internationalised player, is particularly strong in the area of Webmail, content and news portals. Using the same service models, local players can challenge this domination – AOL has done so in the US – and can even become local market leaders themselves, with such cases in point as Naver and Nate/Cyworld in South Korea, and Sina, Sohu, Baidu, Alibaba and QQ in China.

To maintain their leadership over these services, and to build their audience and/or traffic, the Web's top players continue to innovate. While some innovations are relatively minor (new interface, improving existing tools), others are truly groundbreaking, such as aerial and/or 3D map viewing systems. In all cases, it is the Internet giants that spur and dictate the pace of technological innovation.

… and remains key to the whole industry's development

Already highly innovative with their flagship services, the Internet's heavyweights (Google, Yahoo!, Microsoft, eBay…) are developing a range of tactics that combine models borrowed from IT (opening up to developers) and mass media (aggregation, diversification, acquisitions…) to increase their edge in the race for audience and traffic through technological ingenuity.

The most recent wave of innovations, embodied by Web 2.0, is focused largely on the Web's social nature of sharing and community. Web 2.0 has also given birth to several major new players (MySpace, YouTube, Facebook...); they could undermine veteran players who are still little involved or poorly positioned on the social Web, and thus shake up the whole balance of the Internet industry.

The battle of the Internet giants being fought chiefly on the advertising front

The online advertising market is undergoing a complete transformation as it integrates the whole of the value chain (media management and services).

To better serve advertisers, at a time of global consolidation of the advertising industry, the Internet giants have made several major acquisitions (Google/ DoubleClick, Microsoft/aQuantive and ScreenTonic, Yahoo!/RightMedia…) in a bid to create multi-platform, multi-format ad management units, affording them both above and below the line presence.

This drive for diversification is affecting the service industry, creating traffic specialists for audience-based services via acquisitions (Blogger, YouTube) and strategic, but not profit-generating partnerships (Google/ MySpace), as the players battle it out for control of solvent inventory.

The priority then is not the new and Web 2.0 services but rather Advertising 2.0, reinvented with the development of video and mobile. Google's sponsored link model still has bright days ahead, but needs to be rethought to incorporate new formats that require a greater degree of ad creation. They are in fact better suited to major advertisers' sponsorship and to click-to-call voice services.

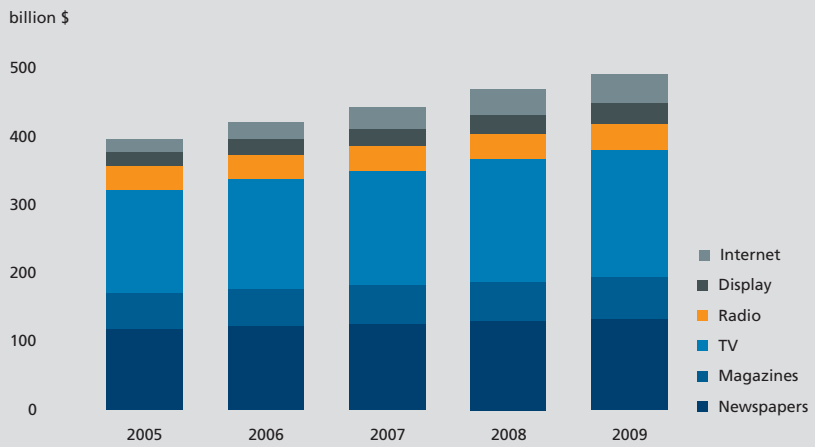
Positioning of Internet giants on e-commerce

Player	Offer strategy
AOL	Basic offer of a virtual shopping mall
eBay	Number one in the world for C2C e-commerce, development of B2C intermediary services, acquisition of StubHub e-commerce sites
Google	Little developed C2C service (Google Base)
Microsoft	Basic offer of a virtual shopping mall, development of C2C services (Expo)
Yahoo!	Basic offer of a virtual shopping mall
MySpace	No offer

Source: IDATE

Tremendous rise in online advertising spending

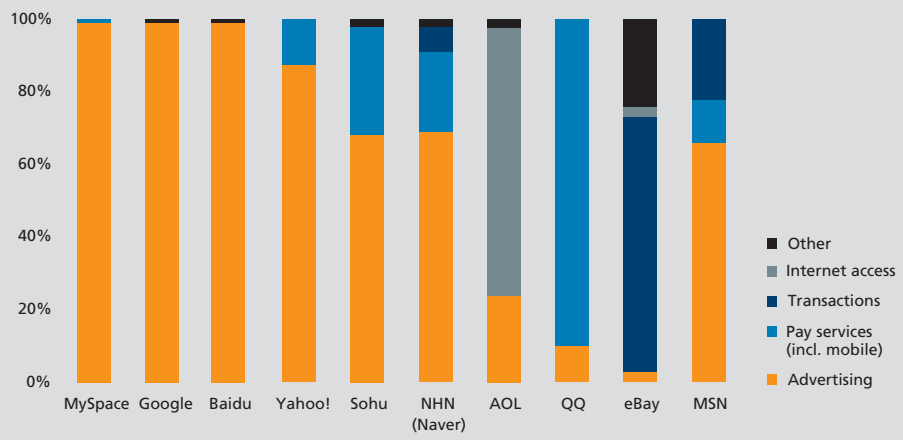
Global ad spending by medium



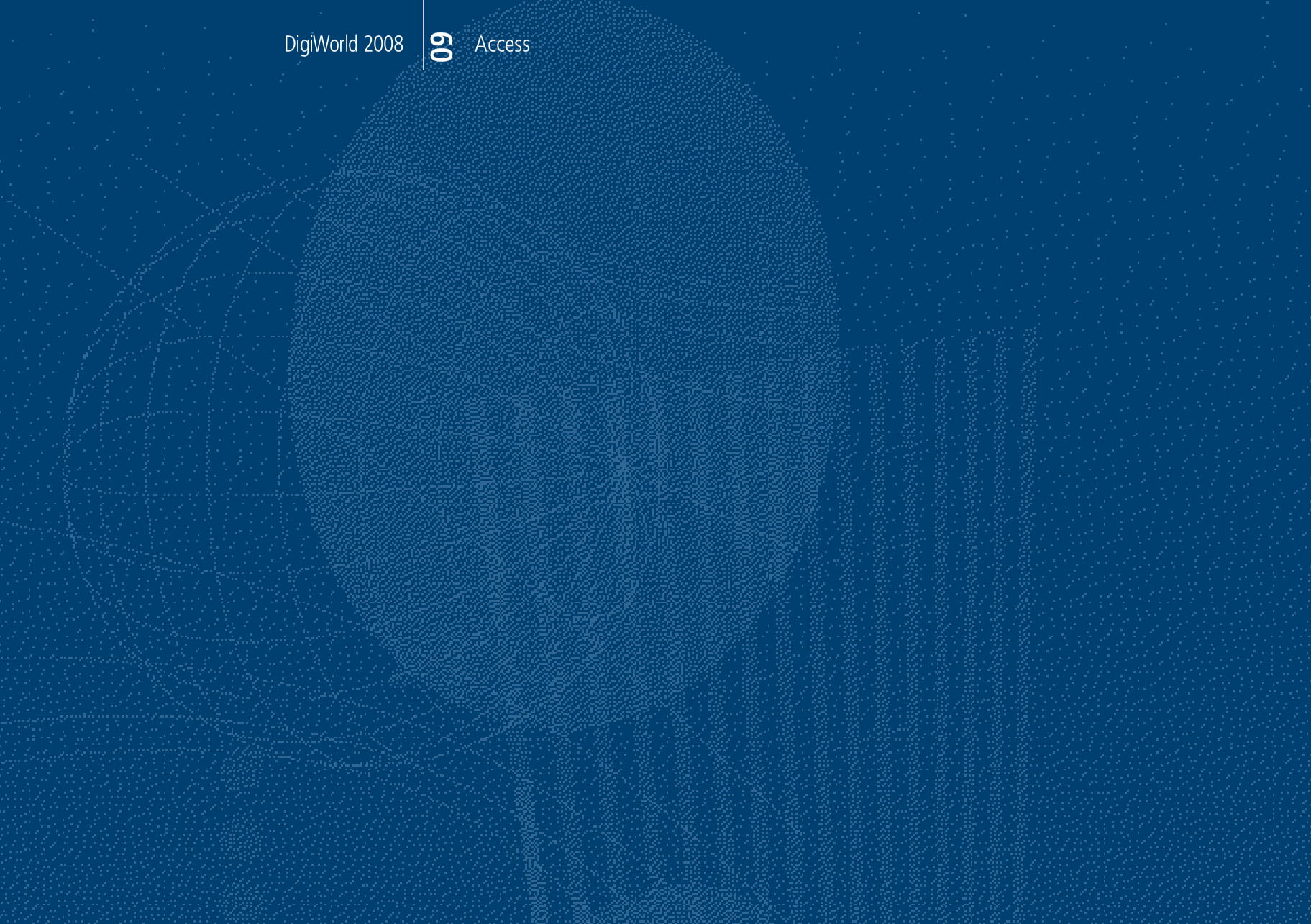
Source: Zenith Optimedia

Advertising model still dominant

Main sources of revenue for Internet giants



Source: Seoul Financial Times & IDATE estimates



III Access

Beyond convergence…

There is no shortage of challenges ahead for access providers: the outlook for mobile broadband and ultra-fast broadband on fixed networks, increasingly pervasive access needs, convergent consumption as the number of access networks grows… to name but a few.

The organisational and technological complexity which is required to respond to this raft of changes implies an increasingly collaborative approach from industry players, such as sharing infrastructure, partnerships for content and standardisation alliances. Operators need to keep their capacity to innovate intact and to differentiate their products in a fiercely competitive market, especially in those countries where penetration is high, and even nearing saturation.

The sizeable decline in the growth of the market's value in the most advanced countries is running parallel to a consolidation that could be accentuated by the prospect of a massive replacement of existing infrastructure, as fibre optic and 3.9/4G mobile technologies are deployed.

This makes it a good time to address the most pressing questions about network operators' positioning: should they concentrate on rolling out and managing fixed and/or mobile infrastructure, gradually cutting back their involvement in developing and supplying the wide array of multimedia applications? Or, on the contrary, should they be outsourcing their infrastructure more and more to equipment makers, and focusing instead on distributing services and applications tailored to the different market segments?

These questions encompass two views on how markets should be organised and regulated. The European Commission suggests that the remedies open to NRAs that are listed in the European regulatory framework include that ability to impose structural separation on SMP carriers – creating a distinction between managing essential infrastructure and supplying the services that use it. While some operators (BT) have embraced this option, and some private equity firms view it as a new opportunity to invest in recurring revenue, the majority of telcos are opposed to it – citing the complexity involved in creating a dividing line between their fixed and mobile businesses, the loss of synergies and the disincentive to invest in ultra-fast broadband that the measure would create.

Surge of underlying trends in access market

The number of fixed telephone connections is stagnating, and even shrinking in some developed economies where landline equipment and usage levels have reached saturation, and where classic telephony is now being replaced by cellular and VoIP. In many emerging economies, the landline infrastructure cannot keep up with the demands created by economic development. In some

countries, however, the fixed telephone base continues to grow, with cases in point including China and India and several countries in the Middle East, North Africa and Latin America.

Broadband subscriptions are helping to compensate for the decline in PSTN traffic revenue, and making strides in every part of the world. Emerging regions are now reporting a growth momentum that rivals and even exceeds the one we saw in the early 2000s in industrialised regions, with a comparable quality of service that includes commercial packages for end users with average downstream speeds of 512 kbps to 1 Mbps.

The still modest penetration levels in China and India in fact obscure the massive volumes involved, as both countries reported some 80 million new users in 2007 and a stampede of new customers – of between five and seven million a month – that shows no signs of waning. In the most mature markets, saturation is a reality, particularly in Europe where levels are nudging, and in many cases exceeding 100%, even in new EU Member States.

2007: The Year of the iPhone and the Mobile Majority

2007 may well be remembered as the Year of the iPhone whose influence is comparable to that of the iPod when it first hit the market. This model and its rivals have proven the importance of the interfaces offered to consumers when working to develop new mobile data applications, despite having an access network that still delivers limited bandwidth (EDGE). The substantial rise in the use of cellular networks to access the web is also being spurred by the introduction of data flat rates and the rise in the number of 3G/3.5G connections.

A more silent revolution also saw the light of day in 2007: more than half the world now has a mobile phone. This situation has translated into emerging markets playing a growing role in the telecom industry, and particularly the undisputed fact that the top Chinese manufacturers are increasing their weight in the equation. These are the markets that leading telcos from the West are working to penetrate, to offset the decline of their operations in Europe and Japan, as well being home to industrial and financial powerhouses such as China Mobile, Bharti, Reliance and Orascom that we will probably see going head to head with Western heavyweights more and more as the sector continues to consolidate.

At the same time, a gradual change in the value chain is being sketched out as several factors come to bear.

As operators in India work to handle the tremendous growth of their user base and to cover sparsely populated regions, we are seeing a growing trend of delegating network deployment and management to equipment manufacturers, along with a rise in the sharing of wireless stations.

Meanwhile, in Europe, we saw more passive infrastructure sharing between operators in 2007, as they endeavour to meet the demands of increased competition and 3G coverage.

The outlook of a mobile internet is also attracting more players to the field. Over the past few months, we have seen attempts by internet titans such as Google and Yahoo! to deliver a mobile version of their flagship services, while the world's leading handset supplier, Nokia, took advantage of Apple's arrival on the scene to reaffirm its capacity to offer a complete environment that incorporates all possible services (video, music, games, GPS, etc.) through an array of partnership configurations with operators. It is still too early to say exactly how these ambitions will shape the market. What remains to be seen is how operators will manage to offset the expected decline in their voice revenue (which, in Europe, still accounts for 20% of their already shrinking ARPU) with

new sources of revenue that guarantee a high enough margin to keep them afloat.

In any event, the hopes being invested in the development of new services and new consumption patterns ultimately rest on the deployment of networks that deliver higher speeds, and under economic conditions that render the mobile internet credible. The 3G base did increase in 2007, but in a very uneven fashion. The large emerging markets (China and India) still have no licensed 3G operators or networks while, in Europe, eight years after the first licences were awarded, only 20% of mobile users are 3G – a particularly low percentage compared to Japan where broadband mobile users constitute the majority. Nevertheless, as more and more users are expected to switch to 3G, the speeds being delivered by the technology are making real strides: in only a few years, we have gone from 384 kbps to 2 Mbps with HSDPA, and bitrates are expected to surpass those provided by ADSL (fixed broadband) within the next five years. The progress made will also be shaped by what 4G standards are chosen at the international level during this time. The WCDMA standard currently dominates the 3G market, ousting CDMA EVDO which has been losing its backers in the United States and South Korea. The central rivalry today appears to be between the expected developments on the HSDPA/HSUPA (LTE) front, supported by Ericsson and most of the leading operators, and the development of mobile WiMAX (recently recognised by the ITU as a 3G standard), which continues to be backed by Intel and Samsung.

Beyond the battle of the norms, which share a great many properties (OFDM and MIMO antennae) and appear to deliver comparable performances, the widespread use of mobile broadband will justify the freeing up of new frequency bands. Spectrum management will thus become a major topic of public debate, particularly as it involves the more or less competing demands of TV broadcasters (digital terrestrial, high definition, mobile) which are concentrated largely on the lower frequencies that ensure better coverage and penetration.

Fixed access waits for its second wind, as ultra-fast broadband enters picture

Although emerging markets are enjoying spectacular growth of their mobile base, the rise in fixed-line connections – whose chief function in an IP-dominated universe now appears to be delivering broadband access – still lags behind: unlike countries in the West, whose vast ADSL networks were enabled by decades of investment in the copper phone networks, their landline infrastructure is spotty at best.

Wireless access can help to compensate for this lack, one example being Pakistani operator Wateen, which uses WiMAX to deliver WLL access, and already has close to 10 million subscribers. Naturally, as outlined above, the prospects of LTE and 4G are expected to strengthen the credibility of wireless and cellular options. For broadband internet to become a mass market in these countries, the issue of computer prices needs to be resolved. Noteworthy solutions on this front include not only mobile devices but also the many programmes devoted to making a PC available for under $200.

Meanwhile, the broadband market in developed countries is having to contend with three issues. The first concerns the drop in user base growth that occurred in several countries in 2007. The second has to do with the degree of consolidation in the sector, at a time of relative saturation and the high cost of rolling out innovations associated with triple play bundles. This last point is all the more relevant in light of what can be considered the third major issue, namely the fact that ADSL connections appear more and more to be hampering the ability to deliver enhanced services, which means that operators are being forced to undertake massive

investments to roll out FTTx infrastructure to be able to supply much higher bitrates.

Verizon has been somewhat successful with its fibre optic rollouts in the US, having shot past the one million subscriber mark in a very short time. In Japan, FTTH/B users are increasing at a steady clip of several hundred thousand new customers each quarter, and the country is now home to more than 10 million FTTx households. Europe is still ironing out the model to be used for fibre, as the market is taking shape around rollouts initiated by the city (Amsterdam, Stockholm, …) and the first investment plans by incumbent carriers (Deutsche Telekom, Telefónica, Orange, etc.) and their rivals in the ADSL and cable markets (Neuf Cegetel, Free, FastWeb...).

And, of course, the fixed access market is also being shaped by the strategies being employed by the top telcos, which are increasingly both fixed and mobile, and working to recreate value around fixed access by replacing cellular traffic with fixed in their convergent offerings that are based either on hybrid handsets (GSM-3G/Wi-Fi), or which bank on the widespread use of femtocell architectures. In fact, the reduction of the size of the cells and the increased use of wireless equipment go hand in hand with the deployment of more local broadband wireless networks.

Regulation put to the test: spectrum, neutrality, protection of privacy, security...

Regulation was very much at the centre of debates in 2007, especially in the European Union where the Commission proposed a revised regulatory framework in November that includes a considerable drawdown of ex ante regulation, which will focus increasingly on wholesale offers. As mentioned earlier, the new framework also includes the introduction of functional separation as a last-ditch remedy for ensuring equal treatment for the owners of essential infrastructure and their client operators that provide access services. Regulations governing roaming tariffs, better coordination of European regulators and the creation of a pan-European regulatory body (as an alternative to coordination through the current ERG) are among the other proposals put forth by the Commission.

Over in the United States, the net neutrality debate that began in 2006 continues, fuelled by the restrictions certain operators (Comcast) are imposing on the use of some P2P applications, such as BitTorrent. Underlying these various cases are the much more complex implications of differentiating the streams being carried over the web in response to the constraints of the supported applications.

Also worth noting across the pond is the debate triggered by several players, including Google, during the recent digital dividend spectrum auctions, which made a semi-successful attempt at demanding that a portion of the newly-allocated spectrum be subject to an open access model.

And, finally, all access market players are directly concerned by disputes over copyright infringement and invasion of privacy issues. Once again in 2007, we witnessed conflicts over the legitimacy and effectiveness of technical or regulatory solutions imposed on access providers.

Market in the throes of change

Fixed telephony

Losing ground to mobile, for different regional reasons

In developed economies where landline equipment and usage levels have reached saturation and classic telephony is now being replaced by cellular and VoIP, the number of fixed telephone connections is stagnating, and in some cases shrinking,.

In many emerging economies, with the landline infrastructure unable to keep up with the demands of economic development, cellular take-up is growing faster despite broadband access requirements.

In some countries, however, the fixed telephone base continues to grow. Prime cases in point include China and India and several countries in the Middle East, North Africa and Latin America. In India in particular, whose teledensity is only 4%, the decline of the landline base in 2006-2007 is thought to be only temporary – due in part to a statistical reclassification of short-range technologies (such as WiMAX) which had previously been classified as fixed services and now count as mobile.

Increased connections too low to increase revenue…

The growing number of phone lines in emerging countries is not, however, being expressed in a clear increase in the revenue generated by fixed access: voice traffic is decreasing and Internet access revenue is not enough to offset the losses.The logical outcome of these trends is that fixed telephony's share of overall telecom revenue is dropping steadily across the globe.

…despite effective tactics to stem decline

We have seen that the launch of IPTV services can help to revive demand for landline connections and that combining VoIP with broadband access allows operators to bill their phone service as an option and so limit their losses.

Another strategy that has helped to stabilise voice revenue for some operators, after years of steady decline, is flat rate billing for fixed calling minutes.

Telcos are also taking advantage of the possibility of selling voice access in B2B2C mode, one example being the use of VoIP for IP-based video surveillance.

It ultimately depends on broadband and VoIP growth

Whatever strategies telcos use to sustain their fixed traffic levels, they appear to be only band-aid remedies as IP telephony continues to make great strides in all markets where it is available. Connections created for broadband access are offsetting losses only to a degree while, in emerging markets, the fixed infrastructure may not even be capable of supporting new DSL connections.

In markets where broadband penetration is high, questions nevertheless remain over the rate of VoIP adoption. The share of fixed lines that is managing to resist mobile penetration is not faring as well when competing with VoIP which offers a more direct substitute. The question that remains, then, is the pace at which this substitution will take place.

Fixed access lines worldwide

(millions)		2004	2005	2006	2007	2008	2011
North America		198	196	191	186	185	179
Europe		327	326	319	314	309	296
European Union		246	244	236	229	224	209
	France	34	33	32	30	28	24
	Germany	55	55	54	53	52	47
	Italy	29	28	26	26	26	25
	Spain	21	23	22	22	21	20
	UK	34	34	34	33	32	31
Russia		39	40	42	42	42	46
Asia-Pacific		519	564	578	586	595	621
	China	312	350	368	374	379	391
	India	45	49	40	39	41	46
	Japan	70	67	66	66	66	64
Latin America		93	96	97	98	100	105
	Brazil	40	40	39	39	39	40
Africa and Middle East		57	64	69	71	75	86
Total		1 195	1 247	1 253	1 256	1 264	1 287

Source: IDATE

Maintaining fixed voice revenue with bundled offers

Incumbent telco positioning on quadruple play, by country

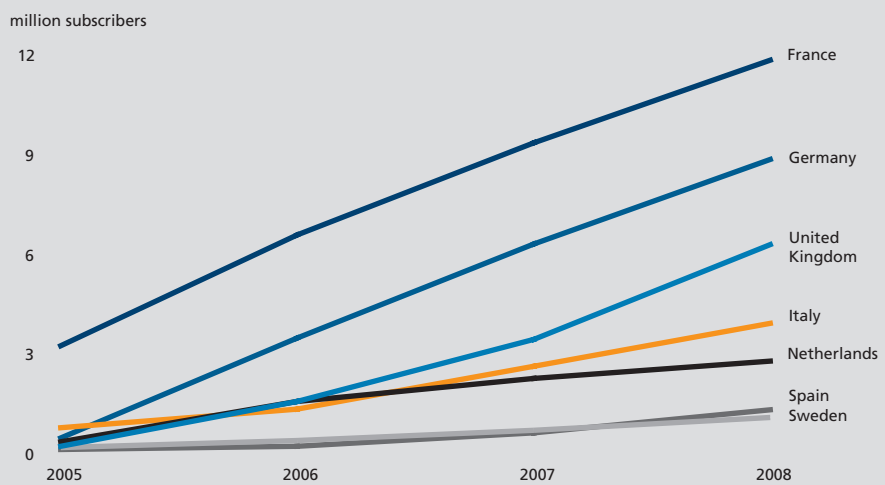
Country	Operator	Fixed voice	Internet access	Television	Mobile services
USA	AT&T	■	■	■ Satellite + IPTV	■
	BellSouth (merged with AT&T)	■	■	■ Satellite	■
	Verizon	■	■	■ Satellite + IPTV	■
	Qwest	■	■	■	■
France	France Télécom	■	■	■ IPTV	■
Germany	Deutsche Telekom	■	■	■ IPTV	■
Italy	Telecom Italia	■	■	■ IPTV	■
Netherlands	KPN	■	■	■ IPTV	■
Spain	Telefónica	■	■	■ IPTV	■
Sweden	TeliaSonera	■	■	■ IPTV	■
UK	BT	■	■	■ IPTV	■
Japan	NTT	■	■	■	■
South Korea	KT	■	■	*	■

■ on offer * planned

Source: IDATE

VoIP making considerable strides in Europe

VoIP subscriber growth in seven European markets



Source: IDATE

More investments on the horizon

Fixed broadband

Steady growth, marking a contrast with the decline of switched access

Broadband is helping to compensate for the decline in traffic over PSTN lines, and making strides in every region around the world.

Emerging regions are now reporting a growth momentum that rivals and even exceeds the one we saw in the early 2000s in industrialised regions, with a comparable quality of service that includes commercial packages for end-users with average downstream speeds of between 512 kbps and 1 Mbps.

Once again it is China that tops the ranks with a subscriber base equivalent in size to 60% of the Western European base at the start of 2008, and this with a penetration rate of only 5%. Steady increases are also being reported in India, Brazil and Russia, and all boast a very solid growth outlook.

Broadband development across Asia also accompanies the flow of investments in improving international and coastal undersea cable capacities. Between January 2007 and February 2008, the Falcon cable was cut twice, the SeaMeWe-4 once and continental cables are non-existent. Each break in the Falcon cable affected some 100 million connections in Asia and the Middle East.

Another factor in future spending will be the switch to IPv6, as the current most widely-used version of the Internet protocol (IPv4) is reaching its limits, particularly in terms of addressing. 2008 could thus mark the true onset of IPv6 with it proving necessary for handling the proliferation of fixed and especially mobile connections. According to the IANA, at the present rate, the pool of IPv4 addresses could be used up by 2010.

New areas of revenue sharing

The issue of bandwidth costs is once again coming to the fore in developed markets as they grapple with the problem of how to share the cost and revenue of bandwidth-hungry video content (whose consumption pattern is explored in Chapter 5).

Broadband access is becoming increasingly separate from its use. 2007 saw the introduction of a number of service packages divorced from access – with examples that include traditional telecom services (such as voice mail and address book), personalised services such as .Mac, My Yahoo! and iGoogle, and online storage services.

More and more, broadband connections are also supporting the person-to-person communication services that are replacing fixed telephony: instant messaging, e-mail, online forums… In France, for example, estimates indicate that 40% of the time users spend online is spent communicating but, unlike with classic fixed telephony, this time is being captured by a host of service operators and not being monetised as effectively.

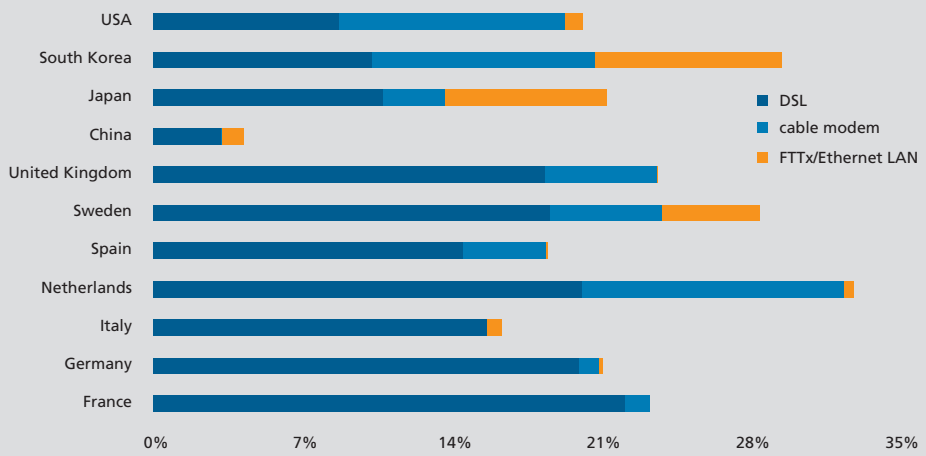
Broadband subscribers around the world

(million)		2004	2005	2006	2007	2008	2011
North America		41	54	64	74	85	107
Europe		43	66	90	114	130	175
European Union		40	59	80	100	113	137
	France	7	9	13	15	17	20
	Germany	7	11	15	20	21	25
	Italy	5	7	9	10	12	16
	Spain	3	5	7	8	10	12
	UK	6	10	13	17	19	22
Russia		1	2	3	4	6	18
Asia-Pacific		64	85	108	134	165	284
	China	26	39	52	65	83	157
	India	0	1	3	7	11	29
	Japan	19	22	26	29	32	40
Latin America		5	9	13	19	26	60
	Brazil	3	4	6	8	11	24
Africa and Middle East		2	3	3	6	9	26
Total		155	215	279	347	415	653

Source: IDATE

Broadband equipment in the world

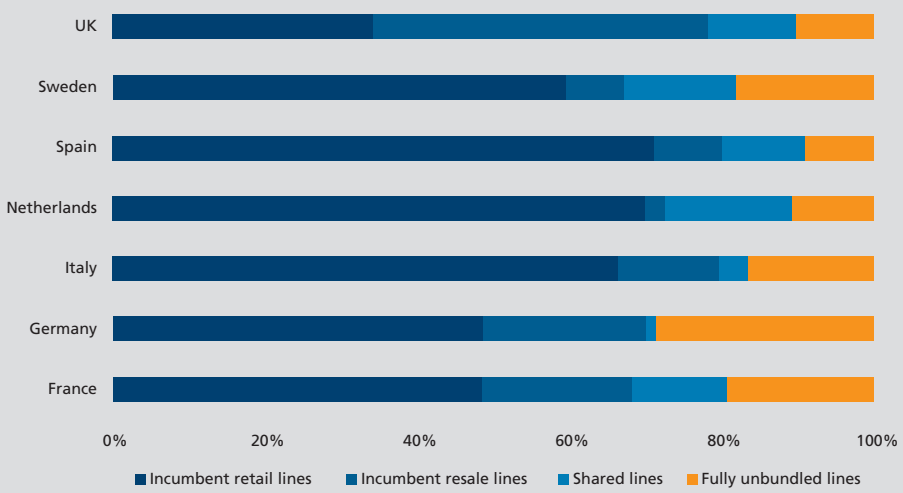
Broadband access in mid-2007, by technology, as % of population



Source: IDATE

Unbundling in Europe

Breakdown of DSL by origin, mid-2007



Source: IDATE

Looking for new growth outlets

Mobile telephony

Saturation in developed markets… and in some emerging ones

The central challenge for mobile operators in developed markets is to cultivate new forms of consumption (mobile video, TV and IM) to boost their ARPU and secure customer loyalty, at a time when their markets have reached saturation. Overall, Europe has been reporting over 100% mobile teledensity since 2006, while the United States, industrialised Asian countries and even some Latin American nations (Argentina, Chile, Venezuela) are nearing the same fate. Just a shade over 50% of the world's population now has a mobile phone.

Massive volume and growth potential in China and India

The still modest penetration levels in China and India obscure the massive volume involved, as both countries reported some 80 million new users in 2007 and a stampede of new customers – of between five and seven million a month for both – that shows no signs of waning. These two countries alone accounted for 30% of new mobile customers worldwide in 2007.

The impact of this trend is two-fold:

- on the one hand, penetration is moving into the larger swathes of the population, which means lower ARPU and requires the production of massive volumes of a new kind of low-cost phone, and even models that allow handset or SIM card sharing;
- and, on the other hand, large-scale optimisation of service marketing and delivery methods for serving the surge of several million new mobile customers each month.

As a result, emerging countries are also contributing innovations to the access and equipment process, while developed markets are working to innovate on the service side of things.

MVNOs still marginal

On the whole, MVNOs have remained on the margins of the competitive landscape up to now: none has yet managed to be so successful as to upset the MNOs that own the infrastructure and the spectrum. It is nonetheless worth noting the different brand strategies (Virgin Mobile or M6 Mobile) which have proven more effective than the packages rolled out by pure telecom brands (Debitel).

The virtual operator business model is shaped by margin, whether regulated or negotiated. An existing user base and an ability to market in large volume helps facilitate discount negotiations (30% off retail for Virgin Mobile).

The granting of new licences, in Japan and in several European countries, offers opportunities for new entrants (Willcom in Japan, CWS in Norway…).

More new entrants are expected in the high-end mobile market: after Apple's iPhone and the announcement of Google's gPhone operating on its Android OS, Garmin has revealed plans to launch a GPS phone in the third quarter of 2008. Other candidates for this market segment could include Nintendo and Sony whose network-ready game consoles are still confined to WiFi. These new devices, coupled with wholesale access packages, could make a (small) dent in the voice and data traffic of classic cellcos.

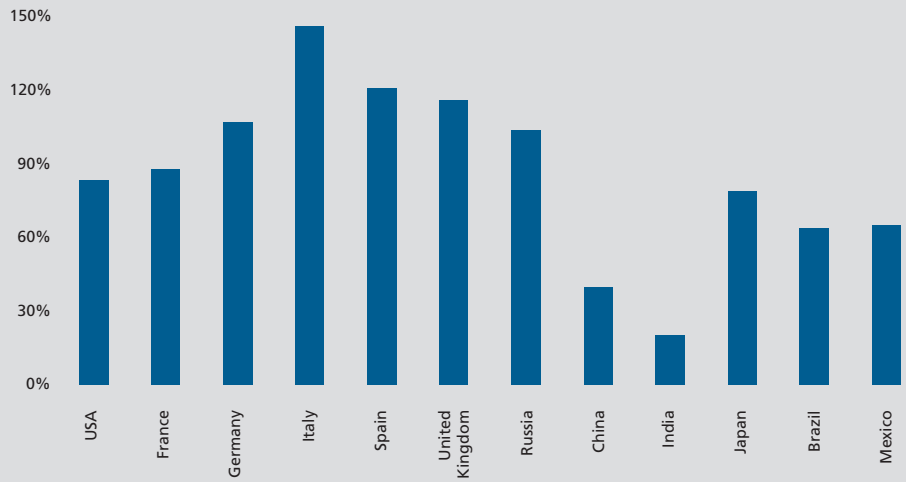
Mobile customers in the world

(millions)	2004	2005	2006	2007	2008	2011
North America	197	225	252	270	287	337
Europe	558	692	800	860	890	939
European Union	369	406	439	471	482	504
France	44	48	52	55	57	63
Germany	71	79	85	93	95	98
Italy	63	72	80	85	87	90
Spain	39	43	47	49	50	52
United Kingdom	62	69	72	73	73	75
Russia	69	126	156	161	165	170
Asia-Pacific	669	816	1 054	1 323	1 538	2 073
China	317	374	444	525	599	794
India	48	76	150	225	298	494
Japan	85	90	95	100	104	115
Latin America	168	233	296	361	409	510
Brazil	65	87	101	121	137	177
Africa and Middle East	113	188	268	363	411	520
Total	1 705	2 153	2 670	3 178	3 535	4 380

Source: IDATE

Mobile teledensity in the world

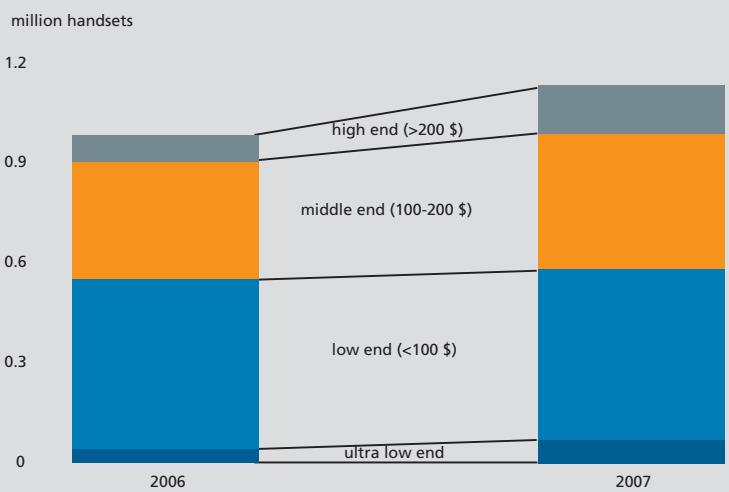
Mobile customers, as % of population, in largest markets, end-2007



Source: IDATE

90% of mobile handsets cost less than 200 USD

Mobile phones by category



Source: IDATE

Between regional concentration and a restructured value chain

Competitive landscape

The regional titans are born

Mergers in the United States and India, pan-European developments and China's licence restriction policy have led to the creation of operators of unprecedented dimensions, excepting the original AT&T monopoly.

The size of these regional titans protects them from hostile takeovers – or at least makes them less vulnerable – while also providing them with a large enough interior market that can fuel their hopes of becoming multinational players, in some cases to the detriment of new entrants in their local markets. China and the US stand out as prime examples, operating in markets where the price of admission is now in the tens of billions of dollars.

The growth strategies of these mega-operators are currently confined to their home turf (Telefónica stands out as a notable exception) but expansion outside their borders is likely once their interior markets become saturated, which is already the case in Europe and the United States.

New mobile infrastructures and models

In both the United States and Europe, new spectrum is becoming available that enables higher speeds for users on the move. In both cases, candidates – which include existing cellcos and new entrants – are interested not only in mobile telephony but also in the possibility of using new technological standards in the highly-coveted frequencies that have been liberated by television and military applications.

Once thought a real possibility, technological neutrality – which would leave operators the choice of which duplex technologies to use – is coming up against hurdles of implementation. It appears that this fragmentation would mean wasted spectrum because of the line frequency that needs to be maintained between each technology, for each operator. The debate for now, particularly in Europe, is focused more on harmonising spectrum management.

In any event, these changes presume a significant increase in bandwidth consumption, as well as investments in access and collection networks.

Competition on the marketing front

As mobile penetration rates rise, managing handset and network equipment bases becomes an increasingly complex affair.

Added to this complexity is the challenge of managing the various versions of operating systems, which vary from one brand and from one handset to the next. It nevertheless appears that a handset such as the iPhone which is not specified by the operator can enjoy tremendous success and increase data traffic consumption; this benefits both the manufacturer and the operator.

This trend, combined with outsourcing all or part of the networks – a common practice for several years now, and beneficial to handset suppliers – reduces the operator's role to customer acquisition and relations management.

When coupled with open access, these changes might also pave the way for B2B capacity resale strategies for voice and data access, similar to what has occurred in DSL wholesale markets and, more generally, to a clearer separation of an operator's marketing business (all services combined) and production business.

The pipes-content relationship back on the table

Some European operators are working to strengthen their organisation to better respond to the wholesale market. BT and KPN are two examples, with BT having proactively separated their two business areas, albeit under pressure from the regulator.

Functional separation was even included in the European Commission's proposed amendment to the Telecoms Package in November 2007, as a possible last resort remedy for stimulating market competition.

Meanwhile, over in the United States, the net neutrality debate has yet to be resolved from a legal standpoint, and it is entirely legitimate to ponder content providers' ability to deliver access to users by investing in spectrum (which Google has already announced it intends to do) or in fibre optics (as yet unexplored), which would further drive the integration of these two businesses.

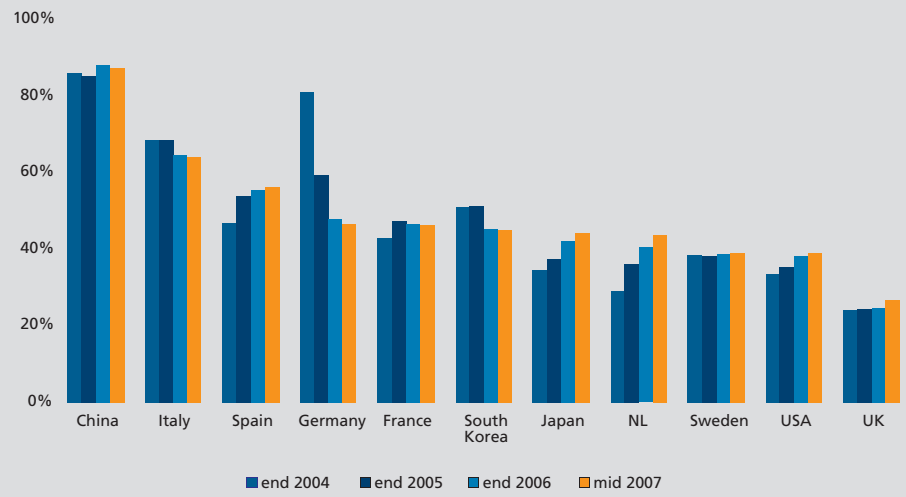
Incumbent telco share of the fixed telephony market (all types of call)

	end 2005		end 2006	
	retail revenue	traffic volume	retail revenue	traffic volume
France	69.2%	60.9%	69.7%	57.5%
Germany	55.1%	48.0%	50.9%	47.0%
Italy	64.7%	64.4%	63.6%	65.1%
Netherlands	75.0%	65.0%	73.0%	61.0%
Poland	75.9%	79.8%	71.8%	72.6%
Spain	72.8%	68.2%	74.2%	66.7%
United Kingdom	51.3%	51.9%	49.3%	50.7%

Source: EC implementation report

Broadband market competition

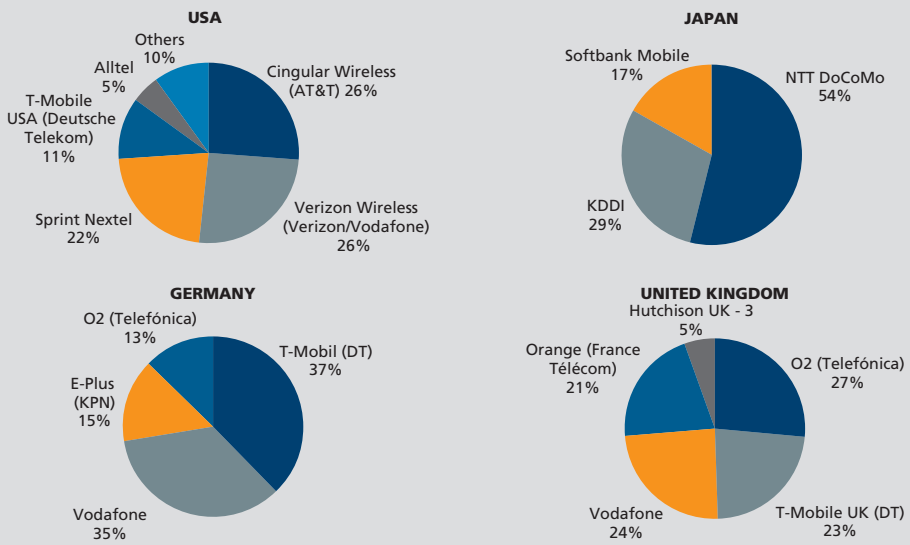
Incumbent telco share of the broadband retail market



Source: IDATE

Mobile market competition

Market share of mobile network operators in industrialised countries, mid-2007



Note: MVNOs are active in most markets. Their subscriber bases are included in the market share of their host MNO.

Source: IDATE

Packages in search of an audience

Convergence

Convergent access networks

The triple play bundle (fixed telephony, Internet access and TV), combined more and more with mobile calling, is increasingly present in Europe. This integration of the different access networks enables comparable uses (such as email, contacts, IM, and online storage) regardless of the type of access.

Pure-play mobile operators are currently forging partnerships or creating VNOs to be able to market a triple play bundle, when not taking control of fixed telcos (SFR/Neuf Cegetel in France, SK Telecom/Hanaro Telecom in South Korea…).

From a technological standpoint, beyond fixed devices, the IP device appears to be taking hold as the future universal standard – if there is to be one – of this convergence. Multi-sessions, streaming requirements and the ongoing rise in the number of connections are all spurring this solution. IP is the de facto standard offered in equipment supplier catalogues and, to date, is the only protocol scaled to manage addressing for the billions of devices and pieces of network equipment involved.

Mobile consolidating its position as the all-in-one device

The modest consumer sales of convergent offers such as Orange Unik and BT Fusion should not obscure the fact that a great many mobile handsets are starting to reflect this network convergence. More and more are compatible with 3G, WiFi and GPS, in addition to Bluetooth which already equips roughly half of all the handsets sold.

That being said, devices capable of seamless and transparent handover from a mobile to a WiFi network, and vice-versa, are few and far between, penalised by network reaction time and identification issues which are hard to manage in a mobile situation.

Added to this, the limited capacity of batteries is becoming an issue for handsets with larger screens, multiple antennae, a camera, memory access… Here, multiple networks are a redundant function.

And, finally, the real performances delivered by handsets and embedded proprietary OS do not allow for truly fluid use. Incompatibilities between operating systems make open applications problematic – applications that would enable new mass, fluid and instantaneous consumption modes, as is the case on the Web with P2P (YouTube) or with social networks. The announced launch of Google's Android along with initiatives from the Open Handset Alliance do indeed foreshadow an alternative to these proprietary strategies but, in practice, and for now, it only involves a handful of prototypes.

Another approach to the single device, Home Zone, currently provides packages which are a good compromise between price and ease of use, and for a much lower implementation cost. They will, however, come up against their limitations with data-intensive applications.

Finally, the commercial outlook for Near Field Communication (NFC) for contactless payment or identification applications built into the mobile also seems promising, and is currently the focus of several partnerships and large-scale trials.

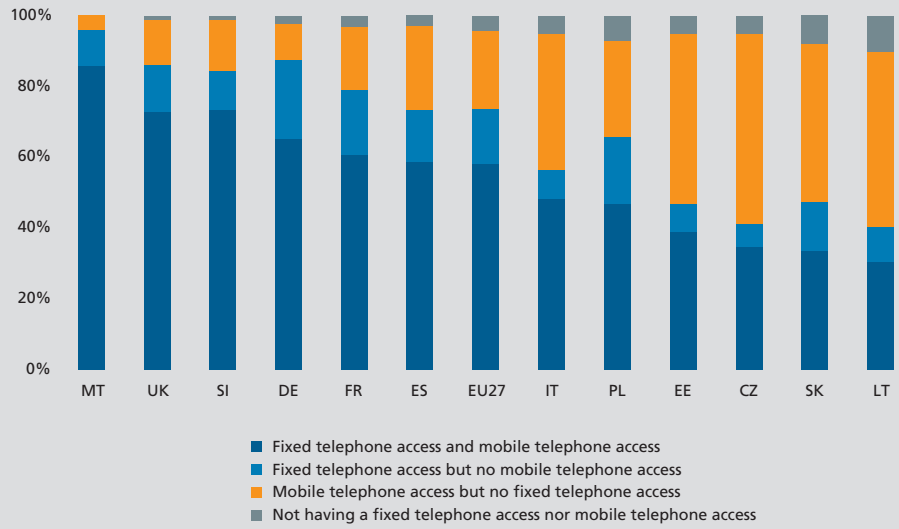
Current and upcoming convergent handset packages

Operator	Package	Launch
BT (UK)	BT Fusion	2005 (new version in 2007)
KT (South Korea)	MU OnePhone (CTP)	2004 (stopped in May 2006)
Neuf Cegetel (France)	Twin	June 2006
Deutsche Telekom (Germany)	T-One (two formulae marketed by T-Com only)	August 2006 (stopped in March 2007)
Telecom Italia (Italy)	Unico, renamed Unica	Summer 2006
NTT DoCoMo (Japan)	OnePhone (for business users only)	
TeliaSonera (Denmark)	Home Free	August 2006
T-Mobile (USA)	Hotspot@Home	October 2006 (in the Seattle area only)
Orange (France)	Unik	October 2006 (extended to Spain, UK and Netherlands)
Free (France)	Pirelli dual handsets (but no mobile tariffing plan)	
Freenet (Germany)	IP1 handsets (Nokia N80 UMA)	Announced at CeBIT 2007
Saunalahti/Elisa (Finland)	Test with Nokia UMA handset (no commercial launch since Elisa's takeover)	
Arcor (Germany)	TwinTel SIP handset (also called DualPhone)	October 2006
Ya.com (Spain)	TC 300 Deutsche Telekom handset	February 2007
KDDI (Japan)	SIP dual handset (for business users only)	
Brazil Telecom (Brazil)	Unico (CTP handset)	

Source: IDATE on opator data

New EU Member States opt for mobile

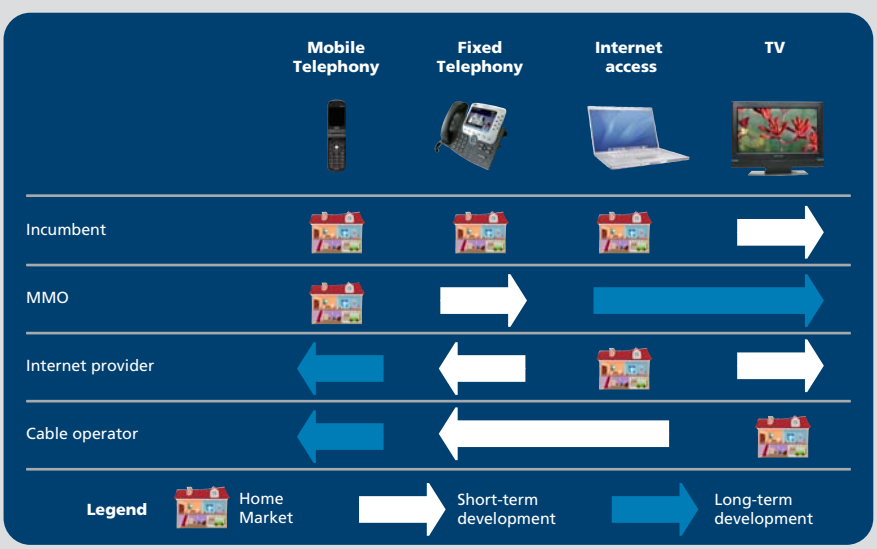
Access modes in EU-27



Source: European Commission

Growing shift to quadruple play

Shifting market positions of vendors



Source: IDATE

Huge geographical disparities

FTTH

FTTx: steady progress in Japan, solid growth in the US, and just taking off in Europe

As of September 2007, Japan was home to 10.5 million FTTH/B subscribers, and reporting a steady influx of 800,000 new subscribers per quarter. Among the user base, only a small percentage subscribe to IPTV: between 200,000 and 250,000 subscribers at the end of Q3 2007. In this fiercely competitive market, where fibre access prices almost rival those charged for ADSL, fibre rollouts are allowing NTT to increase its share of the fixed access market and to enjoy very low churn, compared to other access modes.

Over in the United States, it is Verizon – going head to head with cablecos – which is driving the adoption of ultra-fast broadband, touting TV and video applications as its main selling point. Despite analysts' pessimistic predictions in the early days of fibre, Verizon had managed to attract close to 1.3 million subscribers to its FioS service by the end of September 2007, including more than 700,000 TV subscribers.

The situation in Europe differs a great deal from country to country, despite a clear trend: a 44% increase in the number of homes passed for FTTH/B, but only a 12% increase in subscribers between June 2006 and June 2007.

The greatest strides are still being made in Scandinavia, the Netherlands and Italy: B2 and FastWeb alone account for more than half of the four million homes passed in Europe. Naturally, these are also the countries with the most FTTx subscribers. Elsewhere in Europe, the prospect of a saturated broadband market and the sector's ongoing consolidation are beginning to push operators to invest. Leading telcos in France, Germany and Spain have all announced massive and gradual FTTx rollouts: Deutsche Telekom (VDSL), Telefónica, Orange (FTTH), Neuf Cegetel (FTTH), Iliad/Free (FTTH), Numericable (FTTLA/B)...

Two major obstacles hampering deployments in Europe

There are still obstacles to fibre rollouts, however: first, the cost of civil engineering in places where aerial or shared deployment are not an option and, second, the administrative procedures for accessing buildings.

Solutions to the issue of civil engineering costs do exist, most of which involve sharing the financial burden, but they require regulatory arrangements between operators or partners and local municipalities.

One reason for the success of fibre rollouts in Scandinavian countries has been the housing ecosystem that facilitates deployment. In countries such as France, access to each building still needs to be negotiated by each operator, on a case by case basis.

These two impediments require a departure from the DSL model. In France, national regulator ARCEP has planned on organising a system for sharing France Telecom ducts to spread the cost of civil engineering, and to switch from consensual acceptance of fibre in buildings to obligation. Both of these measures are expected to be in effect by the second half of 2008.

Financing model still needs to be found for deployments outside city centres

The capex required, well above the investments needed for DSL, makes it difficult to justify rollouts in suburban and rural areas, except in the case of greenfield projects.

A technological option such as FTTN combined with VDSL would help improve ultra-fast broadband coverage in less densely populated zones, albeit supplying lesser performances. In France, for instance, it appears that equipping cabinets with VDSL would supply downstream bitrates of over 50 Mbps to only 20% of households!

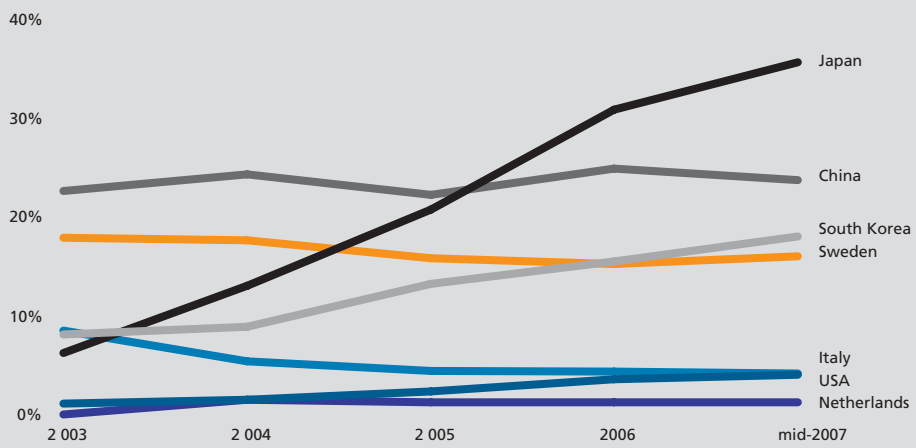
FTTx subscribers in the world

(thousands)		2003	2004	2005	2006	mid-2007
North America	USA	309	549	1 136	2 051	2 489
Europe	France	1	3	7	7	7
	Germany	53	51	67	100	125
	Italy	214	274	317	390	403
	Netherlands	1	51	55	65	70
	Spain	6	7	9	26	30
	Sweden	169	242	299	366	412
	United Kingdom	6	9	11	14	16
Asia-Pacific	China	2 661	6 311	8 694	12 286	13 461
	Japan	849	2 442	4 656	7 962	9 684
	South Korea	909	1 061	1 620	3 401	4 284

Source: IDATE

Strong variations in FTTx deployment levels

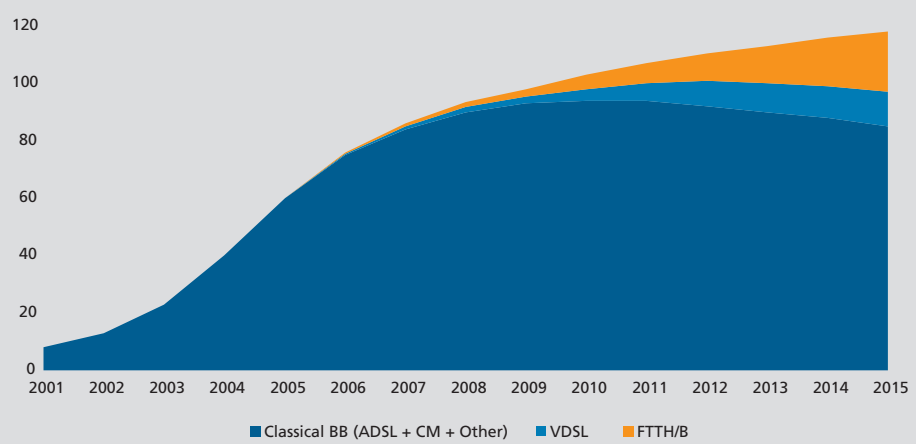
FTTx share of broadband access market



Source: IDATE

Medium-term growth for ultra-fast broadband in Europe

Growth of broadband and ultra-fast broadband subscribers in Europe



Source: IDATE

A year of expanding packages, and speed limits

Mobile broadband

3G making strides compared to roaming networks

A great deal of hope – and more – has been invested in WiMAX and WiFi mesh networks for enabling permanent access but, in 2007, these technologies appear to have made their way only to niche markets: covering dead zones or hotspots, providing fixed broadband access in emerging markets and municipal micro-networks (particularly in the United States). In South Korea, the progressive launch of WiBro in 2007 fell short of expectations, with just under 100,000 users having signed on by the end of the year – half the number hoped for by then.

On the other hand, 3G using HSDPA has been deployed on a large scale, and a great many compatible handsets were in use by the end of 2007. In the United States, following on the heels of Cingular, AT&T has announced that it would be upgrading its network to HSDPA, and so giving the technology transcontinental coverage that should spur the launch of compatible handsets.

The large number of subscribers should not, however, trick us into thinking that broadband mobile applications are widely used, regardless of the technology involved, as many subscribers make only scant use of the data services available to them, except in special situations. Here, the Olympic Games in Beijing could give these services a real boost as sporting events, along with adult content, are the most popular video content on mobile phones.

Increased load on access and collection networks

The rise in demand for mobile broadband naturally leads to questions about network capacity. We know that AT&T's EDGE network buckled temporarily under the weight of demand from the first iPhones. On the other hand, French operator SFR, which had 250,000 customers for its Illimythics package at the end of January 2008, does not appear to have encountered similar surprises.

In any event, the more broadband mobile consumption grows, the more monies will be invested in increasing collection and especially access capacity. Regarding access, the next major evolution of 4G/LTE standards is expected in 2011-2012 at the earliest. This means that operators will likely limit the use of broadband mobile services while awaiting the next generation of equipment which is capable of delivering greater bandwidth per sector. These limitations could take many forms, including closed portals, caps on traffic, special prices for exclusive handsets, focus on accessing music rather than video, and mobile TV rollouts on separate frequency bands.

Interfaces adapt

Another trend in 2007, after the launch of the iPhone, was the launch of handsets with larger screens, and a growing number equipped with touch screens and with light, temperature and movement sensors, etc.

New entrants' forays into the world of handsets (Apple, HTC, possibly Google and Microsoft in 2008) will continue, and the telephone such as has been known for a century now – incorporating buttons, a microphone and a receiver – will change significantly as a result. Some handsets no longer have a physical keypad, and are paving the way for software-centric innovations comparable to what we find in the computer universe: more durable hardware, but with upgrades (possibly paid) of the OS. The integration of Bluetooth in cars, of GPS and hi-fi equipment, of shared earphones and speakers… will make it possible to separate previously integrated functions into a single device adapted to mobile use.

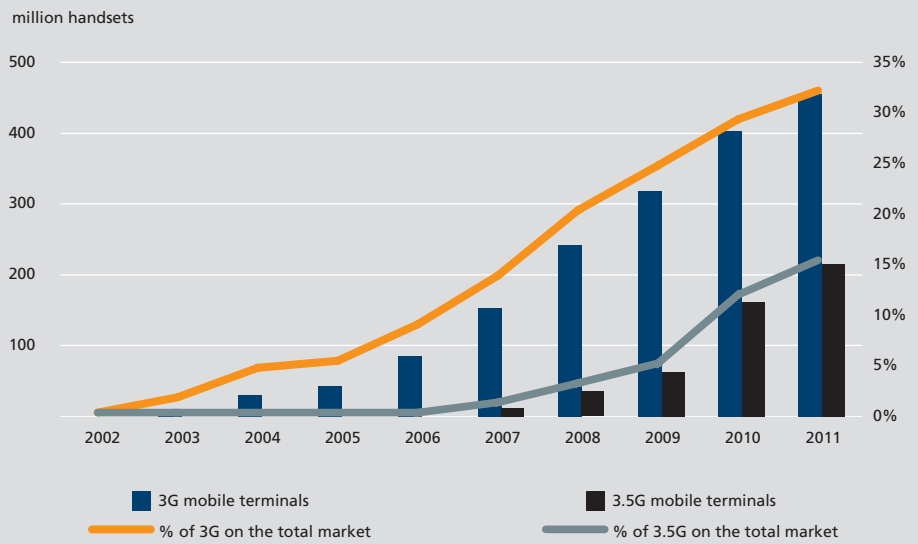
Total 3G subscribers in EU-27

(millions)	2005	2006	2007	2008	2011
France	1.4	4.2	8.5	15.0	41.7
Germany	2.0	4.7	15.7	28.5	63.8
Italy	10.8	18.5	26.8	35.9	59.5
Netherlands	0.2	2.0	3.6	4.7	12.1
Poland	0.0	0.1	0.3	0.6	6.4
Spain	0.8	3.3	7.8	11.5	28.5
United Kingdom	4.5	7.5	10.9	17.6	45.2
EU-27	22.4	46.1	87.7	135.5	301.5

Source: IDATE

10% of handsets sold in 2007 are 3G compatible

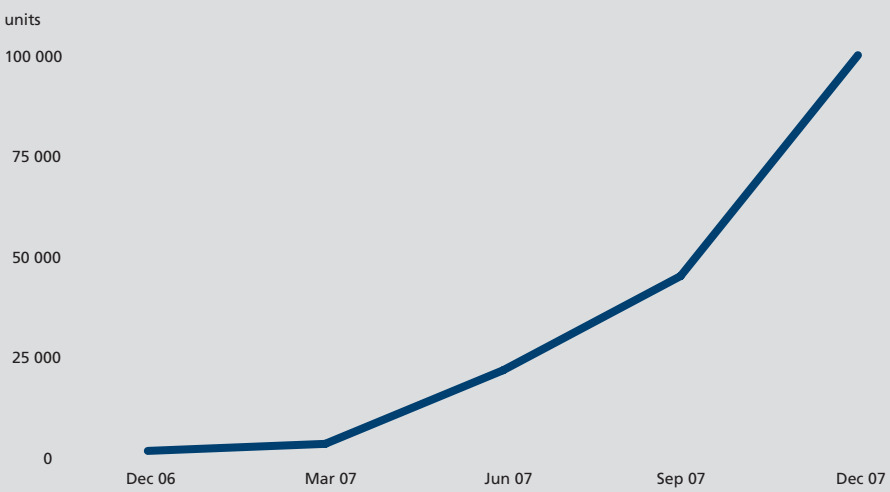
3G and 3.5 handset sales forecasts, per million units



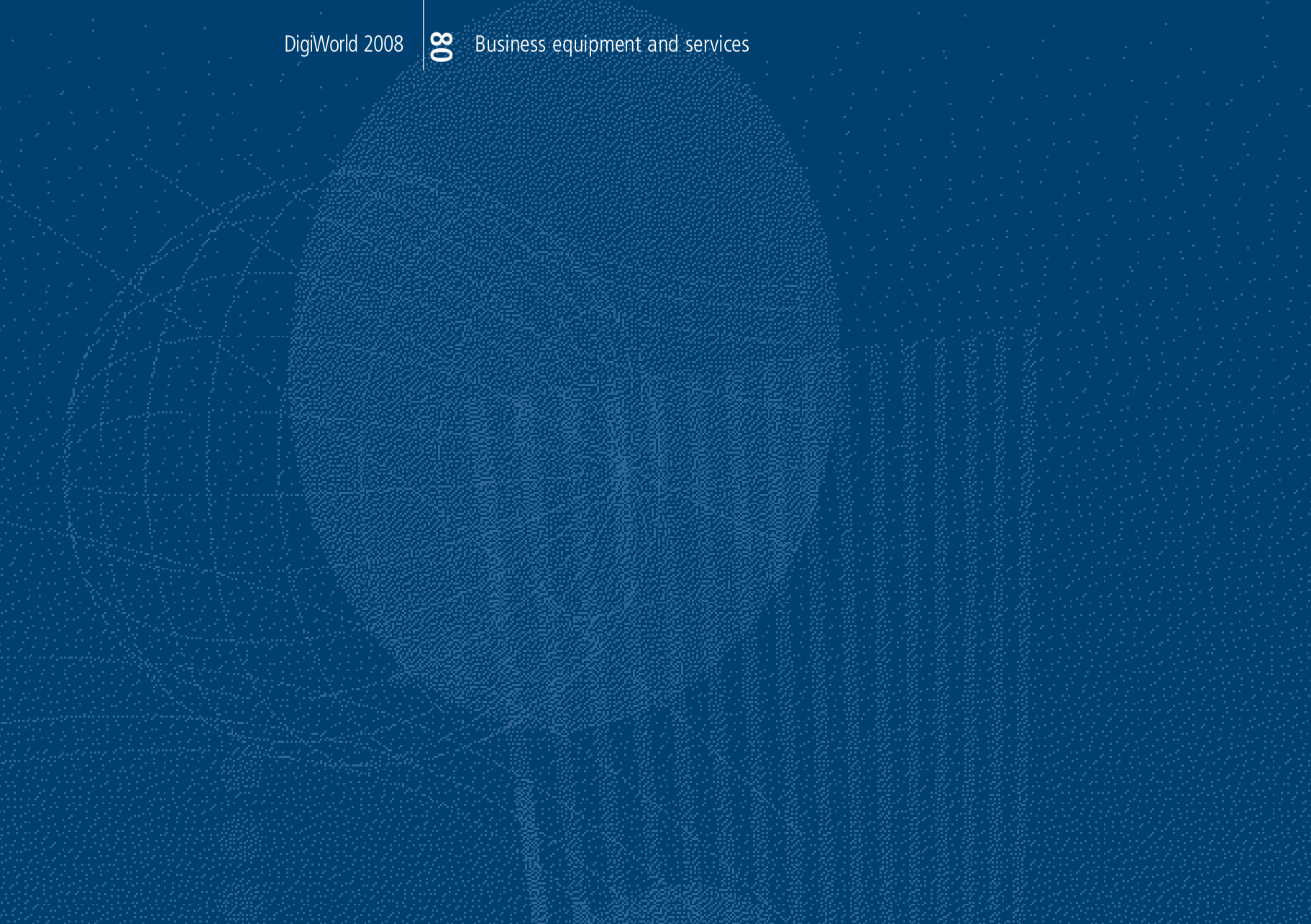
Source: IDATE

WiBro starts off with mixed success

WiBro subscribers



Source: Seoul Financial Times and IDATE estimates



IV Business equipment and services

Corporate market for ICT services: a year of continuity

The year 2007 was not one of spectacular change in the business telecom and IT markets, neither in terms of technical innovation nor the solutions on offer, but rather a year when existing trends became more firmly entrenched: ToIP solution rollouts continued to increase – enabled by businesses replacing their PABX base – and the software sector was further consolidated. Upgrades to network infrastructures, and particularly the migration to full IP, now make it possible to focus investments on the upper, more application and service-oriented layers.

ToIP gaining ground

The growth curve for revenue generated by business telecom services is a variable one, with telcos' ARPU for voice services continuing to slide, in part because of the growing use of VoIP for on-net calls, while data services revenue – particularly for IP VPN services – increased slightly in 2007 as a growing number of small and medium-scale enterprises (SMEs) adopted this type of solution. The IP PABX market generated global revenue estimated at 5.7 billion USD in 2007, a 24% increase over 2006.

Three central factors lie behind these market changes:

- after Year 2000 and the switch to the Euro, companies have entered a new cycle of investment and are replacing their existing equipment, notably their PABX;
- more and more companies are putting their own IT departments in charge of their telecom system;
- cost-prohibitive up until recently, IP terminals are becoming affordable and no longer constitute an impediment to making the switch to ToIP.

Growing complexity of mobile challenges

One major component in the equation is the level of mobile solutions equipment in businesses: although between 70% and 80% of companies are equipped with mobile solutions, the equipment levels for individual employees are much lower – estimated by IDATE at between 25% and 30% of the workforce (or roughly 175 million people in Western Europe). Equipping employees individually is thus key to the growth of this market segment: currently accounting for 15% of all mobile users, the business segment is expected to increase its share of the total base in the coming years.

Furthermore, mobile broadband solutions (3G/3.5G) currently offer real possibilities for extending a company's information system, first through wider adoption of mobile mail solutions using a PC card or smartphones, but also with dedicated embedded applications on the mobile.

And businesses are starting to show a real interest in fixed-mobile convergence solutions, even if rollouts are still largely at the experimental stage. A few commercial endeavours to respond to demand were launched in late 2006-early 2007, including the BT Fusion Corporate and Orange's Unik Pro packages. Here, Orange is focusing more on a still relatively simple technical concept borrowed from the residential market, and aimed largely at the low end of the SME segment. BT is starting to target the large business market which is beginning to adopt fixed-mobile convergence in earnest. The ultimate goal for these solutions is to achieve a degree of unification with communication tools, thus providing unified messaging, IM, address books and more – the main challenge being to integrate the technical complexities of their customers' systems, and particularly the security and applications layers.

Growth of the IT services and software market

The IT services and software market grew by roughly 6.5% in 2007, with the most dynamic segments being ERP, CRM, BI and security.

IT outsourcing is evolving – being adopted by smaller businesses, and becoming more selective for the applications involved.

The convergence of IT-telecoms, new issues linked to mobile infrastructure (particularly with the integration of M2M applications and dedicated business applications for employees), the vast array of security issues (integrating continuity of service procedures), along with ERP and SOA projects, constitute the main reasons which are driving businesses to outsource a part of their IT activities.

SMEs: highly coveted target for all players

Small and medium-scale businesses form a disparate target market. With a wide array of approaches to ICT integration, their potential as customers is pluriform. As concerns ICT equipment, the SME segment is currently in the throes of a double-edged trend: upgrades for shared equipment, whose take-up levels have stabilised (the PABX base being replaced by IP solutions, and a shift from classic Internet access to an IP VPN architecture), and a rise in individual equipment levels, particularly for mobile phones and laptop computers. The use of flat rate bundles is tending to rise – whether fixed/mobile, fixed calling/Internet access or bundles including all three – and they have now been adopted by one in three small and medium-scale enterprises.

Having been spurred initially by fixed calling-Internet convergence, this trend is expected to pick up steam in the coming years thanks to recently launched fixed-mobile convergence packages for businesses which will have an impact on billing (single invoice) and mark the end of a segmented view of business telecom services.

Telcos, cellcos and IT vendors are all looking to SMEs as a source of growth for their market and a major strategic focus: IT companies and software giants, such as SAP, Salesforce.com and Google, are working to penetrate this segment by adapting their marketing mix to the complexities and disparities of the SME market. Web 2.0 is one of the elements involved in developing packages for businesses: Web 2.0 tools are used by close to one-fifth of all American businesses, with a further 8% planning on implementing them in 2008. Software publishers are targeting small and medium-scale enterprises specifically, developing online applications based on Web 2.0 principles, incorporating concepts of personalisation, combining the company's data and interactive services, and making it possible to create solutions that are financially affordable and easy for small structures to integrate. ERP specialists which have been targeting SMEs for some time (including Cegid, Sage and Ciel) or which are focused on one area of the market in particular, will be facing competition from more generalist players, making a concentration and redefinition of the landscape a real possibility in the coming months.

Player strategies

The 2006 trends of market concentration and the acquisition of firms specialised in business telecommunications are staying the course, with cases in point this past year that include the takeover of Completel Europe by Altris, a shareholder in French cableco Numericable; KPN's acquisition of Getronics; the push by Orange in India and BT's continued investments in IT services, integrating CS and Net25's facilities management activities.

Following through on the trends that shaped the previous year, all IT market players have been involved in mergers and acquisitions (M&A), consolidating their business and diversifying their revenue sources. While Oracle extended its acquisitions to BEA Systems, the sensational news came from SAP which announced the takeover of Business Object in Q4 2007, for the sum of 4.8 billion USD. According to SAP, the goal of this takeover is to allow them to strengthen

their position in the business applications market with an expanded catalogue of performance optimisation and management solutions. India was particularly fertile ground for acquisitions in 2007: to expand their offshore clientele and respond to the rupee's rising value, Indian software and IT firms are working hard to forge themselves a position in Western markets. This strategy has inspired Chinese firms which want to complete their ascent in the telecom hardware market with the creation of a powerful IT services sector.

And, finally, whereas businesses' main contacts for telecom projects have traditionally been carriers, integrators and equipment suppliers, IT departments now have to deal with the growing expertise of the workforce, as users have acquired experience through instant messaging, social networking sites and, more generally, Web 2.0 developments (such as wikis, blogs, RSS feeds and Ajax). It is by building on the momentum of consumer applications that the Internet's leading players, along with certain software providers, are working to gradually carve out a presence in the business market: specialised search services, corporate social networks, cooperative tools… Microsoft's goal to generate 25% of its revenue through advertising can be correlated with the steady progress in making its desktop suite (Live) available online, in a bid to rival Google's clearly stated ambitions.

A changing market

IT services in the business world

Europe's IT services market grew at an average rate of 5.5% in 2007 (up from 5.3% in 2006). In 2008, it is expected to generate one-third of the global market's predicted revenue of 440 billion EUR.

Hardware maintenance and intellectual services

The credo of 'increasing value' held by the majority of European and global service companies correlates with the simple fact that high pressure on prices is weighing on the hardware maintenance market and cutting the players' margins to the bone. The reasons for declining market growth can be found in part in the changing purchasing habits of CTOs, who are opting more and more for long-term outsourcing contracts.

A company's development now hinges on a strategy that integrates IT as one of the pillars of its business, contributing fully to its growth and no longer a simple cost item. Businesses wanting to gain greater control over their information technologies, IT management and innovation, IT risk management, IT purchasing… are turning more and more to consulting firms – which explains the roughly 7% increase reported for these types of services in European markets in 2007.

In larger firms, purchasing departments are working increasingly in tandem with CTOs in a bid to streamline and optimise costs, particularly when contracting intellectual services. They are pushing for the establishment of 'flat rate' type agreements containing results-based commitments, rather than more traditional 'management' type contracts: all IT service contracts are affected by the trend, whether for application or systems integration services, or for multi-year Third Party Application Maintenance (TPAM) contracts.

Extended ERP (including business solutions), the development of embedded systems and collaborative work solutions will all play a major role in the development of Europe's services market in the coming years.

Outsourcing

The number of outsourcing contracts worth over 50 million USD dropped sharply last year (-15%), as did the outsourcing market as a whole. It is still too early to be able to assess the impact that the financial crisis triggered by the sub-prime debacle in North America will have, but it seems entirely likely that it will have a more immediate effect on companies' IT budgets than was originally thought, particularly in the financial sector. The first effects are starting to be felt, and will be particularly visible in 2008. Although the fallout has crossed the oceans, it is not single-handedly responsible for this decline which is the logical consequence of shorter-term and smaller contracts. Outsourcing is now no longer synonymous only with "the search for solutions to unresolved problems". Outsourcing polices are becoming more measured: CTOs want to avoid global outsourcing to a single vendor. Above all, they want to maintain control over their projects and as much as possible over their providers. This strategy could mean a widespread return to in-sourcing or to selective outsourcing, at the expense of global outsourcing.

India: champion of offshoring

With a market of roughly 40 billion USD in 2007 and a growth rate of 30%, according to NASSCOM, India remains the great specialist in offshore services. Far from resting on its laurels, it is now working to redefine its strategy. Faced with an increase in the price of services, due to a 10% salaries increase, along with a rise in the value of the rupee and neighbouring China's growing power, Indian firms are diversifying their strategy in a bid to move closer to their client markets and sustain their economic development. A wave of M&A has been unleashed, and it appears that these are only the precursor early days of the battle to come.

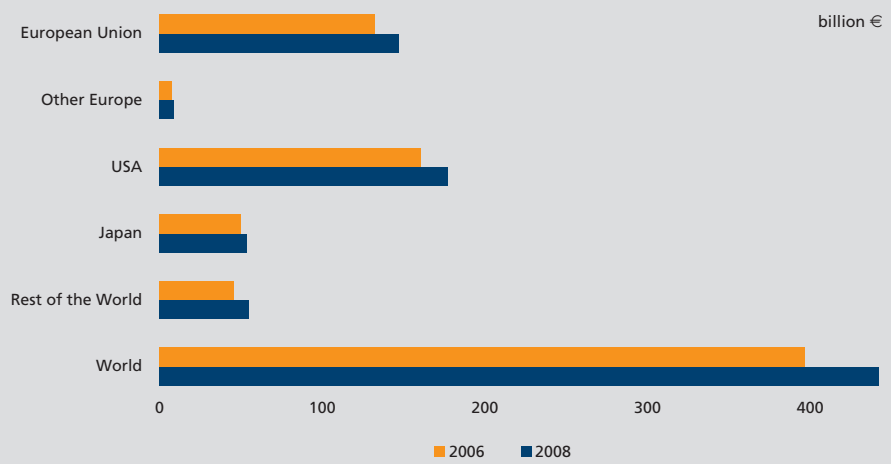
Comparison of Indian and Western IT service providers revenue

(billion $)		2005	2006	Growth rate
Indian software houses	HCL Technologies	0.8	1.0	31%
	Infosys	1.6	2.2	36%
	Satyam	0.8	1.1	39%
	Tata Consultancy Services	2.2	3.0	36%
	Wipro	1.9	2.4	26%
Western software houses	Accenture	17.1	18.2	6%
	Capgemini	7.0	7.7	10%
	CSC	14.6	14.9	2%
	EDS	19.8	21.3	8%
	IBM Global Services	17.2	17.3	1%

Source: IDATE

Global IT services market

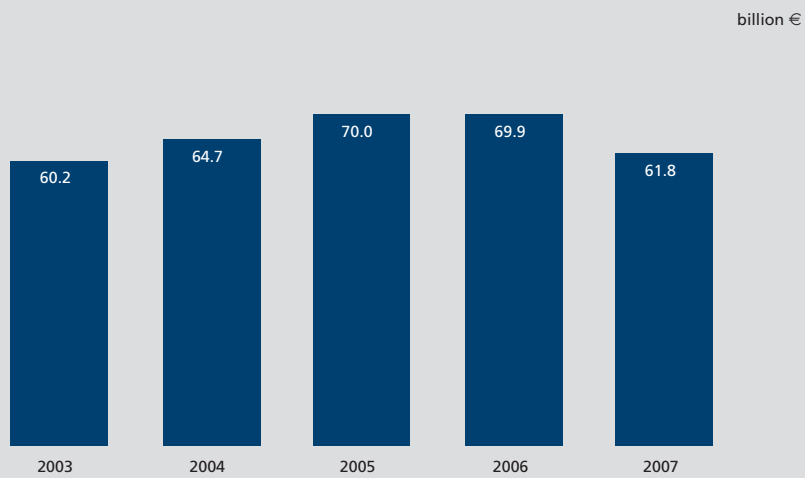
Revenue growth between 2006 and 2008



Source: EITO

Cumulative worlwide annual income of outsourcing contracts

… for contracts worth over 50 million USD



Source: TPI

Demand still rising steadily

Enterprise data and voice services: usage and equipment levels

DSL: driving an increase in VPN solutions…

The business broadband market continues to grow: offering very affordable high-speed access, DSL is a major contributor to the current momentum in IP VPN architectures, particularly in SMEs and large corporations' smaller sites. Businesses have been adopting VPN over DSL solutions and leaving traditional leased line solutions behind, while also enjoying increasingly faster connections – a shift in the market that is helping offset losses for traditional data operators.

Western Europe's broadband market has reached maturity: at the start of 2007, 69% of small and medium-scale enterprises in France were connected to the Internet, with a one-year growth reservoir of four points. As for access technologies, the landscape is relatively unchanging: DSL is used by eight out of 10 connected companies, and by close to 55% of small and medium-scale businesses. In the UK, a good 77% of SMEs were connected to the Net at the end of 2006, 62% of them via broadband – a figure that rose to 70% for companies with a staff of between 50 and 250.

The next challenge for operators will be to provide a response to businesses' demands for ever-increasing bitrates.

Businesses and fixed telephony: migrating to IP…

The base of fixed telephone connections in businesses appears to have stabilised, with no real decline – as yet? – due to the growing use of IP telephony or replacing landline phones with mobiles. Telephony over IP take-up has not yet altered the rate of renewal for PABX equipment, and the switch to hybrid and full IP solutions appears to be keeping pace with the natural renewal rate of equipment, and not moving ahead of schedule. In small and medium-scale businesses, the pace is slow: in France, for instance, 8 out of 10 SMEs equipped with a PABX still operate separate phone and Internet networks. The next cycle of equipment replacement will involve a massive switch from PABX to IP-based solutions.

Across Europe, revenue for the PABX market (all technologies combined) is thought to have risen by around 0.4% in 2007, for a market worth 11.7 billion EUR, but stagnation is expected to set in during 2008. 2007 was thus a pivotal year for scheduled equipment replacements, with some projects having been moved forward, particularly in large European corporations.

… and telecoms-IT convergence

The trend of telecom-IT convergence is starting to materialise, with the adoption of ToIP solutions acting as the catalyst. The ubiquity of broadband access has allowed businesses to upgrade their telecom infrastructure and has spurred the adoption of telephony over IP solutions, thus bringing issues concerning telecoms (access services and network architecture), workstations and applications under the same umbrella.

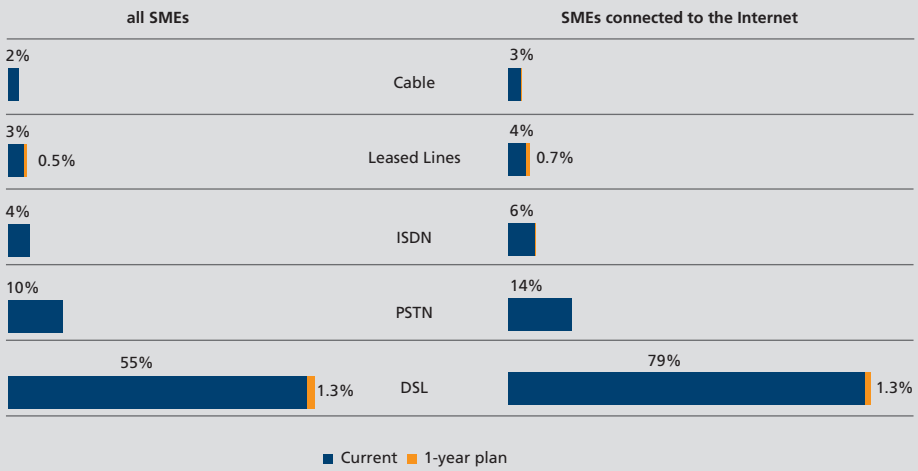
Europe's enterprise fixed data services market

	2004	2005	2006	2007	2008
France	5.2	5.5	5.4	5.6	5.8
Germany	7.5	8.1	8.5	9.3	9.7
Italy	4.0	4.8	5.4	5.8	6.0
Spain	2.7	3.0	3.5	3.6	3.7
United Kingdom	6.6	7.0	8.7	9.0	9.4
European Union	35.6	38.4	43.7	45.4	47.2
Other Europe	1.7	2.0	2.4	2.6	2.7
Total Europe	37.3	40.4	46.1	48.0	49.9
Annual growth		7.9%	5.8%	4.1%	4.0%

Source: IDATE from EITO

Internet access by technology

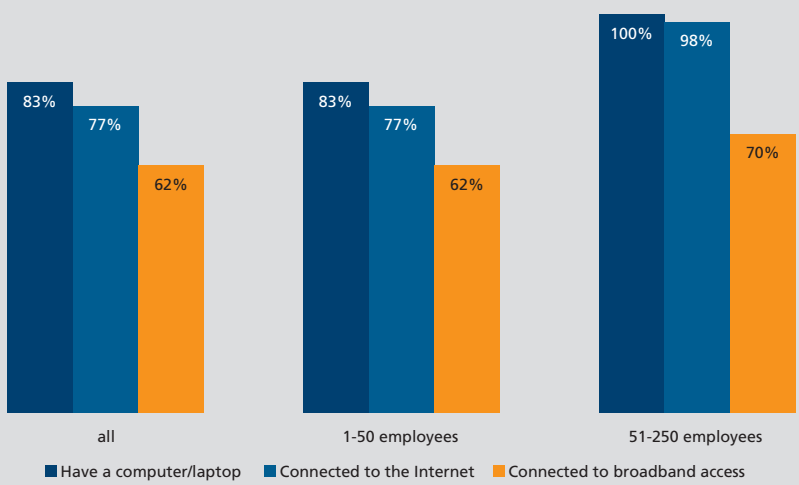
Internet access penetration in SMEs (0 to 250 employees) in France, 2007



Source: IDATE

Internet access by company size

Internet access penetration in SMEs (0 to 250 employees) in UK, 2007



Source: OfCom

Migration from classic telephony to ToIP

Voice over IP in the business world

ToIP inevitable but still a complicated affair for businesses

With its inexorable and steady growth, the telephony over IP (ToIP) market is taking over from traditional TDM solutions. Full IP ToIP projects are increasingly common and gradually forming the majority of solutions in use.
For businesses, the two chief incentives for switching to ToIP are the need to replace existing equipment and to generate savings on free, inter-site (i.e. on-net) and outside (off-net) calls, along with the ability to reduce costs through reducing the number of phone lines. In terms of ROI, the financial impact of a migration to IP telephony is favourable on the whole, though not across the board. The decision-making and adoption processes are nevertheless complex, due to the variety of technical solutions available (TDM, hybrid, full IP, IP Centrex, mobile PBX). There is also the added difficulty in choosing the right operating model with a raft of considerations such as in-house or outsourced, degree of outsourcing, and whether or not to have the solutions hosted by a third party.

VoIP penetration increases with company size

The larger the company and the more sites it operates, the greater the likelihood that it will adopt a VoIP-based solution. In 2006 in France, 12% of small and medium-scale businesses were equipped with VoIP solutions, compared to 56% of large companies. The penetration rate among big businesses continues to grow steadily and is rising rapidly among SMEs.
The SoHo market segment is displaying similar behaviour to the consumer segment, preferring software-based solutions such as Skype, or all-in-one boxes that allow the use of classic phone sets. It is only in companies with 20 or more employees that we find a significant rate of PABX equipment, and in companies with a staff of 50 or more that IP PBX are found, along with real issues concerning the company's voice network that need to be managed properly.

Stiff competition among vendors

Because of the current market landscape where all vendors need to have a ToIP solution on offer, several key trends are emerging:

- competition between equipment suppliers is heating up, putting traditional vendors (with an existing base) and new entrants marketing full IP solutions head to head;
- among new entrants which entered the fray with no existing user base, Cisco has managed to grab a sizeable share of the market. Meanwhile, traditional vendors, which include Alcatel Lucent, Avaya, Nortel and Siemens, have expanded their TDM line-up to include IP-based solutions;
- a great many manufacturers are vying for market share, and all are streamlining their positioning in terms of product line and target market. The market is expected to become more concentrated between 2008 and 2012, particularly for new products targeting the SME market;
- voice-data convergence has also triggered a change in the integrator and operator market structure. Telcos are taking up positions through hosted IP and IP Centrex solutions, with the latter emerging as an increasingly popular choice, even though it is still little used by businesses in Europe;
- IP convergence on the networks has meant that more and more operators are marketing VoIP packages for IP VPN (including access and traffic).

Market outlook up to 2010

Over the course of 2008-2010, demand for hybrid solutions will decrease in favour of full IP solutions based on IP PBX and IP phones. IDATE forecasts that, by 2010, 70% of all lines will operate over IP ports, with the remaining 30% still in TDM. The installed IP base will be divided between full IP PBX, hybrid IP PBX and IP Centrex solutions. The most optimistic predictions concerning IP Centrex indicate that, by 2010, these solutions will account for 20% of the global market (in number of ports).

Growth of the world business telephony market by type of equipment

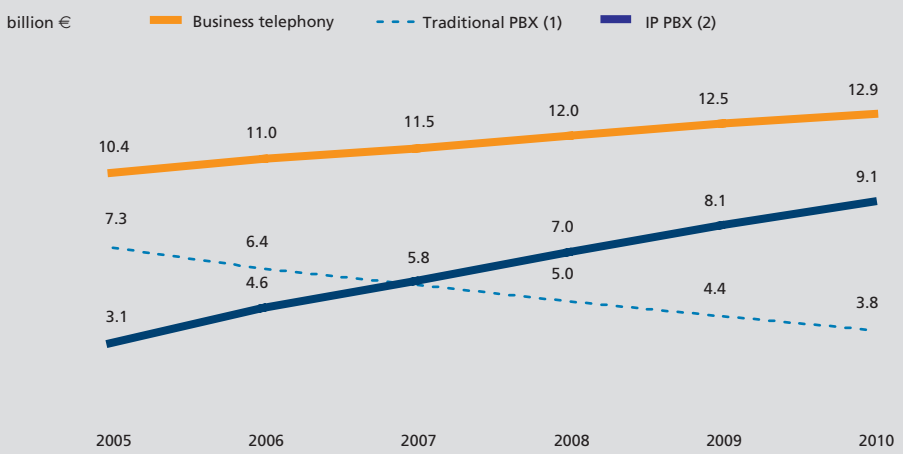
(million $)	2005	2006	2007	2008	2009	2010
Business telephony	10 398	11 005	11 450	11 995	12 492	12 908
	6%	6%	4%	5%	4%	3%
Traditional PBX (1)	7 286	6 383	5 700	5 004	4 374	3 775
	-4%	-12%	-11%	-12%	-13%	-14%
IP PBX (2)	3 112	4 623	5 750	6 991	8 118	9 133
	38%	49%	24%	22%	16%	13%

(1) including TDM PBX and KTS
(2) including IP phones

Source: IDATE

Steady growth for ToIP in the business world

Global ToIP market now greater than traditional telephony

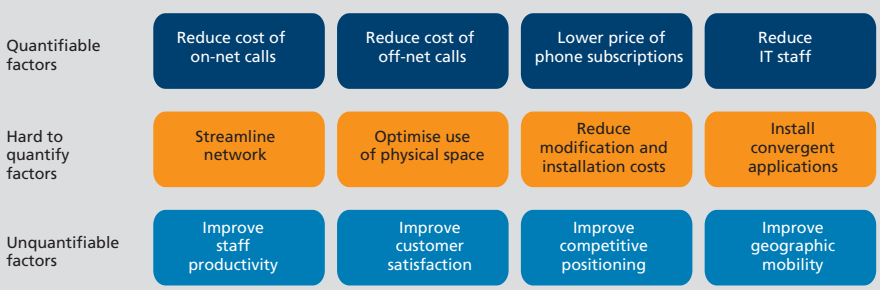


(1) including TDM PBX and KTS
(2) including IP phones

Source: IDATE

Factors enabling switch to ToIP

Factors driving demand and chief decision-making criteria



Source: IDATE

Mobiles in the business world: usage and equipment

A growing market

Having increased by 8.2% in 2006 in Western Europe, the mobile subscriber base, residential and business combined, continued to grow at a steady pace to reach 438.4 million users at the end of 2006. Although the percentage of businesses equipped with mobiles varies between 70% and 80%, the level of equipment per employee is much lower. IDATE estimates that between 25% and 30% of staff members are equipped with a mobile phone, out of a total work force in Western Europe of 175 million people. Equipping staff is thus a major part of the equation: currently accounting for 15% of all mobile users, the business segment is expected to increase its share of the total base in the coming years.

Mobile broadband driving increased consumption

The solutions (services and billing modes) that are currently marketed to mobile business customers depend on operators' rollout strategies and on the upgrades made to their mobile broadband network. The central focus is now shifting from coverage, per se, to the speeds that operators can deliver to roaming users. This focus on speed can only be temporary, and the natural course of events will result in offering these high speeds as standard fare to all customers in the near future. The underlying objective is still to spur the business mobile data market's momentum by delivering bitrates that are increasingly comparable to those delivered to fixed workstations.

The financial gambit lies in supposing that the increase in traffic generated by greater rates of consumption will benefit the higher volume flat rates, which will in turn mean an increase in data ARPU, despite the sharp drop in per Mb prices (under current rate plans, the price of Mb in the highest volume packages can run as low as 0.10 EUR).

As concerns the products themselves, this shift in position means a change in the data packages on offer, including ever-larger volumes and a growing trend of unmetered consumption. In addition to speed, operators are banking on the fact that, as was the case on the fixed Internet, the rise in data consumption will also be enabled by new rate plans. All these packages marketed by mobile operators are being altered by the arrival of broadband solutions that offer greater ease of use: businesses will thus tend to expand their information systems to mobile use, and so giving a boost to basic applications such as e-mail, and especially to businesses applications dedicated to the user or the machine (M2M).

New range of added services to secure customer loyalty and increase revenue

Alongside voice and data services which make up the core of their offering, mobile operators are expanding their product line, offering solutions integration with the company information system, deployment support, fleet management and dedicated user services. Not all enjoy the same commercial potential: some are clearly viewed by users as simple add-ons that are being offered for free while others have a real commercial value, but most of these are devoted to fleet management rather than user services.

With these new offerings, operators are working to diversify their revenue sources, and especially to minimise the drop in ARPU. Furthermore, when renegotiating contracts, operators can use these new packages to incorporate quality of service and SLA commitments and, more significantly, to lock their customers in for longer periods of time, and so limit the potential impact of churn out.

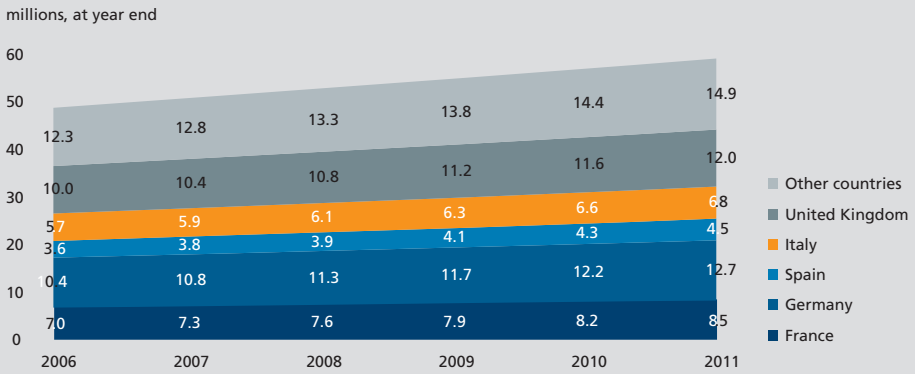
Percentage of business mobiles in Western Europe using data services

(at year end)	2006	2007	2008	2009	2010	2011
France	4%	5%	7%	10%	15%	22%
Germany	4%	5%	7%	10%	15%	22%
Italy	3%	4%	6%	9%	13%	18%
Spain	2%	3%	4%	7%	10%	15%
United Kingdom	5%	6%	9%	14%	20%	28%
Total Western Europe	4%	5%	7%	11%	16%	22%

Source: IDATE

Business mobile market in Western Europe

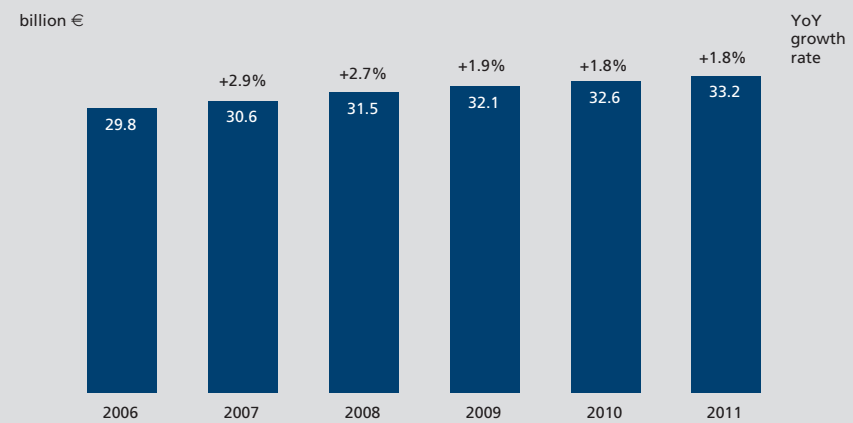
Growth of business mobile base in Western Europe



Source: IDATE

Business mobile market in Western Europe

Market outlook for business mobile services in Western Europe



Source: IDATE

Still a growth market

Business software

The business applications and systems software market has sustained its momentum of 2006, enjoying a 6% increase and an even greater rate of growth in certain segments including security and SOA applications.

SMEs are growth driver

Just as in the IT equipment and telecoms markets, both of which enjoyed a strong revival with the switch to the Euro in 2000, and now, seven years after the last major investment cycle, it is the turn of the software market to engage in a new period of intensive renewal and re-equipment. Small and medium-scale businesses are the chief driver of this demand: most all are currently under-equipped when it comes to business software. Added to this, software publishers appear to be making SMEs a priority, with such players as SAP, Salesforce.com and Oracle all targeting small and medium-scale companies in a bid to expand their customer base, developing dedicated packages that require little or no integration.

Businesses equipped with legacy systems are still spending substantial sums on maintenance, which is another major growth driver for the applications software market. The trend towards packaged applications for SMEs is helping to spur investments in new applications, overtaking the maintenance of existing systems. This shift will make it possible for businesses to overcome the rigidity and disparities of their systems, and thus allow their IT operations to be a more integral part of their corporate strategies.

ERP, security and BI at the heart of current growth

The market for enterprise resource planning (ERP) is still by far the chief growth driver the world over, with roughly 50% of all investments being in this type of application. The market is benefiting from a positive alignment of trends. Growth is being sustained by investments in traditional applications such as finance, CRM and SCM, within a renewal/upgrade market and a hardware market that are paying considerable attention to SMEs, viewed as a major source of future growth. As a result, the ERP segment is expected to grow at a greater rate than the European software market as a whole.

Security applications make up the second source of growth for systems applications. Phishing and system intrusions are just two of the potential threats that are driving CTOs to invest in the software layers that will help make their company's information system safe. Sales of security applications continue to rise, reporting a roughly 10% increase in 2007, thanks in part to continued investments in data storage equipment and in service continuity processes, which are particularly sensitive points in large companies.

Europe's business intelligence (BI) market is also helping to spur the enterprise software market. The growing use of these solutions can be attributed to the propagation and growing ubiquity of decision support computing in a range of areas and in all of a company's departments. With growth estimated at close to 10% in 2007, this market is expected to continue to expand in 2008.

Investments earmarked for SOA applications are also likely to continue to rise, and so have an impact on all of the application market's sub-segments. These architectures will merge packaged software and specific developments, while integrating the various components of desktop applications, business software and other solutions.

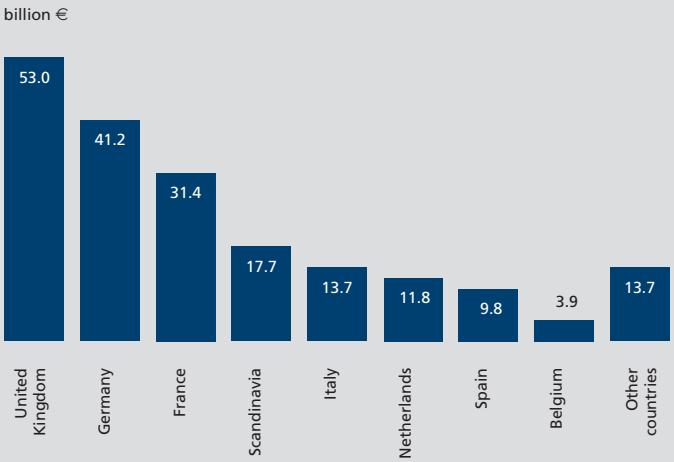
Software markets around the globe

(billion €)	2006	2008
European Union	71.5	81.2
Other Europe	4.1	4.7
USA	89.9	105.6
Japan	22.7	24.5
Rest of the World	18.6	22.5
Total	206.8	238.5

Source: *EITO*

The UK, driving the software and services market in Europe

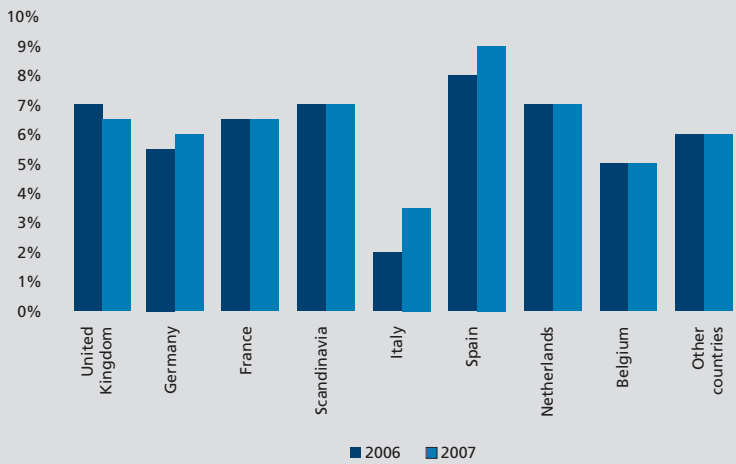
Breakdown of software and services market revenue in Western Europe, 2006



Source: PAC

Software market in Western Europe

Market growth, 2006 - 2007



Source: Syntec Informatique

Towards a growing role of SMEs

B2B commerce

e-business applications still under-used

Business-to-business commerce is an increasingly integral part of companies' commercial practices. B2B transactions in Europe totalled close to 1,000 billion EUR in 2007, with France accounting for between 70 and 80 billion EUR of that. Virtually all European businesses with over 10 employees have Internet access, but the challenge now is to incorporate the use of advanced e-business applications into the daily commercial exchanges between businesses.

Data interchange platforms still little used

According to the latest survey by e-business W@tch, conducted with European businesses in 2006, there are still sizeable disparities between large companies and SMEs when it comes to the use of advanced e-business applications. In 2006, only 12% of all European companies were equipped with a system for electronic data interchange with their suppliers: 8% of SMEs (10 to 49 employees), compared to 21% for large firms with over 250 employees.

This gap is particularly noticeable in the UK, with only 3% of SMEs equipped compared to 32% for large companies. On the contrary, SMEs in Italy and Poland are better equipped with e-business systems than the larger firms – a fact which is no doubt due to the corporate fabric in these two countries which are home to few major corporations.

Uneven behaviour in online buying and selling practices

Businesses generally buy online much more than they sell. As a result, close to half of all European companies (48%) place orders online, but only a quarter take orders from customers on the Web.

As concerns online orders, there is a significant disparity between the practices found in small and medium businesses and those of large corporations: more than two-thirds (68%) of large firms use electronic networks to place orders with their suppliers, compared to 44% for SMEs.

There are also considerable variations in e-businesses practices in Europe from sector to sector. Close to three-quarters of businesses in the telecommunications and consumer electronics sectors order from their suppliers over the Web, compared to only 40% of companies in the footwear and beverage sectors. As to those who sell their wares online, once again we find the telecommunications and electronic products sectors at the top of the list, alongside the travel industry.

It is therefore not a stretch of the imagination to say that small and medium-scale enterprises in Europe are still reluctant to acquire and use advanced e-business applications. Electronic transaction processes are still poorly integrated into European SMEs' internal organisation. But small and medium-scale businesses' increasing integration into large corporations' supply chain will undoubtedly help to erase the disparities in B2B practices across the Old Continent.

Businesses equipped with an electronic data interchange (EDI)

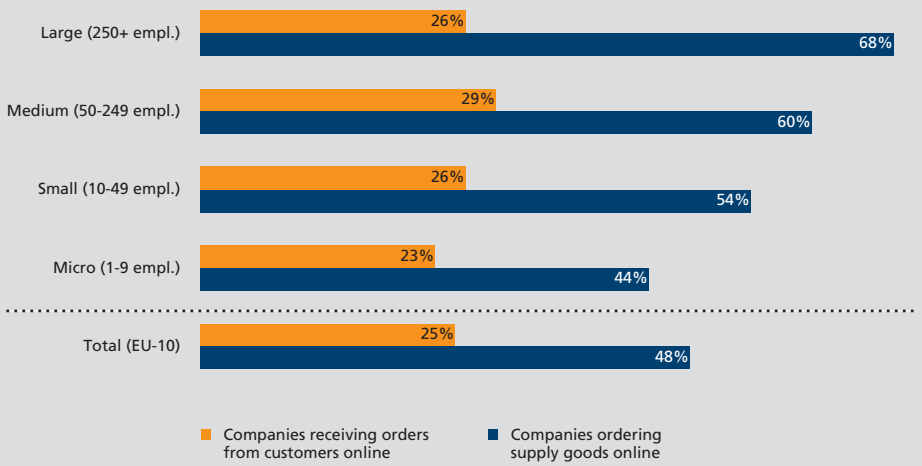
(%)	Small companies (10-49 empl.)	Large companies (250+ empl.)
Czech Republic	2%	17%
Finland	24%	52%
France	16%	27%
Germany	5%	18%
Hungary	3%	10%
Italy	15%	8%
Netherlands	4%	18%
Poland	11%	10%
Spain	9%	13%
United Kingdom	3%	32%

Base: panel of firms using computers

Source: e-business W@tch survey 2007

Large companies making greater use of Internet for trading

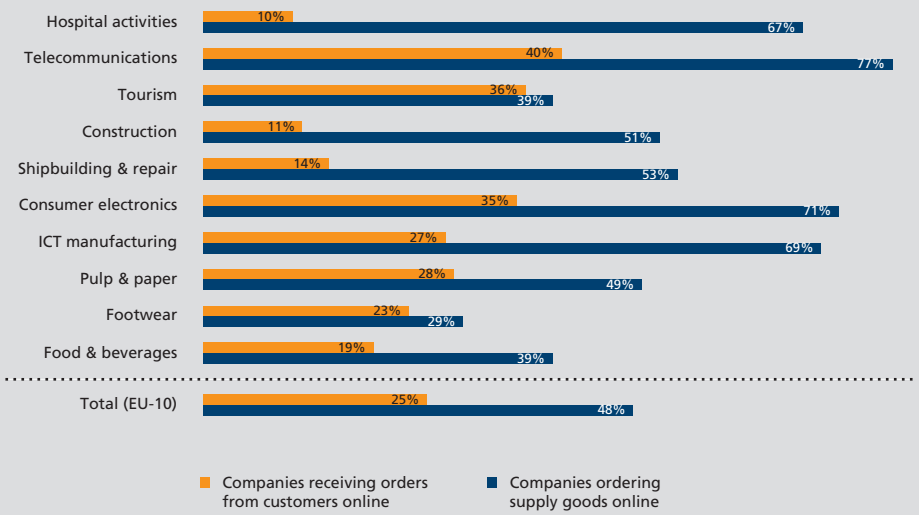
Companies that place and/or take orders online (by company size and %)



Source: e-business W@tch survey 2007

Telecommunications sector making greatest use of Web for trading

Companies that place and/or take orders online (by sector and %)



Source: e-business W@tch survey 2007

Still rising in Europe

e-commerce

Growth rate still high (+30%)

Most analysts were expecting a drop in the growth rate for e-commerce in Europe in 2007, but it does appear that the popularity of online shopping is showing no signs of waning.

According to IDATE, e-commerce revenue will have increased by over 30%, on average, in Western Europe's five major markets in 2007, to reach a total 124 billion EUR (excluding financial services). Spain, Germany and France are expected to report the highest increases in online retail sales in 2007 (an average increase of more than 40% over 2006) while the United Kingdom, Germany and France will remain Western Europe's largest markets.

In the United States, meanwhile, online sales for 2007 are expected to total 129 billion USD (96 billion EUR), or 3% of all retail sales in the country. E-commerce revenue is estimated to have increased by 13% over 2006, much less than in Europe. China, on the other hand, is still boasting a very healthy growth momentum, with e-commerce revenue having doubled since 2006 to reach a total 29 billion EUR in 2007.

Europeans shopping online more and more

According to EIAA Online Shoppers, 78% of European Internet users shopped online in 2006. Among Europe's five largest markets, it was the British (89% of them) who were the most avid online shoppers, and the ones who spent the most: an average 1,201 EUR in 2006, well ahead of average annual online spending in Europe, which totalled 750 EUR.

Travel, tickets, cultural goods (books, CDs, video games), stereo equipment and home appliances were the most widely sold items. Only 3% of French Internet users and 4% of German ones bought food products online in 2006, compared to 16% for online shoppers in the UK. This is thus a sector which still enjoys considerable growth potential.

The Internet is increasingly popular for C2C sales

If the complementary nature of online sales and sales in retail outlets is nothing new, and the ability of the Internet to influence consumer behaviour, so is the Web also becoming increasingly popular as a direct sales channel between individuals. In 2006, more than 170,000 Europeans were living off the income they generate from selling goods on eBay. In the United States, through its eBay ProStores programme, the online auction site hosts 750,000 professional sellers. This thriving market is enabling the creation of thousands of micro-enterprises.

According to FEVAD, by the end of 2006, 64% of Internet users in France had bought or sold items through a site that offers a consumer-to-consumer sales platform (eBay, PriceMinister, ParuVendu...). The number of French 'netizens' that report having used one of these sites has increased by 22%, according to Médiamétrie-NetRatings. Speed, practicality, user-friendliness and a wide selection of items are just some of the assets attributed to these sales platforms that began their ascent on the Web five years ago.

Social networks stimulate e-commerce

Social networks such as MySpace, Facebook, Friendster, Orkut and Bebo, which attracted over 114 million visitors over the age of 15 in June 2007 alone, are helping to spur online sales, according to a report by comScore, as their most active members are generally more inclined than the average Internet user to visit e-commerce sites. One of the challenges for the social network is to transform their visitors in potential buyers.

Another novelty is the growing media coverage given to Second Life, which was created back in 2003, and, more generally, to the emergence of a virtual world in 3D as a possible e-commerce platform. Whether it is a facet of media hype or a genuine major trend, it nevertheless remains the case that many of the Web's biggest players, including Google, Microsoft, Sun (Wonderland) and IBM (Innovate Quick), are starting to invest massively in 3D.

Online retail sales forecasts, by country

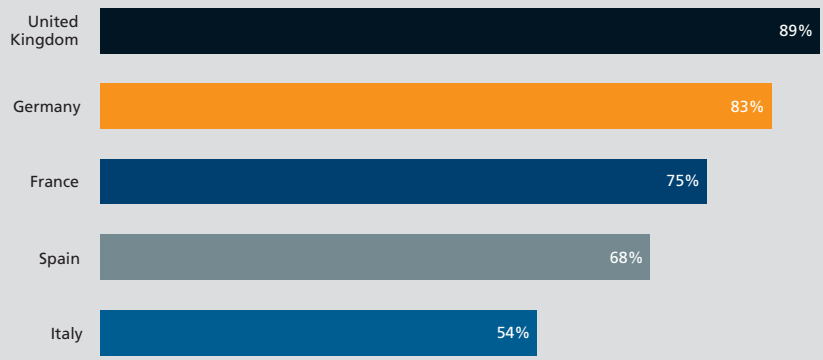
(billion €)		2006	2007	2008	2010
Western Europe	(Total)	88.2	123.9	168.6	221.3
	France	12.7	17.4	23.5	32.7
	Germany	19.0	27.6	37.4	51.3
	Italy	3.8	6.2	9.1	12.5
	Spain	4.0	5.3	10.3	19.4
	United Kingdom	30.2	37.6	45.7	52.2
	Rest of Europe*	18.5	29.8	42.6	53.2
North America	USA	84.5	95.6	114.0	140.0
Asia-Pacific	China	14.0	29.4	56.0	181.4
	Japan	30.0	37.5	45.0	62.8
Rest of the World	Central and Eastern Europe	16.0	18.4	25.0	40.0
	Latin America	14.0	22.4	32.0	70.0
	Africa and Middle East	8.0	10.4	14.0	24.0
Total		254.7	337.6	454.6	739.5

** NL, BE, LU, NO, SW, DK, FI, AU, CH, IR, PT, GR*

Source: IDATE

More Europeans are shopping online

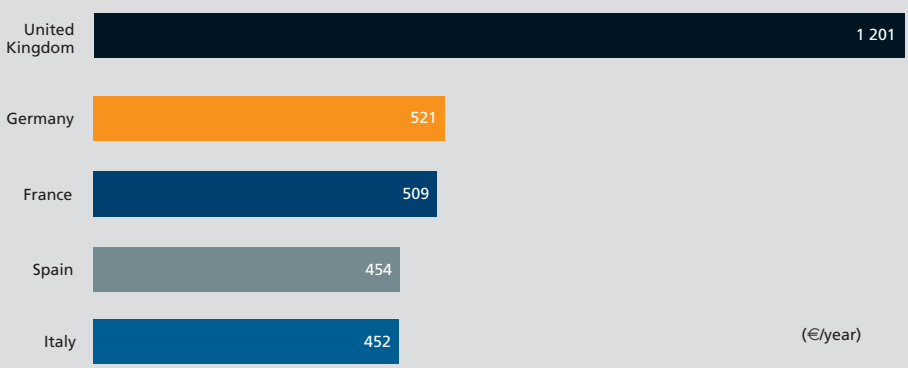
Percentage of internet users who shopped online, 2006



Source: EIAA Online Shoppers 2007

British biggest online spenders

Average amount users spent online, 2006, by country



Source: EIAA Online Shoppers 2007

Continued development

e-government in Europe

Increasingly sophisticated e-services

Government services online have been making strides across the European Union since 2001. The European Commission is measuring the evolution of e-government in Europe over time by tracking 20 basic public services offered to citizens and businesses. For businesses, the services being monitored include social security contributions for employees, corporate tax, VAT and public procurement. The services for citizens being tracked include income tax, change of address, job search, car registration and building permits.

The development of e-services is measured with two indicators: the degree of 'sophistication' of the public services offered online, and the number of services that are fully available online. As illustrated here, stages 1 to 3 correspond to the increasing levels of sophistication which are 'information, 'one-way interaction' and 'two-way interaction' with stage 4 corresponding to the 'transactional' stage, and stage 5 to the 'personalisation' stage (proactive and automatic; users do not have to submit a request to take advantage of the service).

By September 2007, the degree of sophistication achieved by public services available online in the European Union had reached 76% (compared to 75% in April 2006 and 65% in October 2004), while the full availability of services had reached 58% (compared to 50% in April 2006). These figures have been rising steadily since 2001, when the first measurements were taken – particularly fast from 2001 to 2004, and at a slower pace from 2005 to 2007. The most recent progress corresponds to the gradual shift from two-way interaction to the fully transactional stage.

Disparities between countries and available services

Austria still tops the ranks for the 20 services whose progress is measured by each of these two indicators: the Austrian e-government platform has reached a very high level of sophistication and optimisation. Some countries, such as Slovenia, have progressed rapidly thanks to their small size, combined with government policies that support the swift construction of information systems.

Also noteworthy is the widening gap in scores as we move down the ranking. The gap between the leader – Austria, with 100% – and the lowest-ranking country is over 90%. Achieving full availability for online services requires front office and back office integration, and so a real change in the approach taken to providing services. This approach requires both sizeable investments and political will, which means time and constant effort to reduce the disparities between the countries.

In 2006-2007, the greatest strides were made in the services provided to citizens, even if there is still a considerable disparity between the services available to businesses and those available to the general public – the latter being the less well- served. As a result, there is still a good deal of room for improvement in the services on offer to citizens who are very demanding in terms of level of service: they expect a level comparable to what they receive in a commercial environment.

Development of online public services in EU Member States

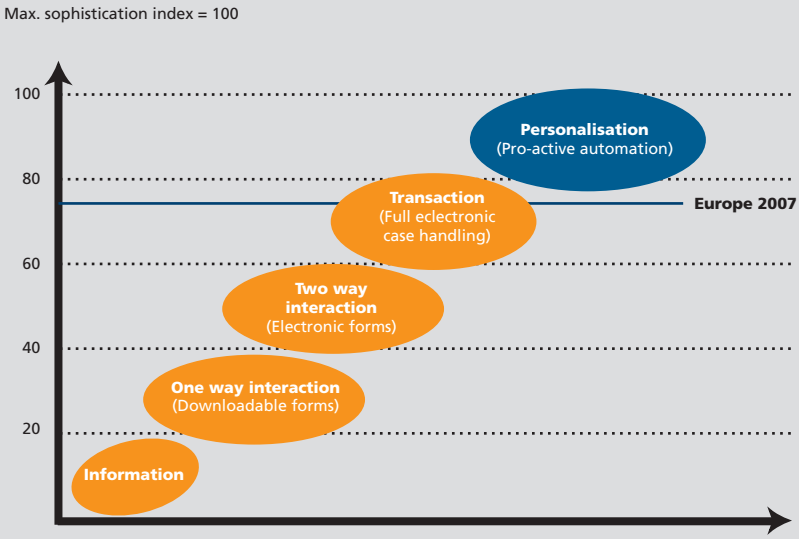
Index	Online sophistication		Full Availability online	
	Apr 06	July-07	Apr 06	July-07
Austria	95	100	83	100
Slovenia	87	96	61	90
United Kingdom	89	90	71	89
France	85	87	65	70
Sweden	90	87	74	75
Estonia	90	87	79	70
Germany	74	84	47	75
Spain	79	84	55	70
Netherlands	79	83	53	63
Finland	85	82	61	67
Belgium	74	80	47	60
Denmark	85	80	63	63
Italy	80	79	58	70
Hungary	81	70	50	50
Czech Republic	61	71	30	55
Poland	53	53	20	25
EU(27+)*	75	76	50	58

** EU-27 plus Iceland, Norway, Switzerland and Turkey*

Source: *European Commission, from Capgemini (2007)*

Degrees of sophistication: online services in the EU

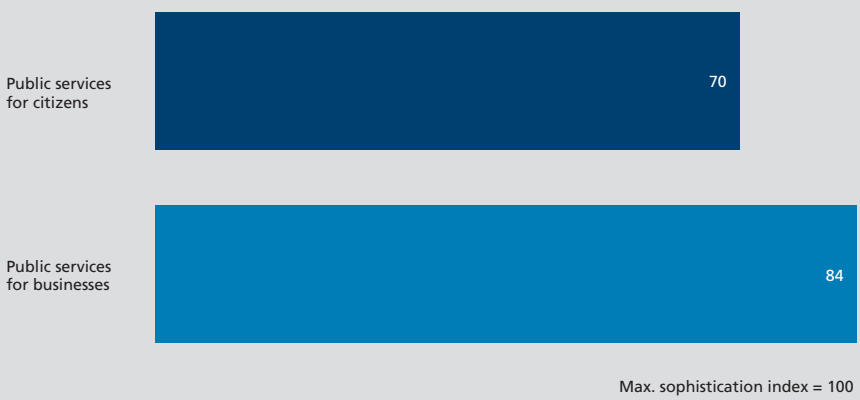
EU's position on the five-stage sophistication scale



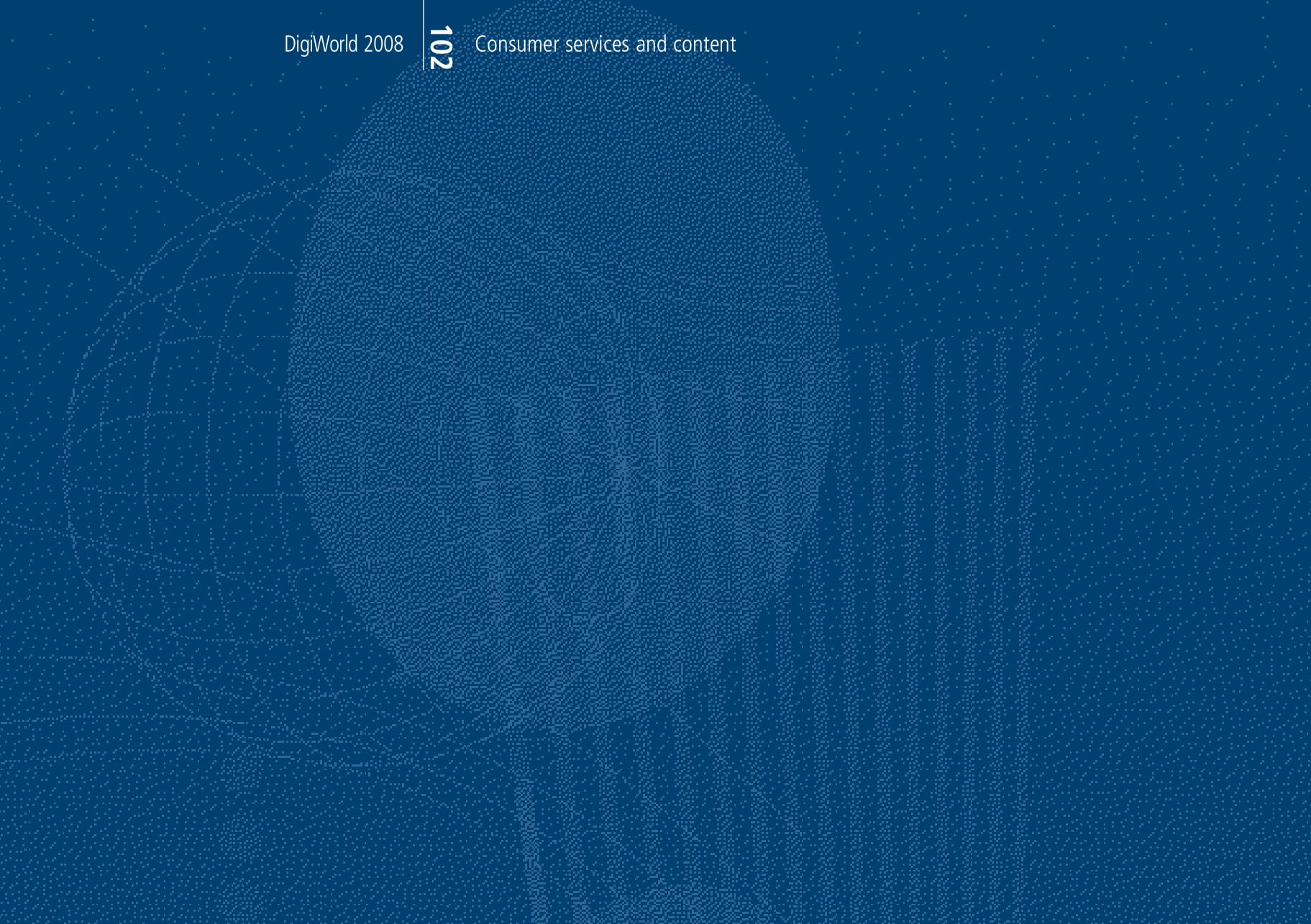
Source: European Commission, from Capgemini (2007)

More sophisticated services for businesses

Comparative performance of public e-services, for citizens and businesses



Source: European Commission, from Capgemini (2007)



V Consumer services and content

Services and content: Life 2.0

Web 2.0: social networks are meshing communication, e-commerce and entertainment…

The social networking phenomenon is expanding at a steady clip, with some 20 social networks being among the 50 most visited sites in the United States. Facebook and MySpace report a 270% and 70% increase in hits, respectively, over the past year.

Yet, rather than viewing social networking as a new segment in the Internet services market, we should see the community phenomenon as an amalgamation of the whole of the Web, combining e-commerce, information and entertainment: sites offering 'store & share' (2.5 billion photos stored on Photobucket), video sharing (39 million unique visitors a month for YouTube), blogging (estimates indicate around a hundred million blogs around the globe), dating, e-commerce (over 150 million accounts for eBay's e-payment subsidiary, PayPal). Second Life (which has 10 million 'residents') is perhaps the most fleshed-out illustration of this trend, being at once a social network and a marketplace, a potential hosting platform for all Internet services and perhaps a first draft of a future 3D Web interface.

The largest generators of online traffic, search tools are also being affected by the community phenomenon. After indexing content, after analysing the links leading to a given site, a third generation of search engine is betting on the notion of collective intelligence. Web browsing is evolving, from tag to tag, circumventing Websites homepages, while information is often being pushed to users via RSS feeds.

… and the generation gap is closing

Even if 55% of Americans between the ages of 12 and 17 visit social networking sites, and 48% of these teenagers visit them at least once a day, the user base for new electronic communication services is growing at a faster pace than the natural aging of the

generation of adolescents and young adults of the Internet era. To wit:

- among the new social networks mentioned above, there are several services whose user community cuts across the generations, including Meetic (dating) and eBay (online auctions);
- the video game sector – which was long the playground of less than 30% of the population, made up chiefly of young men and boys – is enjoying a radical expansion of its user base thanks to the success of Nintendo's latest offering and the rise of casual gaming;
- overall, the rate of use of electronic communication services by the over-55 crowd is increasing faster than among the population as a whole, and so, little by little, the gap is closing.

Web 0.5: fitful start to the mobile Internet

Seeing the Web 2.0 concept carried fully to the mobile Internet still seems a distant vision, with services as yet in the very early stages – vacillating between encapsulating operators' portals and offering a quality of Web browsing that often frustrates users. There is, though, no shortage of innovative minds at work and the bottleneck of Internet access tariffs appears on the verge of being eliminated (with the launch of unlimited flat rates); handset performance is improving steadily, thanks to a new generation of touch screen devices, and the growing number of WiFi devices enables semi-mobile access to the fixed Internet.

But providing seamless access to existing Web services cannot be the only goal for the mobile Internet since it will not be used in the same way as its fixed counterpart. Geolocalisation capabilities will constitute a major asset for new mobile services, particularly since they lend an added dimension to social networking (dodgeball.com). More generally, the mobile can become the essential tool for connecting with one's community, while gaming and 'persistent universes' will also benefit from being able to provide a continuity of service between fixed and mobile offerings.

Online advertising: many called, few chosen

It is only with the existence of aggregators that Internet advertising can offer advertisers the combination they need of sharing traffic and monetising a mass audience, together with streamlined sales prospect qualification.

The online advertising market is enjoying solid growth of around 25% a year. IDATE estimates that this is less the result of competition with other mass media (TV, radio, press, display), than the consequence of a gradual redeployment to the Web of non-media spending (direct marketing). This accounts for roughly two-thirds of all companies' advertising and promotional expenditure.

The fundamentals of Internet advertising are sound: the technical solutions are getting better and better (particularly embedded ads in online video); it offers attractive rate models for advertisers (with the introduction of pay-per-acquisition); there is still a sizeable gap between the time that users spend online and the monies being spent on online advertising; and automation of sponsored link management is opening up the online ad market to small and medium-scale businesses.

The concentration of online ad revenue is nevertheless similar to what we find in traditional media: the top 50 domains account for 91% of ad expenditure in North America, with the top 10 combined enjoying 70% of this revenue.

Content: entertainment groups hitting the Web

It is no longer useful to compare traditional and new media. In the area of video, for instance, the leading television groups invested massively in their Internet opera-

tions in 2007. And the shape of things to come is becoming clear: channels and all their programmes will be available on the Web, both live and on-demand – with 16% of North American viewers already watching broadcast TV on the Net. Having become aware of the limitations of using video-on-demand technologies to capture the DVD market (which suffers direct blows from piracy), TV channels are also deploying Catch Up TV packages (free in the US, still for-pay in Europe), in other words on-demand access to all their popular shows.

As a result, TV networks can hope to maintain a certain degree of control over their relationship with viewers – a control that the music industry seems to have lost forever. While the sale of music on a per-song basis may well be a doomed model, the principle of music services is emerging and, with it, the announced end of the distinction between downloading and permanent online access. A new generation of distributors will pay music publishers for access to their catalogue, but having to share the wealth is forcing the latter to cut back on their investments in musical creation.

Nor has radio escaped the collateral damage of piracy and the 'commoditisation' of music: music stations are having to compete directly with Internet radio stations, although talk radio is faring somewhat better thanks to the value-added of their programming.

The written press appears to be facing the biggest threat. Unlike in video and music, Internet pure players are emerging in the publishing business (auFéminin.com), and in certain areas that were once the sole domain of newspapers, such as classified ads (Craigslist) and job searches (Monster). The viability of the paid model has not been proven for either the generalist or the trade press (the Wall Street Journal is expected to switch to being fully ad-funded). At the same time, newspaper circulation is dropping and competition with the free press increasing, even for magazines. A long-term view of things could include an entirely free press, with consumers paying only for the service (printing, portage…).

Emergence of the 'mid-tail'

The concept of the long-tail is the subject of much debate, as it puts two types of content in opposition:

- premium content ('Digital Hollywood') commissioned by the top media groups, and aimed at a mass audience;
- long-tail content, enabling low-cost re-distribution of entertainment groups' back catalogues.

The emergence of a mid-tail is probably the major innovation: content with lower unitary value, whether personal, re-editorialised content or low-cost original productions, characterised by advertisers' direct involvement in their conception and financing, and created for direct marketing purposes.

Tectonic plates

If traditional content providers appear to have managed to maintain, and perhaps even boost, their business when migrating to the Web, their ability to capture the value-added of the service distribution rung still looms as a major uncertainty. Gateways to the Web, telecom operators (facing the need to invest massively in their networks to enable greater use of online video) can hope to earn a fraction of the advertising market. Acting as service assemblers, they plan on being remunerated at least as distributors. The Internet giants too can lay claim to the status of content and service aggregator, even if that strategy has yet to prove truly successful.

The use of a growing number of distribution networks does not constitute a threat, in and of itself, for content providers. It can even be viewed as a natural expansion strategy – provided that they maintain editorial and price control and that their distributors do

not take advantage of their control over the network or the portal to undertake a vertical integration strategy (net neutrality debate).

A variety of cooperation models is being tested – involving both commercial distribution and financing for content distribution. Revenue sharing is playing a growing role in the equation and could well act as the lynchpin of a viable model.

More disruptions on the horizon

The growing ubiquity of broadband heralds the advent of a period of steady innovation in Internet services. Two points can be underscored here. On the one hand, the era where video on the Web was synonymous with entertainment is over. After text, graphics and pictures, video will become a commonplace on all fixed, and later mobile, Websites, thereby increasing Website creation and network distribution costs, recreating an entry barrier for the creation of quality professional sites, upping the load on the network and injecting new resources in the video industry.

On the other hand, the Internet, the nervous system of the physical world, will go beyond current uses, carrying traffic not generated by Web users' actions: exchanges between communicating objects, consumers' virtual twins, 3D replications of cities, of businesses, servers updated in real time, and generating permanent two-way data exchanges.

Anytime, anywhere, any device

MyTV

Technologically effervescent

More and more personalised TV viewing solutions are coming onto the market, with a variety of features:

- With Catch Up TV (i.e. viewing a channel's programmes after they air on TV), VoD has finally found the purpose that the electronic distribution of DVDs has been struggling to establish. Free or for-pay, through IPTV or on the Net, Catch Up TV is approaching ubiquity, and proving a smart way for channels to introduce more flexible access to their programme line-up without breaking ties with viewers.
- With the emergence of online personal TV solutions (that store the channels' programmes for Internet users, or package them à la carte, as on Joost).
- A growing number of devices are equipped with a hard drive: Pay-TV STBs, PVRs, micro computers.

Continuity of service

Personal TV packages are being enhanced with new features such as indexing and advanced search functions, multiple TV set packages, personalised automated recording, and remote programming via the Web or the mobile phone. Networking the TV set with other media devices in the home enables easier access to media centre functionalities for managing personal digital content such as photos and music, and for sharing content between users' various devices (mobile phone, PC, iPod, portable media player…).

From a more general point of view, while the most popular personal TV feature is time-shifted viewing, i.e. watching shows outside the schedule grid, two decisive changes are being introduced:

- place shifting, meaning access to TV content outside the home;
- and device shifting, providing access to TV content on devices other than the TV set.

What business model?

The development of personal TV involves a wide range of business models.

For both Catch Up TV and online services, the overall trend appears to be offering programmes for free, in some cases as part of a digital TV package or a triple play bundle, although some broadcasters are weighing consumers' willingness to pay for such a service.

Beyond the equipment market, some service providers are examining the possibility of using the hard drive that equips devices to push paid content to users. But the PPV market does seem limited and particularly vulnerable to piracy.

The personalisation of TV could also help drive an increasingly personalised approach to advertising, including the ability to insert contextualised ads based on users' consumption patterns.

Enabling factors

In the short to medium-term, the rise of personal TV will be spurred by greater penetration of multimedia home networks, growing competition between TV service distributors and the rise in the bandwidth delivered for online solutions.

The development of personal TV devices has already been spectacular in the United States: 30% of households that subscribe to a digital cable package, and 23% of those subscribing to a digital satellite one, are equipped with a PVR.

In Europe, IDATE estimates that the number of individuals using a personal TV system will exceed 170 million by 2012. Of this total, a small minority (estimated at around 10 million) will have opted for a personal online TV solution.

Growth of subscribers to PVR service in US, by vendor

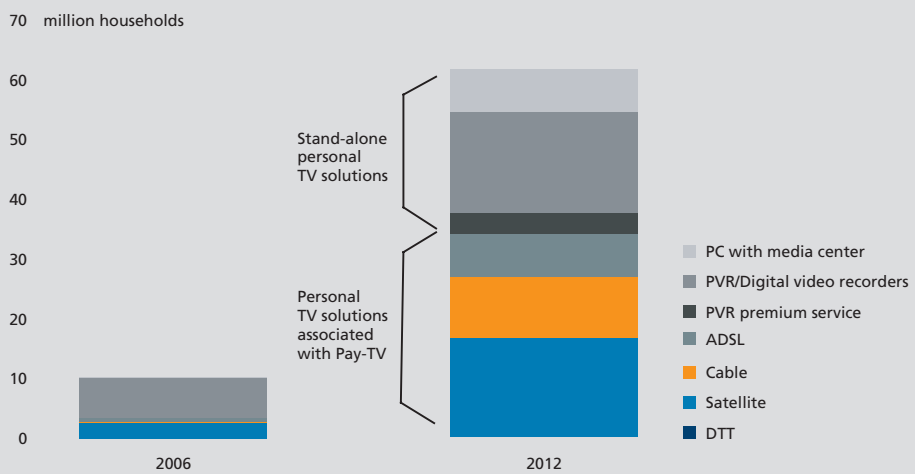
(millions)	2003	2004	2005	2006(e)
PVR stand-alone*	0.7	1.4	1.9	5.0
DirecTV	0.9	1.9	2.7	3.0
Echostar	1.5	1.8	2.5	4.0
Time Warner Cable	0.5	0.9	1.5	2.8
Comcast	0.1	0.5	2.5	4.0
Other cablos and telcos	-	na	0.5	2.2

** TiVo, PCs, DVD recorders with HDD, media centers…*

Source: IDATE

Pay-TV as key enabler of Personal TV deployment

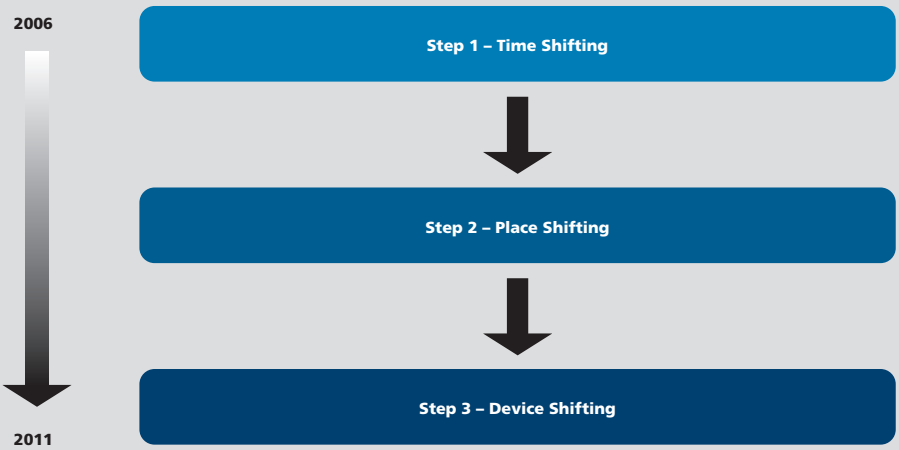
Number of households using Personal TV system, 2006 and 2012



Source: IDATE

From Personal TV to Digital Home

Creating a seamless digital home?



Source: IDATE

Sharing or destroying value?

Video over IP services

Content: convergence or increased segmentation?

The online video distribution segment is in the throes of a major upheaval, as available services and solutions proliferate.

Two opposing trends are taking hold. On the one hand is the increased segmentation and personalisation of video services, as a result of which the overall offering is becoming more diverse and involving a growing number of players. With this shift comes reinforced consumer interface management, providing a function further down the distribution chain than traditional TV service aggregators. On the other hand, convergent video distribution solutions are in the process of consolidating, bringing together continuity of service options for video and/or multi-network options for the technical distribution platform.

These phenomena are not independent of one another, with both contributing to deconstructing the value chain for video over IP distribution, and so 'enabling' the emergence of new services and players and the increased specialisation of distribution channel professionals. This in turn makes it possible to consolidate more homogeneous and common segments in the various video over IP ecosystems, which simplifies the assembly of multi-platform solutions.

Three possible set-ups

Several schemes are attempting to organise the online video distribution chain.

The first is the 'Telco TV' scenario whereby the telecom carrier maintains control over access and the services delivered to consumers. This involves marketing a digital TV package, so as to benefit from the leverage of a triple play bundle, operating under the logic of proprietary portal. It means competing head-on with traditional TV networks.

A more open, IP-based TV distribution model could also take shape: this is the 'QoS competition' scenario. Here, two competing systems go head to head, with the quality of the TV service being the point of distinction. On the one hand, telcos undertake a shift in strategy to become wholesale capacity operators for TV services. They are in the business of selling quality TV services. On the other hand, best-effort distribution solutions on the uncontrolled networks are developing, benefiting from the removal of bottlenecks in the network thanks to reinvestment in infrastructure. On the whole, the IP universe is gaining ground and creating new growth opportunities for both telecom and media companies.

Lastly there is the scheme where the video package is fully deconstructed: the 'Brave New World' scenario. Here the integrated media and telecom value chains are dismantled. This scenario brings with it the threat of destroying value for incumbent players, and for the TV market as a whole. With a model based primarily on free packages, providers would require a massive shift in viewing habits, combined with a major increase in ad monies to ensure equilibrium.

Converging interests of telcos and the digital entertainment industry

The media and telecom industries have one goal in common: to prevent the Brave New World scenario that would completely deconstruct the value chain. Whether they compete over the distribution of services or a new network-content cooperation is established, they will need to prevent an unbridled open market, characterised by free bandwidth on the one hand and the Internet giants capturing the lion's share of ad revenue on the other. The conclusions of the net neutrality debates will have a sizeable impact on the shape of things to come: giving priority to the service or to open and neutral networks will go a long way in deciding who will benefit most from the development of the video over IP market.

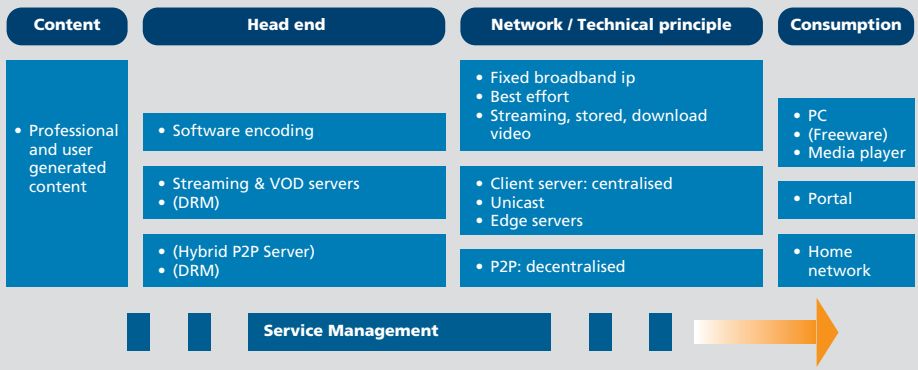
Economic features of online video distribution solutions

Architecture	Investment/Fixed cost	Variable cost as a function of the number of users
Multicast	High per user group	Low (cost per user group)
CDN	Moderate	Moderate
Unicast	Low	High
Pure P2P	Low	Very low (costs essentially covered by users)
Hybrid P2P	Low	High for the first users, then low

Source: IDATE

Internet TV ecosystems

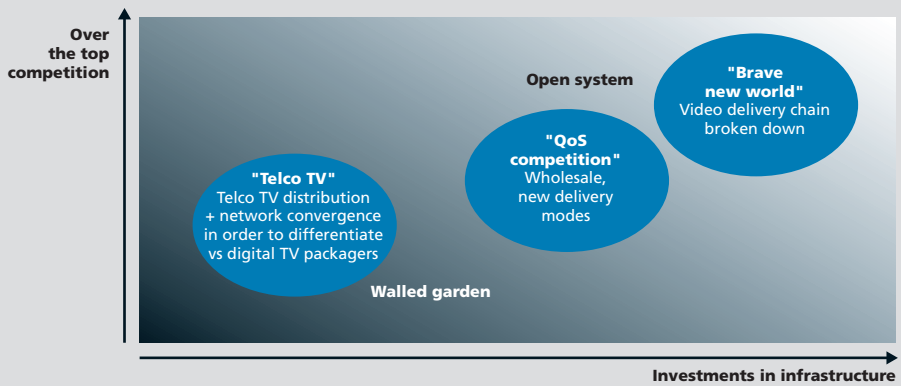
Decisive link in chain: technical integration



Source: IDATE

Video over IP: three scenarios up to 2015

Sharing or destroying value?



Source: IDATE

New formats, new platforms

Advertising: audience versus traffic?

Non-media

Speculation about the competition between traditional media and the Internet for ad monies overlooks one major fact: advertisers spend close to two-thirds of their advertising budget on non-media campaigns, in other words in direct marketing.

If the mass media advertising market is threatened, then one reason is internal competition (fragmentation of viewers/readers) while another, more indirect cause is the increased efficiency of one-to-one marketing offered by the Web. The leading TV channels, which have already carved out a massive presence on the Internet, do not appear to be threatened in the medium term, having already proven their efficiency as a mass medium.

The bulk of the increase in overall ad spending is nevertheless due to the rise in investments in online advertising. Here, the share spent on display ads, in other words the online version of physical display ads or screens appears to be shrinking, as the interest in new formats is growing: monetising video with sponsorship or embedded commercials, electronic couponing in directories, targeting Web users based on their profile. The recent rise of social networks heralds a new stage in personalised ad messages, and banks on the influencing power of the community's recommendations.

Waiting for mobile advertising

Less than 1% of ad monies is spent on mobile, despite there being a base of 3.2 billion users and despite the phenomenal nature of the mobile phone: it accompanies users in a host of different consumption situations, combines a variety of formats (texting, mail, games, video, TV, music…), allows for interaction between consumers and advertisers and, above all, is the very embodiment of a personal device. The development of geo-locating techniques in particular is expected to allow the mobile to capture a substantial portion of the local advertising market. But it is the growth of the 3G handset base that will be the first step in making the mobile a mass market advertising platform, combined with users' widespread adoption of new services.

Concentration of platforms and/or ad management

The promise of advertising on the fixed and mobile Internet is triggering a series of mergers and acquisitions among the players vying for ad monies: traditional media are buying up high traffic Websites (Fox/MySpace, Axel Springer/auFeminin), online ad management systems are working for other media (Google/Echostar) and the ad management sector itself is becoming more concentrated (Google/DoubleClick; Microsoft/aQuantive).

The murky cusp of content and advertising

On traditional media, content and advertising are separate, adhering to a strict code of conduct and subject to regulation. The Internet is opening up new areas of content production (original, tailored or adapted versions) which are financed directly by advertisers and designed to serve marketing objectives. A mid-tail might thus emerge, midway between the digital entertainment industry's premium content and the long-tail of back-catalogue products.

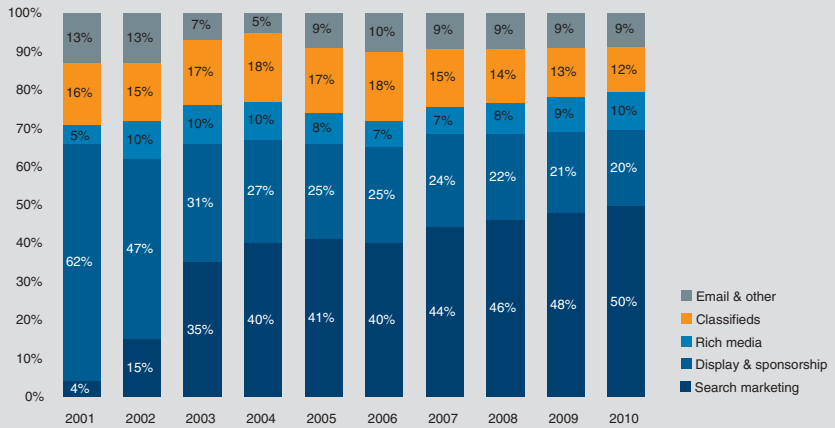
Mobile advertising: share of global advertising market

Year	Global mobile advertising market (billion $)	Mobile's share of the advertising market (%)
2006	1.5	0.4%
2007	2.7	0.6%
2008	4.7	1.0%
2009	6.9	1.4%

Source: IDATE based on dvertising Age, Informa Telecoms & Media and Zenith Optimedia

Steady rise in the use of "search marketing"

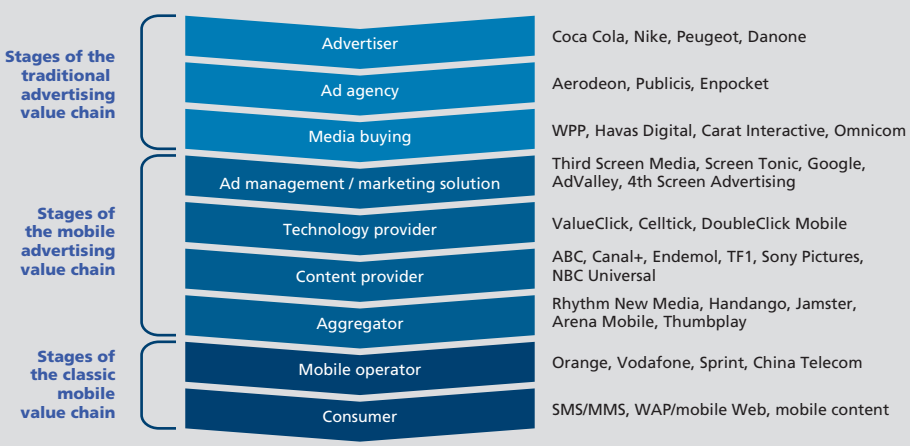
Forecast growth of market share for online ad formats in US, 2001-2010



Source: IDATE based on Morgan Stanley Internet Research & IAB

Mobile advertising value chain

What place for new entrants?



Source: IDATE

From experimentation to deployment

TV channels on the Web

Firmly committed to the trend

To avoid suffering the same fate as the music industry on the Web, television producers and channels are adopting an offensive online strategy, with several models being rolled out.

Some channels have opted to broadcast their programmes on all available platforms, adapting their line-up to new media – a prime example being ABC's free Catch Up TV service for its series. Others view the Net more as a natural extension of their ad management business and so have preferred to launch or take over Websites with high audience or traffic potential, even if the content on the sites has no real rapport with their programming (the French channel M6's takeover of e-tailer Mistergooddeal).

Testing business models

The television industry is testing a variety of business models, without having settled on any single one.

A B2B (business-to-business) model favours a generally non-exclusive role of online content distribution platform supplier. A model for sharing ad revenue between the site and the copyright holder is usually employed. This strategy can be an efficient means of distributing a back catalogue (with low fixed marketing costs), but does not preclude the distribution of premium content as well.

B2C (business-to-consumer) strategies aim to provide direct distribution of the programmes by capitalising on the leading channels' brand name clout, a prime example being US network ABC and its ABC portal on the Web. In the United States, a lasting shift appears to be in the works towards ad financing for the top channels' online services. The trend is less visible in Europe where a great many players are still hoping to establish a for-pay model for their premium content.

An intermediate model, B2B2C (business-to-business-to-consumer) is built around services carrying a TV channel's brand name products, and distributed on third-party platforms.

Who will capture the DVD market?

TV channels are also hoping to benefit from the DVD market's transposition to the Web – a market that most are already involved in – to capture the VoD market. But the VoD market is proving very competitive (because film distribution rights are not exclusive) and, above all, directly undermined by piracy. As a result, some channels are gradually focusing on offering their programmes in VoD, while all channels are starting to deliver their programmes over a variety of platforms, although on-air broadcasts remain the centrepiece of their business.

Some of the consequences

The TV industry's gradual (and partial) migration to the Web will undoubtedly have certain repercussions. Whether governed by regulations or contracts, the current media distribution sequence will need to be revised. In addition, channels are working to increase their control over the rights to the programmes they broadcast to be able to undertake a global, multi-platform distribution strategy. And, of course, an increase in online video viewing (including the shows being offered by traditional channels themselves) will likely have an influence on the schedule, giving priority to special events, live programmes, sport, reality TV…

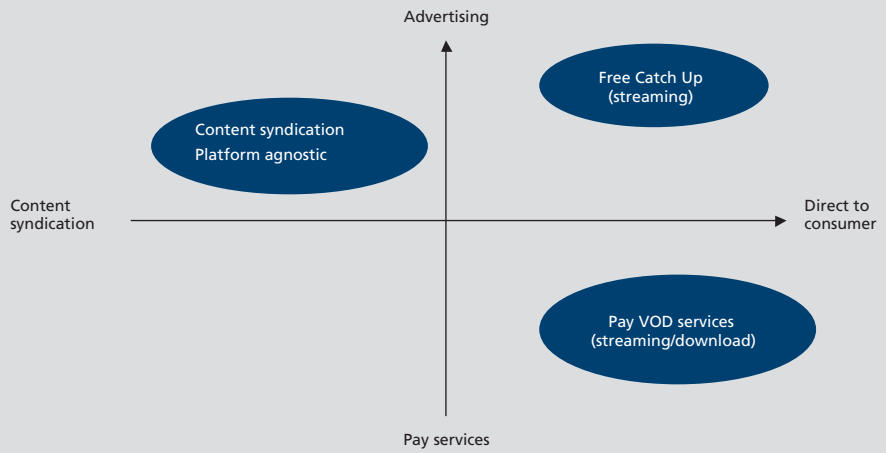
Average television viewing per person in Europe, 1995-2006

minutes/day	1996	1998	2000	2002	2004	2006
France	180	185	193	200	204	204
Germany	182	188	190	201	210	212
Italy	211	221	207	230	240	239
Spain	214	210	210	211	218	216
United Kingdom	216	215	221	214	222	206

Source: Eurodata-TV in EAO

B2B and B2C strategies

TV channels Internet business models



Source: IDATE

New video value chain

UGC, Internet giants and telcos enter market

Content production	Content packaging and programming	Distribution	Devices / User interface	End user
Hollywood studios Independent producers	Broadcast networks / General interest TV channels Cable networks / Thematic channels	Terrestrial / Broadcast TV stations Cable MSO DBS	TV set STB	"Leanback"
Semi professional User generated	Google Apple AOL VOD services	Internet Telcos Mobile	PVR, PC, Internet video devices, networked TV, game console, mobile devices	Interactivity, community

Source: IDATE

The Internet giants and Web 2.0

Web 2.0, innovation on the Net

Although the term encompasses several definitions (chiefly the use of certain technologies, personalisation of the Web and online applications), more than anything 'Web 2.0' refers to applications of a social nature, geared to sharing, community and interaction.

The technological novelties of Web 2.0 make it possible to deliver more modular and hence more easily personalised applications, and ones which are easier to use (automatic refresh via AJAX). The integration of RSS (and its derivatives with podcasts) also makes it easier to create mash-ups, or applications that combine a number of services, while the deployment of the wiki enables more advanced editorial interaction. Folksonomies, or collaborative rankings, are established thanks to social tagging – with each user associating keywords with a given piece of content, and tag clouds making it possible to identify the most popular content.

In terms of audience and traffic, there is no denying the success of Web 2.0, or at least of its underlying principles. Sites such as MySpace and Wikipedia (with its highly original positioning) now rank among the world's top 10 sites in terms of unique visitors. The number of page views remains low (less than 10% of the world total), but the time spent on them is considerable – accounting for more than 30% of the time that a Web user spends online. Compared to more classic sites, browsing on this type of site is colossal, even if the rate of participation is still very low (one contribution per 100 views).

Key role of start-ups

As with other new services, the Internet giants have been little involved in the creation of these new citizens' media sites, entering the fray later based on a logic of aggregation or through takeovers.

The Web titans' wait-and-see attitude allowed for the emergence of emblematic players in these new fields, all boasting a large audience and high traffic, chiefly with social networks (MySpace, Facebook, Mixi, Cyworld), video sharing (YouTube, DailyMotion), photo sharing (Flickr, Photobucket), music (Last.fm, Pandora) and bookmarks (del.icio.us, StumbleUpon). A handful of services with a smaller following complete the picture, offering content ranking (Digg), personalised homepages (Netvibes), virtual reality (Second Life), citizen journalism (OhmyNews) and social shopping (Yelp) – in each case with start-ups being the chief source of innovation.

With the exception of personalised Webpages, the Internet giants generally position themselves on these services later on and then struggle to make up for lost time, despite their already large user base.

Web 2.0 innovations could alter the balance in the online service industry

Web 2.0 introduces new ways to surf the Web via tagging or networks of friends, rendering less relevant the traditional, structured and relatively passive browsing offered by portals (media type audience) and the freeform browsing that uses a search engine as its starting point (steering traffic). More than the number of page views, the time spent online is becoming as important a criterion as the number of unique visitors.

The Internet giants are also facing a new source of threats from telecom and especially media groups which are working to use Web 2.0 to relaunch their online business, after having missed the boat, by and large, on Web 1.0. SK Telecom (via Nate and Cyworld), News Corp (which bought MySpace) and CBS (acquisition of Last.fm) are being particularly proactive.

Top Web 2.0 sites

	Visitors oct. 05 (millions)	Visitors oct. 06 (millions)	Growth rate
Fox Interactive Media (incl. MySpace)	12.43	71.35	474%
Wikipedia	15.61	38.90	149%
YouTube	0.67	23.48	x 35
Facebook	9.47	15.11	59%
Craiglist	8.23	14.33	74%
Flickr	2.40	6.15	156%
MetaCafe	0.31	3.77	1 104%
Break	1.98	2.84	43%
Bebo	1.00	2.30	130%

Source: comScore

Advertising at heart of strategic trends

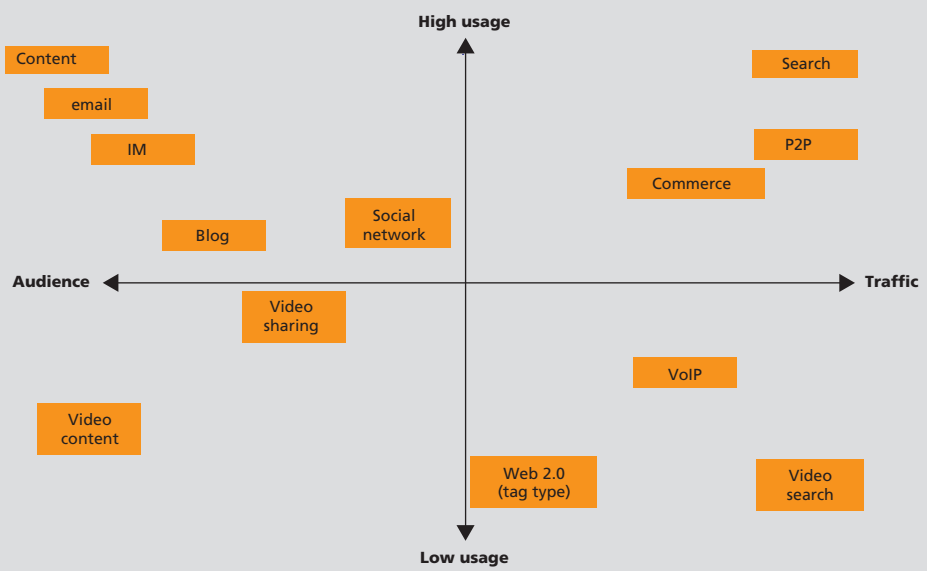
Internet giants main acquisitions

Player	Main acquisitions
AOL	Aborted takeover of TradeDoubler (online marketing) in 2007 Third Screen Media (mobile) in 2007 Lightningcast (online audio and video) in 2006 Advertising.com (online network) in 2004, for 435 million USD
eBay	Development of an in-house department devoted to advertising since 2006
Google	Feedburner (RSS), for 100 million USD (estimation) DoubleClick (online display) in 2007, for 3.1 billion USD Adscape (video game) in 2007, for 23 million USD dMarc Broadcasting (radio) in 2006, for 102 million USD
Microsoft	ScreenTonic (mobile) in 2007 aQuantive (online display and marketing) in 2007, for 6 billion USD Massive (video game) in 2006 Development of an in-house department devoted to sponsored links (adCenter) since 2005
Yahoo!	Right Media (online ad auctions) in 2007, for 725 million USD AdInterax (ad creation tools) in 2006 Overture (sponsored links) in 2003, for 1.65 billion USD
MySpace	Strategy Data Corp (online display ads) in 2007, for 50 million USD (+100 depending on performance)

Source: IDATE

Traffic-based logic, audience-based logic

Web services typology



Source: IDATE

Towards universal triple play?

Innovations in service bundles

Overall move towards the quadruple play

Having expanded their packages to include triple play, telcos are now going one step further by adding mobile services to the mix. Thanks to their integrated mobile subsidiaries, incumbent carriers have been the pioneers in this area, and virtually all now market a quadruple play. Cablecos and alternative operators are following suit, with cases in point that include Comcast in the United States and Yahoo!BB in Japan. Independent mobile operators are also joining the fray, a prime example being Vodafone which offers Internet access and fixed VoIP in the UK.

As a result, we are witnessing a potential clash between players from the fixed, Internet, mobile and Pay TV sectors in all four quadruple play markets – a new competitive landscape that is rendering these new bundles somewhat commonplace.

Beyond the quadruple play, the universal triple play?

If adding mobile services to the mix creates the fourth pillar of the quadruple play, the next stage will involve offering consumers fluid and seamless access to the three basic services of triple play (telephony, Internet access and TV), regardless of where they are.

As a result, triple play services will be fixed or mobile, consumed individually or collectively, on-demand or live, and using a variety of devices.

At a time when P2P is fast approaching ubiquity and so devaluing content, a portion of the value-added lies in organising access to content and in providing continuity of service. What needs to be developed then is a value-added service layer so that users can have easy access to the service they want, along with presence, identification and personalisation services. This challenge also incorporates those faced by home networks and the devices themselves.

Operators marked by their original core business

As they work to enhance their service line-up, operators are nevertheless building on their core market and their product lines are still shaped by their original business area. Cable operators, for instance, are old hands at designing structured TV service packages, and have maintained this wealth of choice in their bundled packages, whereas their selection of Internet access solutions is generally less extensive.

The expertise needed to assemble a TV package is difficult for telecom operators to acquire, added to which Internet access services are harder to differentiate as they are generally distinguished only by the speed on offer, and the choice is tending to shrink.

Streamlining indispensable

If the quadruple play is taking hold across the board, innovation also lies in the way that the line-up of services is presented: it is no simple task to bundle combinations of Internet access, fixed and mobile telephony and TV services and to market them as is to consumers.

A clear product line is a major asset, which means that service offerings need to be streamlined. A good example is Virgin Media in the UK which markets a simplified line-up; by autumn 2007, 47% of its customers were subscribing to a triple play. Another trend among European vendors is a M/L/XL approach, in some cases completed with a VIP option. This three-tier system makes it easier for users to choose and sign up for a package, which makes all the difference when comparing two competing solutions. Often starting from a broad product line in their core business, operators need to pay particular attention to making their selection of service bundles clear and easy to understand.

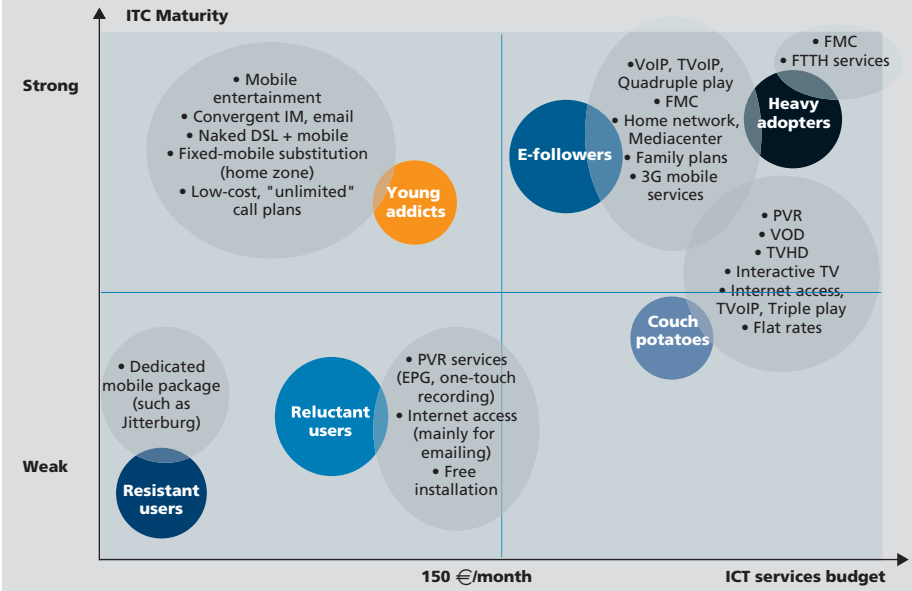
Virgin Media triple play policy

	Q2-06	Q3-06	Q4-06	Q1-07	Q2-07	Q3-07
Triple play subscribers share	37.1%	38.7%	40.6%	42.9%	45.2%	47.0%
Monthly ARPU (£)	42.21	42.48	42.82	42.75	42.16	41.55

Source: *Virgin Media*

Running gamut from heavy to resistant users

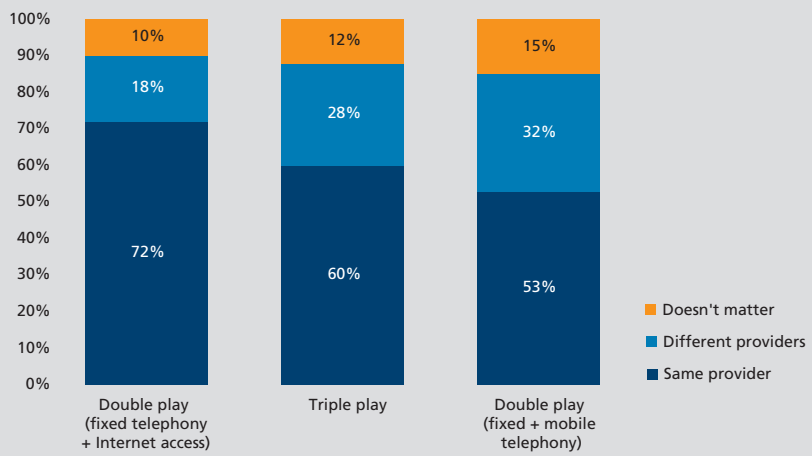
Bundles positioning in Use-IT consumer market segments



Source: IDATE

Bundled offers

Appeal of having single provider



Source: IDATE

Just the entire universe

Video games: the new frontiers

Casual gaming: converting 70% of non-gamers

Although casual gaming first appeared to be a niche market, it actually represents an opportunity to expand the gaming market considerably by attracting a sizeable portion of the 70% of the population who do not play video games. More and more titles are being released, adding value to the gaming experience, particularly in terms of learning.

Marketing games for people of all ages has always been one of the major strengths of Nintendo. They have stayed out of the technological battle being waged by its two rivals (Sony and its PlayStation and Microsoft with the Xbox), offering an alternative to games whose extreme complexity makes them inaccessible to most casual gamers. The Japanese firm (which started out as a maker of card games) is focused on providing innovative gameplay, a strategy which has come to fruition with the spectacular success of its home (Wii) and handheld (DS) consoles – a success that can be attributed to the growth of its customer base which now comprises as many females as males, and spans the generations.

Serious games: new outlets

The concept of serious game refers to the use of technologies and gameplay for products whose main purpose is not entertainment. This involves a wide array of applications including simulation for military training, government-run awareness-raising campaigns, training and marketing. Specialised publishers are appearing in this market, generally operating a B2B business model. Most players in fact want to adapt their products to target the consumer market directly.

From a more general standpoint, video games are a growing part of the digital entertainment universe, and more and more gateways are opening up with the production of animation and virtual worlds.

Mobile gaming

The first generation of mobile games was shaped largely by mobile handsets' limited capacities (memory, screen) and by the fact that cellphones are used only occasionally to play video games, making them an ideal platform for casual gaming. The game remains 'trapped' in the device, with no gateway to either other mobile users or to fixed devices.

Without undermining their appeal to casual gamers (whose numbers have been proven by Nintendo's DS), one promising development path appears to be extending online games to the mobile, particularly those based on a persistent universe: a small market for now, but one whose customers appear to be willing to pay to play and a move that could heighten interest in online virtual universes.

Virtual worlds: Real Cash Economy and 3D Internet

More than a game or a social network, the virtual world of Second Life and such competitors as Entropia is becoming a marketplace governed by the financial and monetary mechanisms of the real world. Interoperability is becoming the byword: how will these virtual universes interconnect?

Another example of the porous nature of the different digital entertainment segments is the fact that virtual universes offer a glimpse of a type of interface that could potentially be applied to all Websites, allowing users to wander through a virtual shop rather than visit an e-commerce site, or to hang out in a virtual living room rather than use an IM application.

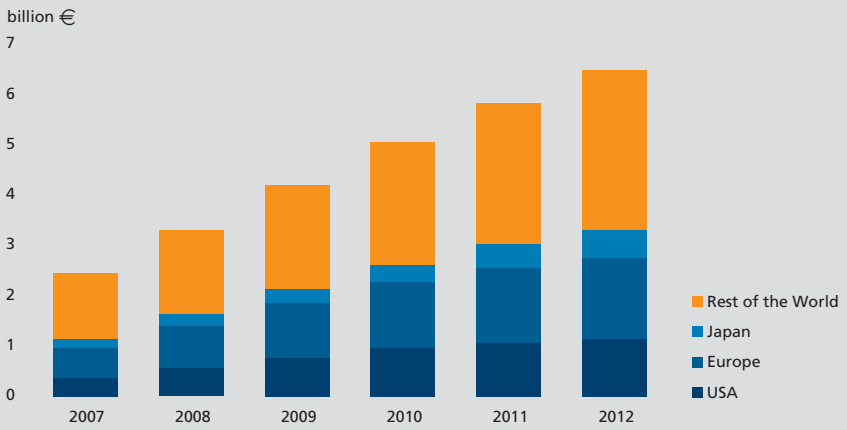
Video game software market in Europe, Japan and US

(million €)	2007	2008	2009	2010	2011	2012
Mobile games	1 130	1 640	2 139	2 621	3 032	3 324
PC offline games	3 748	3 855	3 916	4 000	4 048	4 083
PC online games	1 268	1 573	1 963	2 503	3 030	3 600
Home console games	10 672	12 153	13 168	13 939	14 300	14 400
Handheld console games	3 901	4 122	4 237	4 290	4 380	4 400
Total	20 719	23 343	25 423	27 353	28 790	29 807

Source: IDATE

High-growth sector

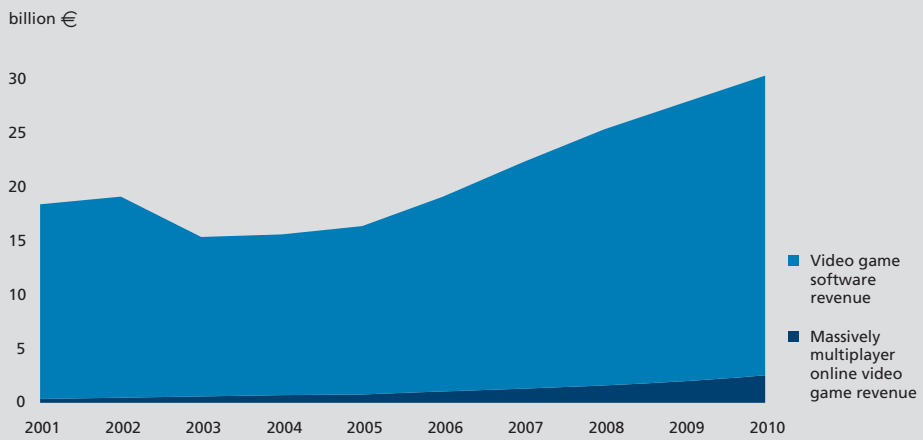
Worldwide mobile video game market



Source: IDATE

Untapped market potential

Massively multiplayer online video game revenue



Source: IDATE

New professions in the music industry

The music industry is in crisis: available packages and consumption are increasing, but the industry is crumbling. A few new models are emerging, however.

Rights management as a new model

The era of record labels as the producers and distributors of a physical product is over. Rights management, which was originally just an offshoot of the core business, has become central. The goal for a music publisher now is to sell the use of its catalogue to a wide range of vendors: online music services (iTunes), access providers (agreement between operator Neuf and Universal) and equipment makers (Nokia). Record companies are working to minimise the impact of the ongoing increase in piracy, and are gradually shifting to a B2B logic, while the service operators selling their wares view music as added leverage to drive their core business.

Difficult relationship with radio

Conceding the use of a catalogue was already the governing principle behind the relationship between record labels and radio stations. Of the two, it is music stations that are suffering the most from the commoditisation of music (piracy) and the growing number of Internet radio stations. The labels, however, hold the view that the stations are acquiring their 'raw material', i.e. music, for a pittance, and contributing only minimally to their revenue (around 5%). Traditional and online radio stations are working to achieve a new compromise, which is difficult given their shaky financial situation.

Capturing the concerts market

In a twist of irony, concert performance is once more becoming a central part of the music industry. After having turned their back on this segment, record companies are reinvesting by taking control of event organisers. Labels as a whole are striving to be involved in all aspects of their signed artists' careers, establishing global agreements that can even include the rights to the artists' image.

Impact on music production

The growth of B2B markets, the multi-platform marketing of artists, the revaluation of the price paid by radio stations will not, however, be able to offset the effects of piracy in the short term. The digitisation of the product helps to destroy its value, replacing an album-driven market with one based on single songs.

This has a direct impact on production financing: the sums invested in creation are shifting to independent producers and even to the artists themselves who are offering labels ready to ship products. Added to this is the non-vendor music sector, embodied by musicians' personal pages on MySpace, a features which is also helping to increase the volume of works on offer. And, finally, some of the most popular artists are devising alternative distribution strategies (such as Radiohead), circumventing the labels with direct online concerts/distribution.

The signature in October 2007 of a global agreement (concerts, licensed products) between Madonna and concert organiser Live Nation is emblematic of this shift, the singer having been previously under contract with Warner Bros. Records.

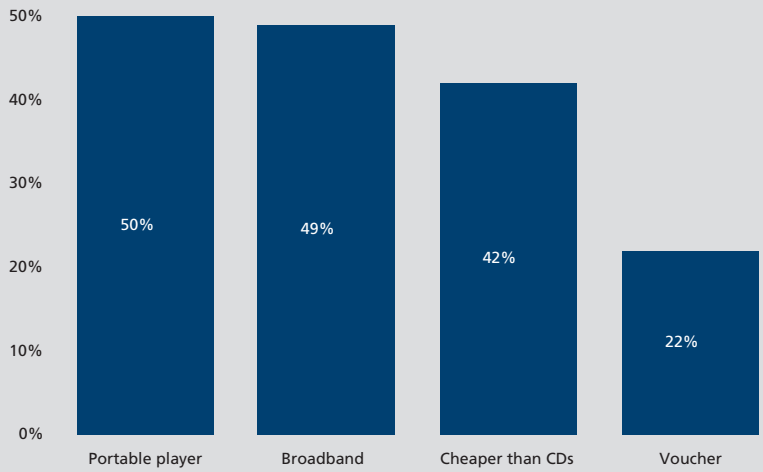
Growth of sales for American music industry

(million $)	2002	2003	2004	2005	2006
Physical market	12 614	11 854	12 155	11 195	9 651
Digital market	-	-	183	1 075	1 859
Total	12 614	11 854	12 338	12 270	11 510

Source: *IFPI*

Online music sales drivers

Portable media players driving growth of digital music sales

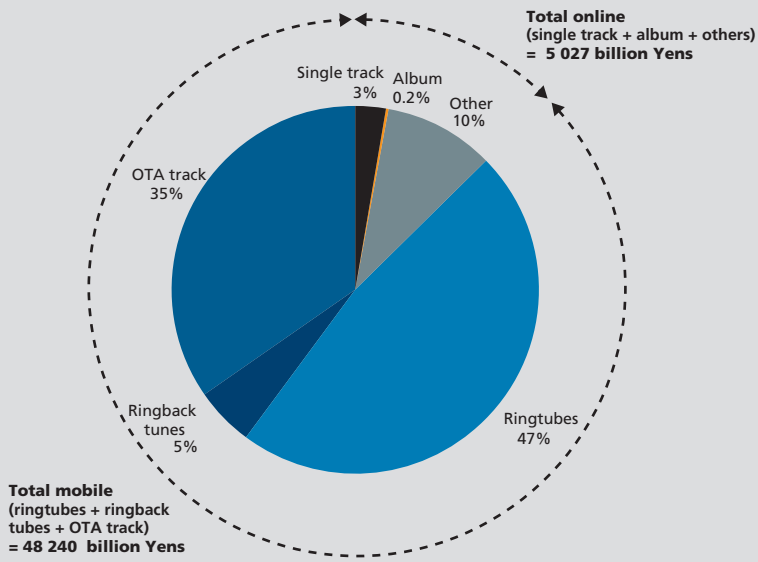


Question: "What made you start buying music online? Base: all those who shop online

Source: IFPI/M-Lab Survey, Nov. 2006

Ringtones lose steam, digital sales placid

Breakdown of digital music sales in Japan, 2006



Source: IDATE

Content exchange: the new outlets

The complex ecosystem of online content exchange

Illegal content exchanges involve three distinct functions: the acquisition and processing of content, its distribution on a technical platform and the publication of content references (its location).

Innovation in the areas of exchange and distribution is never ending. Peer-to-peer (P2P) networks are increasingly sophisticated (more powerful software, anonymity, emergence of live P2P); the stock and share sites benefit from their ease of use and newsgroups are regaining in popularity for exchanging films online. The top video sites have now begun filtering the content being posted by users to prevent copyrighted material from appearing on their platform.

At the same time, private exchange networks are popping up, either in the form of closed communities, using P2P technology, or via private storage areas and even the use of electronic messaging.

Central role of the community

Illegal content exchanges rely on a community of hackers who acquire and distribute the content stripped of its protection systems. A host of clans compete to be the first to capture, recode, sometimes subtitle and 'publish' this content. Referencing the content can also play a crucial part in the equation, involving game forums, blogs and specialised search engines which help boost the exposure given to content stored in a single location. The lack of connection between where the content is stored and where it is 'published' thus constitutes one of the main difficulties in tracking pirated content.

Progress in the battle against illegal exchanges

The war is being waged on several legal fronts. The concept of fair use still needs to be specified, and changes need to be made to the laws governing counterfeit and the migration of physical media to digital content. Identifying the Internet users who take part in illegal content exchanges is probably the greatest challenge: downstream identification on the one hand, which can run counter to the principles of protecting the privacy of personal data, and upstream identification on the other, which involves the sticky issue of the degree of responsibility of ISPs that host the sites providing the content. The introduction of fingerprinting (a unique fingerprint on audio or video content) appears to constitute a major step forward for DRM solutions. We are beginning to see collaboration between content industries and P2P sites, even if the creation of a fingerprint base will be a mammoth task. In particular, fingerprinting helps to remedy the analogue flaw, in other words capturing analogue signals to create protection-free digital files.

Ultimately, it is likely that the steps being taken by the TV industry, the development of free and legal packages financed by advertising, the shorter gaps between releases in the United States and Europe and an improvement of the quality of legal services will help, if not to curb, at least to diminish the piracy blight to a degree.

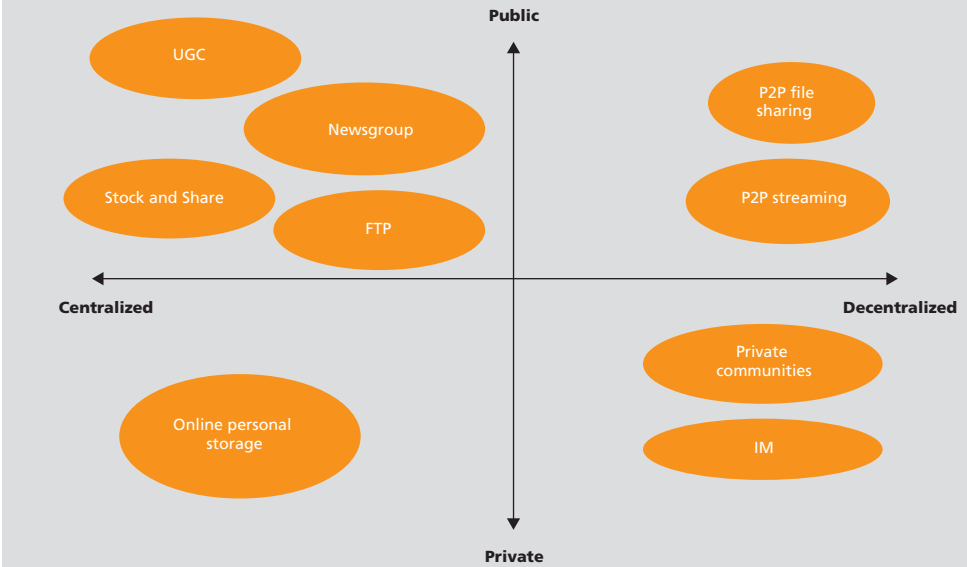
Proportion of online households having used P2P in last three months

	June 2005	Sept. 2006
France	38.3%	48.0%
United Kingdom	15.8%	23.6%
USA	9.8%	12.4%

Source: IDATE, Médiamétrie//Net ratings – MegaPanel 06/05 and 09/06

The darknet emerges

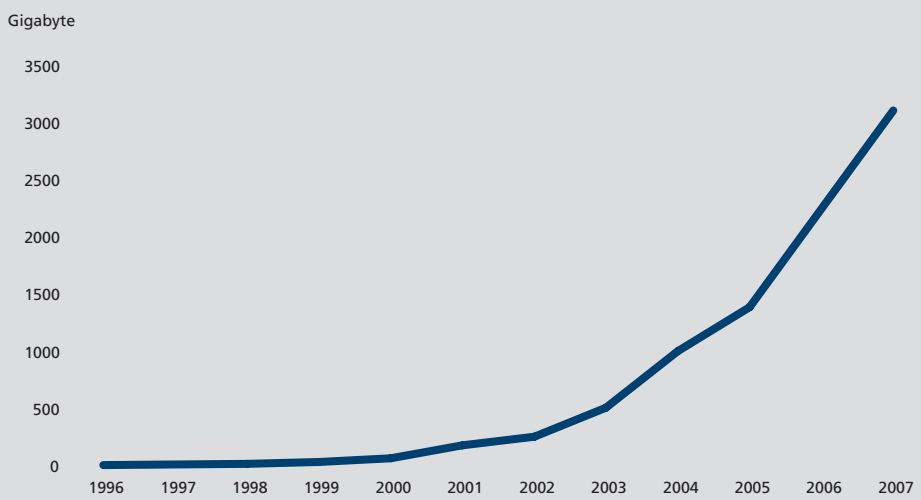
Content exchange platform typology



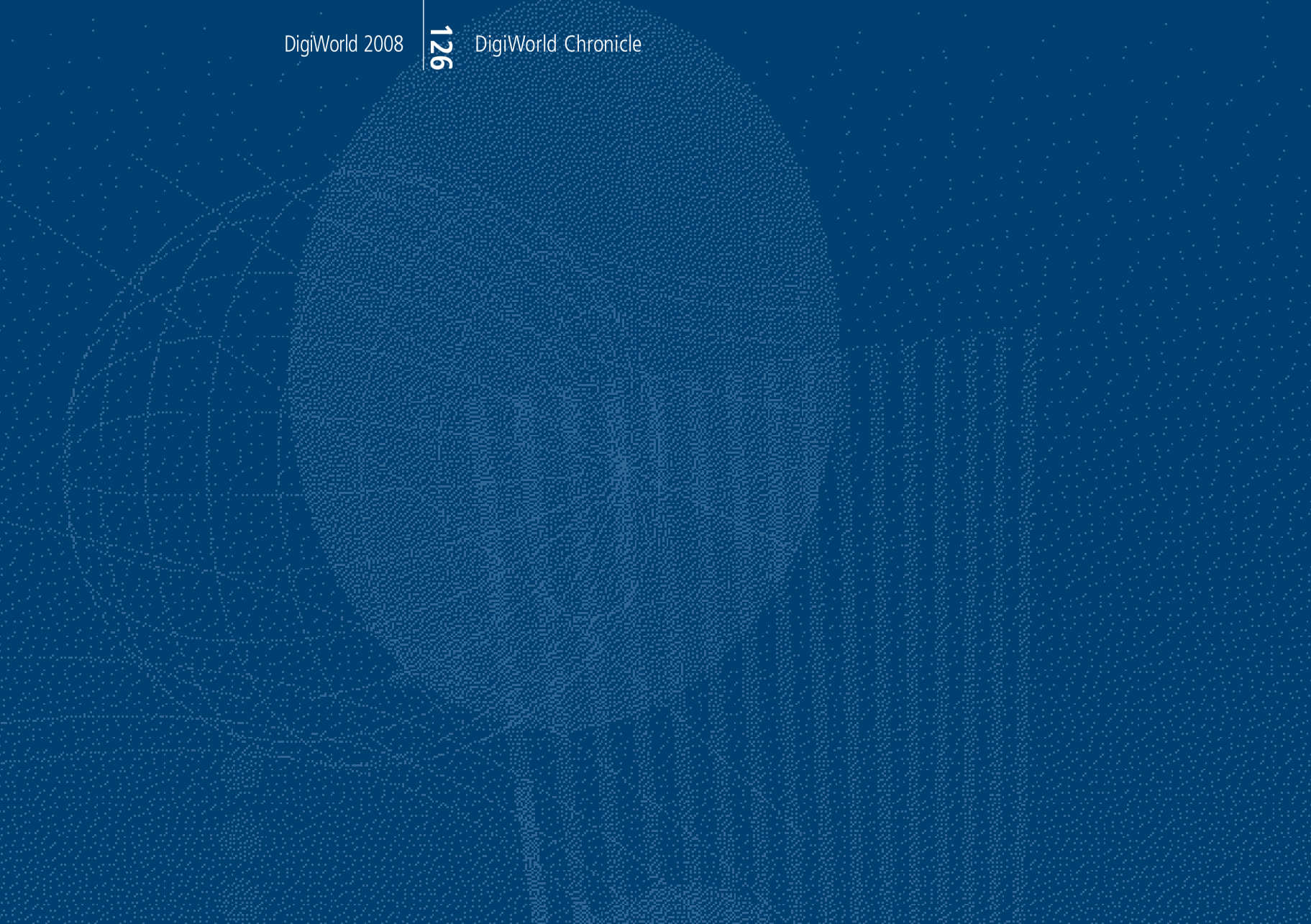
Source: IDATE

Usenet switch to video file exchanges

Daily traffic on Usenet serves (Gigabytes)



Source: Altopia, Octanews and Usenetserver.com compiled in wikipedia



DigiWorld Chronicle

- The French government has adopted the **"Television of the future"** law, which includes an extension of digital terrestrial TV (DTT) to between 85% and 95% of the population by the end of 2011, and complementary coverage with the launch of a free satellite offer, starting in summer 2007.
- **Maroc Telecom**, of which **Vivendi** owns 51%, has acquired a 51% stake in Burkina Faso incumbent carrier, **Onatel**, for 220 million EUR.
- **Alcatel Lucent** has sewn up its acquisition of Canadian firm **Nortel**'s UMTS division for 320 million USD, making it the world's third largest UMTS supplier.
- Belgian cableco, **Telenet,** has taken full control of **UPC** Belgium's TV and broadband businesses (131,800 TV subscribers and 40,600 broadband subscribers at the end of September 2006).
- Japanese mobile operator, **NTT DoCoMo**, has bought a 3% share of private TV group, **Nippon TV,** with which it already has an agreement to develop digital mobile TV content and services.
- American telecom equipment giant, **Cisco**, is beefing up its online security operations with the takeover of California-based e-mail and gateway security specialist, **IronPort**, for 830 million USD.
- **Sprint Nextel** has chosen **Nokia** to supply the infrastructure and electronic equipment needed to develop the next generation of its 4G WiMAx network. The US telco plans on investing 800 million USD in 2007 and between 1.5 and 2 billion USD in 2008.
- French online dating site, **Meetic**, has taken over the UK's **DatingDirect** for 40 million EUR, and so expanding its European coverage.
- After the UK, **News Corp.-**owned community networking site, **MySpace**, launches officially in France.
- Hungarian landline telco, **HTCC**, a subsidiary of Denmark's **TDC**, spends 470 million EUR (including debt takeover) to acquire its rival, **Matel/Invitel**, owned by investment funds **AIG** and **GMT** – which had acquired Matel/Invitel from **Vivendi** in 2003 for 325 million EUR.
- The European Commission gives **Motorola** the green light for its takeover of **Symbol Technology**, a US firm specialised in producing robust portable devices, in a deal worth an estimated 3.9 billion USD.
- The smallest of China's three landline telcos, **China Netcom**, is selling off its assets and business in the Shanghai and Guangdong provinces to its parent company, **China Network Communications** Group Corp., for 449.4 million USD.
- **Verizon** will be merging its landline business in the north-eastern US with those of regional carrier, **FairPoint Communications,** as part of a deal worth 2.7 billion USD.
- As part of the **TPS-Canal+** merger, the Canal+ group has chosen **Astra** (Canal+'s current provider) over TPS's current provider, **Eutelsat**, to operate the future satellite platform
- Danish telco, **TDC,** has sold off its Baltic mobile subsidiary, **Bité,** to private equity firm, **Mid Europa Partners**, for 450 million EUR.
- Serbian carrier, **Telekom Srbije,** has acquired a 65% stake in its Bosnian counterpart, **Telekom Srpske**, for 646 million EUR.
- Call centre specialist, **Teleperformance**, takes over **twenty4help Knowledge Service**, a subsidiary of German online technical support specialist, **United Internet,** for 85 million EUR.
- French online video sharing site, **Daily Motion**, signs an agreement with **Warner Music** for the free distribution of full music videos from the latter's catalogue.
- French royalties organisation, **Sacem** and its Spanish counterpart, **SGAE**, have announced the creation of a joint structure for managing online and mobile music rights, while waiting for **SIAE** (Italy) to join.
- **China Mobile** will spend 284 million USD to acquire an 89% stake in Pakistani telco, **Paktel**, from **Milicom**.
- **Vodafone** Egypt spends 579.1 million USD for a 3G licence, awarded by the Egyptian telecommunications regulator.
- **SingTel** has signed an agreement to sell off a 49.99% stake in **Network i2i**, owner of the undersea cable that links Singapore and India, to Indian operator, **Bharti Airtel**, for 55 million USD.
- **Siemens** will be taking over US software firm, **UGS**, for 3.5 billion USD.
- Venezuela's telecommunications Minister has announced that Cuba and Venezuela will be signing an agreement to build an undersea cable infrastructure stretching 1,552 kilometres, linking the two countries.
- **InfoSpace** has confirmed the sale of its American mobile game studio to **Twistbox Entertainment** as part of its restructuring following the loss of a major mobile content client.
- United Arab Emirates-based operator **Etisalat**, has been awarded the second mobile telephony licence in Saudi Arabia, for the sum of 3.2 billion EUR.
- **Versatel** has issued 225 million shares to finance its acquisition of **Tele2**'s business in the Netherlands and in Belgium. In exchange, the agreement will allow Swedish telco, Tele2, which holds the controlling share, to take full ownership of **Versatel Telecom International**.
- Italian incumbent, **Telecom Italia**, has been ordered to pay 60 million EUR in damages to rival **FastWeb** for having impeded its development through unbundling between 2001 and 2004.

Preparing for the digital switchover

The gradual replacement of analogue terrestrial broadcasting with digital terrestrial TV (DTT) began several years back in the major developed countries, most of which have already set a deadline for the analogue switch-off. But the progress and the implementation of this dual process of switching off one form of broadcasting and switching over to another varies a great deal from country to country, revealing very different approaches to the inevitable advent of digital broadcasting.

Among the various criteria used to determine the complexity of the switchover procedure, household equipment levels are central. The process of converting users to DTT is a much greater challenge in a country where the majority of households get their TV solely from the analogue terrestrial network (Spain, Italy and France), and so need to switch to DTT to continue to receive their TV services after the switch-off. In other countries (Germany, the UK, the US), most households are not affected by the switchover since they are already equipped for cable or satellite TV reception.

Depending on distinctive national features, each country is facing its own set of obstacles to achieving the switchover: Japan, for instance, has the problem of landscape, with its many mountains depriving certain parts of the country from having DTT coverage.

To compensate for these issues, and to increase the chances of a successful switchover, public authorities in all countries are rolling out a series of initiatives: information campaigns, subsidising DTT set-top box purchases, regulations on digital televisions, complementary broadcasting solutions in shadow zones, upgrading shared antennae…

The success of the switchover depends on five key elements:

- the technical provision of DTT and of alternative reception solutions;
- pay-TV penetration levels;
- housing structure;
- existence of a free-to-air satellite offer;
- level of integrated digital TV/STB equipment in households.

For countries like Germany and the UK, meeting all of these criteria is a realistic goal and one that will be relatively easy to achieve. On the flipside, the situation in Spain and Italy is much more complex as the majority of households depends on the terrestrial analogue network, which means that both countries need to reach and maintain a high level of DTT STB equipment by the switch-off deadline. Across the board, a successful switchover will also suppose the conversion of secondary TV sets, all of which will depend on DTT, which means that users will need to acquire a compatible STB.

Key factors in switch-off success in the large European countries

	Germany	France	Spain	Italy	United Kingdom
Multi-channel TV penetration	> 90%	53%	50%	< 50%	80%
Type of Home	65% in multi-family dwellings	40% in multi-family dwellings	unknown	unknown	25% in multi-family dwellings
Existence of free satellite	Yes	Yes	Yes	Yes	Yes
Home equipment	Cable and satellite > 90%	Analogue terrestrial > 40%	Analogue terrestrial = 50%	Analogue terrestrial > 60%	Satellite, cable and digital terrestrial > 75%
Overview	Encouraged by a very high cable and satellite penetration , rate Germany should achieve its switch-off without major problems.	Despite strong progress in DTT in homes, France could see its switch-off threatened by insufficient DTT coverage.	If the rate of equipping homes with DTT continues its expansion, Spain's switch-off may succeed. However the country has set a very ambitious coverage rate that it may not be able to reach.	With a large proportion of analogue terrestrial households and a relatively slow equipment pace, it will be difficult for Italy to reach switch-off in the time allotted.	The United Kingdom shows all signs of being able to complete its switch-off process success fully and on time.

Source: IDATE

- **Orange** and **Vodafone** will be sharing their mobile networks in the UK, notably in rural zones. The agreement covers new generation (3G) and, where technically possible, current generation (2G) networks. Over the long term, the agreement will make it possible to cut costs by 20% to 30% and the number of antennae by a third.
- Italian ISP, **Tiscali,** is selling its German subsidiary to **Freenet** for an estimated 30 million EUR.
- **TeliaSonera** has taken over Danish telecom service provider, **Debitel** Danmark, for 1.3 billion SKR (140 million EUR).
- **BT** is beefing up its services in the US with the takeover of California firm, **International Network Services,** for around 100 million GBP (151 million EUR).
- French radio and TV group, **RTL**, will be selling off its 33% stake in **Media Capital**, one of Portugal's top broadcasters, to Spanish conglomerate, **Prisa** – publisher of the "El Pais" daily newspaper, among other things – for 206 million EUR.
- Colombia's telecom regulator has approved Telefonos de Mexico SA's (**Telmex**) takeover of cableco **TV Cable**. Telmex has also signed an agreement to acquire a 97.5% stake in **Cable Pacifica**.
- Italian ISP, **Tiscali,** is selling its business services division in Germany to **Ecotel Communication** for 18.5 million EUR. This is part of the ISP's strategy to concentrate its efforts on Italy and the UK.
- Austrian incumbent carrier, **Telekom Austria,** has announced that its mobile subsidiary, **Mobilkom**, has been awarded the third GSM licence in Macedonia, for the sum of 10 million EUR. The licence is valid for 10 years, and can be renewed once.
- Egyptian businessman, Naguib Sawiris, is said to be poised to take over of Greek mobile operator, **TIM Hellas,** for around 3.4 billion EUR.
- **BT** has announced the takeover of Indian firm, **i2i Enterprise**, for an undisclosed amount. i2i supplies Indian and foreign firms operating in India with telecommunications services.
- **Alcatel Lucent** has announced that it will be cutting 12,500 jobs, or 16% of its workforce, over the next three years.
- **Philips** sells the remainder of its mobile telephony business to China's **CEC**. The business generates 320 million EUR in turnover and has a staff of 240. The Dutch giant is thus pursuing its shift in focus to healthcare and lighting products.
- **Morocco Telecom** has acquired a 51% stake in incumbent carrier, **Gabon Telecom,** for 61 million EUR as part of the latter's privatisation.
- Verint Systems, a subsidiary of **Comverse** which supplies messaging, data and billing systems for communication service providers, has taken over **Witness Systems** for the sum of 950 million USD.
- Brazilian firm, Tele Norte Leste Participacoes SA (**Telemar**) and **Brasil Telecom Participacoes** have announced a joint venture with local operator, **Sky DirectTV,** for marketing a service bundle that includes satellite TV, internet and telephony in several regions in Brazil.
- British software house, **LogicaCMG,** is selling its telecom products business to a group of capital investment funds, led by **Atlantic Bridge Ventures**. It will be a 265 million GBP (392 million EUR) cash deal, or around 11.5 times the division's EBITDA in 2005.
- British incumbent telco, **BT,** has been awarded fixed telephony licences in India. They were awarded to BT Telecom India, the carrier's 74%-owned subsidiary, which was created in November with **Jubilant Enpro**.
- The globe's top IT equipment supplier, **Cisco**, is spending 135 million USD to take control of **Reactivity**, a private California-based firm that specialises in XML network management gear.
- **TF1** was withdrawn its TF1 Mobile cellular services offer from the market.
- **Neuf Cegetel** announces the takeover of fibre optic operator, **Erenis**. Erenis had been valued at close to 40 million EUR in 2006, when seeking to raise 26.5 million EUR from venture capitalists (Caisse des Dépôts, Iris, AGF, Crédit Agricole and **NetPartners**).
- **Google** has taken over **AdScape Media**, a small Canadian firm specialised in incorporating advertising in video games, for the sum of 23 million USD. This deal will allow the internet giant to compete with **Microsoft** which, in 2006, took over **Massive**: a larger version of Adscape.
- **Microsoft** has been ordered to pay **Alcatel Lucent** 1.5 billion USD for having violated digital music patents. Microsoft claims that the ruling is unfounded, and that it may appeal.
- American telco, **Sprint Nextel**, has joined forces with Kuwaiti firm, **Wataniya Telecom** to invest in the Middle East and North Africa.
- The Swedish regulator has proposed that **TeliaSonera**'s local network spin-off be based on the BT model.

Status of digital terrestrial radio

Radio is less advanced than television when it comes to the digitisation of terrestrial broadcasting, and this for several reasons:

- the benefits for consumers are less obvious: FM transmission already guarantees a good quality of service, at least in cities, and there is already a large number of available stations;
- the amount of spectrum that would be freed up by an analogue switch-off is much smaller than in the case of TV;
- standardisation issues have not yet been resolved:
  - in Europe, the standard chosen for digital radio was Digital Audio Broadcasting (DAB), which was adopted in several countries but later questioned by the operators. In November 2006 the WorldDMB organisation announced an evolution of the DAB standard which means that there are now two systems in use: DAB and the new DAB+;
  - in the United States, digital radio uses the proprietary HD Radio standard while, over in Japan, it is based on the digital terrestrial TV standard, ISDB-T;
  - other approaches to digitising radio are emerging as well: digitising the AM bands, which is being promoted by the Digital Radio Mondiale (DRM) consortium, or broadcasting radio programmes over digital terrestrial television (DTT) multiplexes.
- unlike DTT, for which a single adaptor is required, digital radio requires users to buy a new receiver;
- because of the limited spectrum available, it is not even certain that all analogue radio stations can switch to digital.

Despite these issues, the rollout of digital radio is underway in several major markets.

The analogue terrestrial radio switch-off would make it possible to overcome the lack of FM band resources. It would also mean completion of the digital migration by freeing up new frequencies for digital audio broadcasting. But digital radio penetration levels are still low and there are no definitive plans to put an end to analogue broadcasting. Only the UK has begun to specify its strategy: analogue AM radio switch-off and conversion of the AM band to the DRM standard on the one hand; reuse of the FM band for the launch of new DAB stations on the other. Meanwhile Germany, which was a pioneer in the introduction of DAB radio, had initially planned on putting an end to analogue terrestrial radio broadcasting in 2010, but this deadline will not be met as the commercial results for DAB have fallen well below expectations.

Selected digital radio service deployments

	Commercial launch	Coverage (% population end 2006)
United Kingdom	1995	85 %
Germany	1999	82 %
Italy	2003	45 %
France	no commercial deployment	
The Netherlands	2004	70 %
Spain	2005	52 %
USA	2005	60 %
Japan	2007	-

Source: IDATE

- **Verizon Wireless** has launched the first commercial mobile TV service in the US, baptised V Cast Mobile TV. It offers eight channels that carry programmes from the top national networks, in some cases before they air on TV. Available in 20 cities, the service costs 15 USD a month, using a network built and operated by US equipment supplier, **Qualcomm**.
- **Qatar Telecom** has acquired a 25% stake in Singapore mobile operator, **ST Telemedia**, for 635 million USD. It has acquired a 51% stake in Kuwaiti national mobile telephony company, Wataniya Telecom.
- Switzerland's incumbent carrier, **Swisscom,** has launched a 3.7 billion EUR takeover bid on Italian operator, **FastWeb**, which is still in the red.
- Dutch electronics giant, **Philips**, has announced the sale of 887 million shares of **TSMC** for some 1.3 billion EUR, thereby reducing its stake in the Taiwanese semiconductor-maker to 12.8%.
- The merger between German telecom operator, **Mobilcom,** and the country's number two ISP, **Freenet**, has come into effect.
- **Cisco** is beefing up its data storage business with the takeover of private company, **NeoPath Networks**.
- The European Commission is requesting that the industry increase its development efforts in the area mobile TV and has come out in favour of having a single standard, which could be DVB-H.
- **France Télécom** has been awarded two mobile telephony licences: in Guinea Bissau and in Guinea, through its Senegalese subsidiary, **Sonatel,** bringing to nine the number of African countries where the French incumbent is present.
- French operator, **Free,** is pulling out of classic landline calling. After having sold its prepaid card subsidiary, **Kertel**, to **Proximania** it is now questioning the future of **Onetel** (preselection), which currently has a base of 220,000 customers.
- American telecom equipment giant, **Cisco,** reports that it has launched a friendly 3.2 billion USD takeover bid for US firm, **WebEx**, a leading provider of webconferencing services, boasting a roughly 66% share of the market.
- **Hutchison Telecommunications International** shareholders have approved the sale of a 67% stake of Indian mobile operator, **Hutchison Essar,** to **Vodafone** for 11.08 billion USD in cash.
- Swedish telecom equipment supplier, **Ericsson,** has taken control of around 87.4% of Norway's **Tandberg Television**, a provider of digital broadcasting systems including those based on MPEG-4 compression standard. This acquisition will allow Ericsson to build a bridge between telecoms and media (internet TV).
- Chinese cellular operator, **China Mobile**, will be investing 700 million USD in Pakistan, adding to the 2,500 base stations acquired through its takeover of **Paktel** in February 2007.
- **Safran** group subsidiary, **Sagem**, has signed a sub-contracting deal with **Sony Ericsson**. Sagem will develop low-end handsets for the sector's number four player, and which will carry the Sony-Ericsson brand. Under a licensing agreement, Sony-Ericsson will use software platforms developed by Sagem for some of the handsets. In addition, the two companies will work together on developing mobile applications.
- French cableco, **Noos,** is launching a quadruple play offer, thanks to **Ten**. The offer will include Noos's internet access, TV and landline calling services, and Ten's mobile calling. Ten is an MVNO operating on **Orange**'s network.
- **Nokia** will be investing 60 million EUR to build a mobile telephony plant in Romania, which will supply markets in Europe, the Middle East and Africa.
- **Portugal Telecom** shareholders have rejected a hostile 11.8 billion EUR takeover bid by the **Sonae** conglomerate. The majority of the carrier's shareholders ruled too low the bid that Sonea launched through its Sonaecom subsidiary.
- The Italian Post Office (**Poste Italiane**) has decided to enter the mobile telephony market, operating as an MVNO using capacity bought from **Vodafone**.
- Italy's largest supermarket chain, COOP Italia, has signed an agreement with **Telecom Italia Mobile** to create an MVNO, **CoopVoce**.
- **Alcatel Lucent** has been awarded a three-year, 6 billion USD contract by US mobile telephony operator, **Verizon Wireless**, to supply equipment, software and services that will allow the operator to increase the capacity and coverage of its network based on CDMA EV-DO 3G technology.
- The Ukrainian government is preparing to sell off a 40% stake in **Ukrtelekom** for the sum of 4 billion USD.
- **Electronic Arts**, the world's largest independent video game publisher, will be investing 105 million USD in online game publisher, **Neowiz**. EA wants to develop its European operations quickly. With its takeover of American company, **Jamdat**, in early 2006, Electronic Arts became the top player in the United States' mobile gaming market, and number two in Europe just behind Gameloft, a **Ubisoft** subsidiary of which Electronic Arts owns a 19.6% share.

New round of telco consolidations

Rankings for the globe's largest telecom carriers has changed substantially in recent times, not only because of particular intrinsic market dynamics, but especially as a result of a series of mergers and acquisitions and corporate restructurings. If the major external growth drives that marked an earlier era reached their peak during the heart of the internet bubble – and ended abruptly when the bubble burst – M&A have been gradually coming back to the fore in the past two or three years.

Consolidation of the American market has spurred US telcos to the top of the ranks with AT&T (ex-SBC) becoming once again the globe's largest carrier, in terms of revenue, following its takeover of Bell South. Verizon Communications, which has merged with MCI, is close on the heels of Japanese incumbent, NTT, while Sprint Nextel is now also one of the world's 10 largest operators.

Over in Europe, it is Telefónica which has applied the most aggressive expansion strategy in recent times: after taking control of Cesky Telecom and then O2, the Spanish carrier joined forces with a group of Italian investors which took over Telecom Italia in summer 2007. Telefónica also remains very active in Latin America, while France Telecom has sold off its assets in Africa. Deutsche Telekom, meanwhile, has beefed up its mobile business, both in the Old Continent with the takeover of Orange Nederland and in the United States with the acquisition of SunCom through its local subsidiary, T-Mobile USA. Smaller incumbent carriers have also joined the fray, with Swisscom taking over Italian operator FastWeb and Telenor's forays into Eastern Europe and, more recently, Asia.

Also in Asia, the consolidation wave has made its way to China where the already high level of market concentration could increase with a restructuring plan that is expected to lead to a clustering of virtually the entire market around three main groups: China Telecom, China Netcom and China Mobile.

And, finally, although it involves incumbent carriers for the most part, the trend is also reaching alternative operators which, after a period of healthy growth, are now looking for new growth outlets on the international stage or in the area of convergence. Vodafone has been reorganising its business for some years now, on the one hand selling off subsidiaries deemed non-strategic (e.g. in Japan) while, on the other, investing in high potential regions such as India where it recently took control of Hutchison Essar (now Vodafone Essar). Prime examples of the fixed-mobile convergence trend include the announced merger of Hanaro Telecom and SK Telecom in South Korea and neuf cegetel's takeover of SFR in France (cf. focus on fixed-mobile convergence), while further proof of the consolidation trend can be found in a series of smaller M&A in France's broadband market (neuf telecom/cegetel merger, neuf cegetel takeover of AOL France and Club Internet; Tele2 France's sale of its ADSL assets to SFR, announced sale of Alice France).

Main M&A between telecom carriers in 2007

Buyer	Operator acquired	Date	Amount[2]
Vodafone Group (UK)	Hutchison Essar (India)	March 2007	8.9
Swisscom (Switzerland)	FastWeb (Italy)	March 2007	4.2
Telco Holding (Italy/Spain)1	Telecom Italia (Italy)	April 2007	4.1
Weather Investments (Egypt)	TIM Hellas (Greece)	February 2007	3.4
Saudi Telecom (Saudi Arabia)	Maxis Communications (Malaysia)	June 2007	2.2
Verizon (USA)	FairPoint Communications (USA)	January 2007	2.2
AT&T (USA)	Dobson Communications	July 2007	2.1
Verizon Wireless (USA)	Rural Cellular/Unicel	July 2007	2.0
Deutsche Telekom (Germany)/T-Mobile USA	SunCom (USA)	September 2007	1.8
France Telecom, Mid Europa Partners	One (Austria)	June 2007	1.4
Deutsche Telekom (Germany)	Orange NL (Netherlands)	June 2007	1.3

(1) Purchase of the 18%-stake of Pirelli's Olimpia Holding in Telecom Italia Telco Holding is 42.3%-owned by Telefónica (2) billion €

Source: IDATE

- Incumbent carrier **Telmex** takes control of two Colombian operators, **Cablecentro** and **Satelcaribe**.
- **Nextwave** has taken over California-based mobile broadband multimedia service provider, **IPWireless**, for 100 million USD.
- **Orange** (**France Télécom**'s group) has been awarded a mobile telephony and internet licence in the Central African Republic.
- Japan's number two mobile operator, **KDDI**, announces that it will be launching an MVNO business in the US using the **Sprint Nextel** network.
- **Vivendi** is asking for 3 billion EUR in damages from **Deutsche Telekom** for the "brutal" halt to negotiations for the takeover of Polish operator, **Elektrim**.
- Canadian broadcaster, **Astral Media,** takes control of fellow Canadian firm, **Standard Radio,** for 1 billion CAD (666 million EUR) and thereby becomes the country's largest radio corporation.
- The Russian regulator, Federal Communications Agency, or Rossvyaz, launches a call for candidates for GSM 900 and 1800 licences in 86 regions around the country (excluding Moscow and Saint Petersburg).
- **France Télécom** has acquired a 51% stake in **Lightspeed Communications** in Bahrain via **Jordan Telecom.**
- **Nokia** and **Samsung** will be joining forces to achieve interoperability for the mobile handsets which will provide access to mobile TV using DVB-H technology.
- **Google** takes control of **DoubleClick**, a company specialised in online advertising services, for 3.1 billion USD in cash.
- In a report submitted to the French government, an ad hoc working group recommends four courses of action to support the telecom sector: create the conditions for a healthy ecosystem at the European level, provide the means for competing on an equal footing with European and Asian rivals, develop ultra-broadband and ensure industry monitoring.
- Sweden's **Ericsson**, Finland's **Nokia** and India's **ITI** will be helping to expand the network of Indian operator, **BSNL,** as part of a global agreement that could be worth as much as 9.5 billion USD.
- British incumbent carrier, **BT,** will be taking over data communications service provider, **Comsat International**, for roughly 100 million GBP (147 million EUR), in a bid to beef up its operations in Latin America.
- American broadcaster, **Clear Channel,** sells its channels to investment fund, **Providence Equity Partners**, for 1.2 billion USD (880 million EUR), and so withdrawing completely from the TV market.
- Chinese operator **China Telecom** and **Google** have formed a strategic partnership, giving Google access to an advertising market comprising some 400 websites.
- German operator, **Versatel,** could raise up to 1 billion EUR through its IPO.
- **Business Objects** takes over French publisher, **Cartesis**, which specialises in decision-making and performance management applications (financial consolidation, budget planning, reporting) for 225 million EUR in cash.
- Spanish incumbent, **Telefónica,** is selling off its British subsidiary specialised in emergency radio services to Australian bank, Macquarie, for 2.98 billion EUR.
- The heads of **Portugal Telecom** will be spinning off the operator's multimedia subsidiary, **PTM,** before the end of the year. The Portuguese incumbent has also agreed to sell its stake in **Vivo Participoes**, a holding company that controls the Portugal Telecom mobile assets in Brazil that are owned jointly with **Telefónica,** for 3 billion EUR.
- The **Pirelli** Board of Directors agrees to sell the 18% stake in Telecom Italia that the company controlled via holding company, **Olimpia,** to banks Mediobanca and Intesa Sanpaolo for 4.1 billion EUR. The banks are associated with **Telefónica** and backed by Generali and Benetton. Telefónica will control 42.3% of the equity of the new holding company, **Telco**.
- Authorities in India have given **Vodafone** the green light for its takeover of Indian mobile operator, **Hutchison Essar**, for 11.1 billion USD. Hutchison Essar recently launched a call to tender worth some 2 billion USD for network equipment (35 to 40 million lines) to supply the fast-growing Indian mobile market.

More than 1.1 billion mobile handsets sold worldwide in 2007

In 2007, the shipment volume of mobile terminals totalled 1.143 billion units, i.e. 16% more than in 2006 and 36% more than in 2005. In terms of revenue, the annual market was worth 131 billion USD, increasing 12% over the year before. GSM still accounted for the bulk of this growth, but the 3G market is gaining momentum.

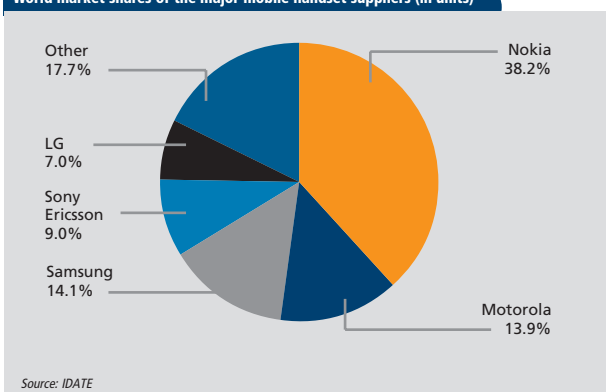
As we can see through the slight gap between growth levels in volume and in value, the average selling price has been decreasing – driven by the growth of the under-30 USD segment – and was around 110 USD at year-end. The price decline is expected to slow down due to an improvement in the product mix, the booming market of convergent devices and the strong growth of 3G handsets. However, the sustained hyper growth of emerging markets worldwide, the tougher price-based competition and the continued strength of the euro will maintain pressure on prices.

IDATE estimates the 3G market to have reached 167 million units in 2007, twice as many as the number sold in 2006, and accounted for 15% of total sales in terms of volume and much more in terms of value. In 2011, we forecast that nearly 50% of handsets sold will be 3G or the next generation!

In terms of geographical breakdown, close to half of mobile handsets sold worldwide in the Asia Pacific markets (45.3%). Western Europe and North America ranked second and third but with market shares of only 14.4% and 12.7%! Worth noting, however, is that the average number of handsets sold per inhabitant is still far higher in industrial regions that it is in emerging markets. The average selling price is also higher, especially in North America (over 170 USD, on average). Another factor affecting the momentum of industrial markets, which now tend to be saturated in terms of equipment, is the trend towards replacement. In North America and in Europe, more than 90% of sales in 2007 were to users replacing their old handset: with around 150 million units for Western Europe, this means that one out of three mobile customers bought a new, generally higher-end, handset in 2007.

The largest vendor, Nokia, once again enjoyed a sizeable increase in its share of sales volume in 2007, with an average 38.2% market share worldwide – up from 35.3% in 2006. On the flipside, Motorola lost market share, which fell from 22% in 2006 to 13.9% in 2007! Samsung could benefit from Motorola's slump, and has now moved up to the number two spot in the world market (14.1% share). Sony Ericsson and LG could also increase their share of the pie to 9% and 7%, respectively.

World market shares of the major mobile handset suppliers (in units)



Source: IDATE

- **Comcast** buys two regional sports channels, 50% of FSN New England and 60% of FSN Bay area, from **Rainbow Media** Holdings LLC, a **Cablevision** unit, for 570 million USD.
- **Cablevision**'s Board of Directors (cable operator with 3.3 million customers) accepted an offer to buy from the Dolan family, which already holds 22.5% of the shares and 74% of the voting rights, for 10.6 billion USD.
- The Swedish government, which holds 45.3% of the Swedish-Finnish operator, **TeliaSonera**, has decided to sell 8% of the company's shares, exclusively to institutional investors, for approximately 2.1 billion EUR.
- **Swisscom** sells its subsidiary, **Antenna Hungaria**, to the French company, **TDF**, for 540 million CHF (327.4 million EUR).
- The **Nokia Siemens Networks** joint venture announces the layoff of 9,000 redundant employees around the world by the end of 2010, or 15% of its employees.
- The French fixed network operator, **Neuf Cegetel**, buys the **Deutsche Telekom** subsidiary, **T-Online** France (**Club Internet** brand), for 465 million EUR.
- The British company, **Pearson**, a world leader in scholastic publishing, strengthens its position in e-learning by buying the American company, **eCollege**, for 477 million USD.
- A consortium led by **Mediaset**, including Silvio Berlusconi, John de Mol and Goldman Sachs, take over 75% of **Endemol** held by **Telefónica**, for 2.6 billion EUR.
- **Oracle** buys **Agile Software**, a company specialising in PLM (Product Life Management) software, for 495 million USD.
- American equipment manufacturer, **Motorola**, signs a 2.3 billion USD contract (1.7 billion EUR) with the largest mobile phone distributor in China, **China Postel** Mobile Communications Equipment, to supply 16 million telephones in 2007.
- **Philips** continues its withdrawal from **TSMC** by selling 4.6% of the Taiwanese semiconductor fabricator, reducing its shareholding to 12.8%.
- **Microsoft** buys **aQuantive**, an on-line advertising company, for 6 billion USD.
- The American publisher, **Electronic Arts**, buys 15% of the shares in **The9.com**, a Chinese platform specialising in massive multi-player on-line games, for 167 million USD.
- **TPG** and **Goldman Sachs** announce the purchase of **Alltel** for 27.5 billion USD (20.4 billion EUR) in cash.
- The European Commission approves the purchase of **BMG Publishing**, the music publishing business owned by the German company, **Bertelsmann**, originally announced in September 2006, by **Universal Music**, a subsidiary of **Vivendi**, for 1.63 billion EUR.
- The German publisher, **Axel Springer,** strengthens its Internet position by buying, along with the Swiss **PubliGroupe**, the Berlin-based multi-media services company, **Zanox.de**, for 214.9 million EUR.
- The Venezuelan government announces the nationalisation of the operator, **CANTV**, taking over 86.2% of the shares and buying the 28.5% held by **Verizon** for 572 million USD.
- The Belgian operator, **Mobistar**, subsidiary of **Orange**, announces the purchase of 90% of the shares in the Luxemburg operator, **Voxmobile**, for 80.3 million EUR.
- **STMicroelectronics** and **Intel**, with the help of **Franscisco Partners**, create a joint venture to produce flash memory for 3.6 billion USD.
- The French computer company, **Bull**, buys the Spanish IT service provider, **Siconet**, and sells its Portuguese subsidiary to **GFI**.
- The European Parliament approves the European Commission's roaming regulation, setting ceilings on roaming charges within the European Union on mobile operators (49 c€BT for calls made from other EU countries and 24 c€BT for calls received from other EU countries.
- The American computer company, **HP**, lands a 7 year contract with NASA worth 5.6 billion USD.
- **Alcatel Lucent** lands a 5 year contract with the New Zealand public power utility, Transpower, to build, operate and maintain its communications network.
- **Swisscom** buys 35% of the shares in **Transmedia**, a company specialising in VOD.
- **Neuf Cegetel** buys **Ozone**, which specialises in WiFi telephone and Internet access with a network that covers 60% of the population in Paris.
- The German operator, **Deutsche Telekom**, buys shares in **Jajah**, the Luxemburg-Austrian voice over IP specialist.
- **Skype**, the original voice over IP free software, is withdrawing from the Continent.
- **Vodafone** will sell the 5.6% that it directly holds in the Indian operator, **Bharti Airtel**, for 1.6 billion USD.

IP video distribution: open or closed systems?

Continuous rise of video traffic calling the economics of distribution into question

The internet protocol is being used more and more for distributing TV services. But hidden behind this protocol which is becoming a common feature of many fixed and mobile networks is a multitude of situations and options. Video over IP can mean streaming on the web, watching videos on a mobile phone or accessing digital television services on the TV set, while distribution solutions currently remain specific.

P2P solutions are clearly the most economical, but the difference is significant only compared to a heavy load unicast or a light load multicast. Only multicasting (and only for live broadcasts) and, to a lesser degree, CDN technologies can deliver a quality of service comparable to that of classic television in all circumstances. When demand is high, unicasting is poor at handling a heavy load on a single server while the quality of service delivered over P2P networks remains limited for niche content for which few sources are available.

The development of online video may thus call into question existing peering agreements and the (erroneous) perception that bandwidth is free. The current model of unlimited bandwidth for all users, which was introduced as a means of attracting subscribers, is beginning to suffer the repercussions of its generosity as the cost of bandwidth is dropping much more slowly than the rate at which the volume of traffic is increasing.

Capturing the value-added of distribution services

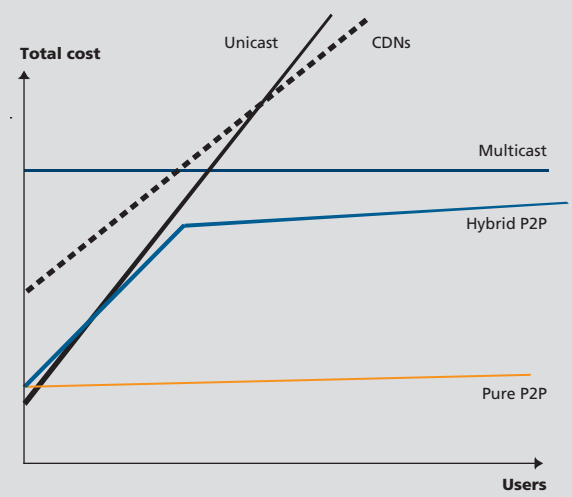
Among IPTV offers where the middleware component acts as the central link in the chain, platforms that were initially developed in-house – possibly with a third party, depending on the operator – are among the largest IPTV deployments around the world, with stand-alone offers (particularly from Microsoft) being the alternative. But the dividing line between the two systems is increasingly tenuous as the separation between the business of operator and that of integrator is tending to be erased.

In the mobile TV market, solutions that offer unlimited consumption (dedicated broadcasting) are going head to head with 3G streaming solutions. Although the players have positioned themselves clearly in one camp or the other, platform suppliers tend to be increasingly network-agnostic and providing solutions for both segments. While it is still too early to speak of fixed-mobile convergence for video, a great many suppliers are setting their sights on IMS architectures to facilitate the future transition.

The online video distribution segment is having to contend with a major upheaval as services and solutions proliferate. At the very least, traditional media's growing interest in this new type of distribution will lead to framework agreements for the most innovative suppliers that will serve as points of reference. It does appear that the development of IP video consumption on new networks and devices is creating opportunities for internet specialists.

Lastly, multi-platform solutions are starting to become a reality in solutions providers' catalogues (mobile TV, IPTV and even internet TV).

Economic scorecard of the various architectures available for service providers



Source: IDATE

- **eBay** buys the California start-up, **StumbleUpon**, which operates a site that lets users refer content to other members, for 75 million USD.
- **Google** buys the start-up, Feedburner (which manages RSS feed content) for about 100 million USD and Panoramio (which provides on-line photo storage and links them to maps).
- Private investment firms, **TPG** and **Silver Lake Partners,** buy American equipment manufacturer, **Avaya**, for 8.2 billion USD**.** In 2005-2006, Avaya's turnover was 5.2 billion USD with a net profit of 201 million USD.
- **Palm** sells 25% of its shares to a Californian investment firm, **Elevation Partners**, for 325 million USD.
- **TIM Hellas**, Greek operator bought by **Weather Investment Group**, is renamed **Wind Hellas**.
- For 3.6 billion USD, the Singapore company, **Flextronics**, merges with its primary competitor, **Solectron** from California, creating a company of 200,000 people and 30 billion USD in turnover.
- The Danish operator, **TDC**, sells its German mobile telephone company, **Talkline**, to the German operator, **Debitel**, for 560 million EUR. Talkline's turnover was 7.7 billion DKK (1.03 billion EUR) in 2006.
- **France Télécom** buys Spanish internet access provider, **Ya.com** (400,000 subscribers) from **Deutsche Telekom** for 320 million EUR. In turn, Deutsche Telekom buys **Orange** Netherlands from France Télécom for 1.3 billion EUR.
- **Ericsson** signs a contract for one billion USD to supply mobile networks to **China Mobile**. Its subsidiary, **Sony Ericsson**, will sell 600 million USD worth of mobile phones to **China Postel** Mobile Communications Equipment.
- **Sina**, owner of the largest Chinese Internet portal, Sina.com, has agreed to a partnership with **Google** in the areas of search and advertising.
- **Sprint Nextel** buys **Northern PCS Services LLC** for 312.5 million USD.
- The British investment firm, **BC Partners**, acquires 76% of **Intelsat**, largest satellite operator in the world (51 satellites in operation), in a transaction that is worth 5.03 billion USD. Along with other investors, BC partners also took on 11.4 billion USD in debt.
- **E.On**, which held 50.1% of the shares in the Austrian telephone operator, **One**, sells its shares to **France Télécom** and **Mid Europa Partners** for 1.4 billion EUR.
- Cable operator, **Liberty Global**, raised its stake in the Belgian operator, **Telenet**, from 31.3% to 49.7% for 466 million EUR.
- **Business.com**, put up for sale for 300 to 400 million USD, could become the world's most expensive Internet domain name.
- The French Ministry of Finance sells 5% of its shares in **France Télécom** for 2.7 billion EUR. The government now only holds 27.4% of the incumbent operator's shares.
- **Saudi Telecom** acquires 25% of the Malaysian mobile operator, **Maxis Communications**, for 3.04 billion USD. Maxis holds 74% of the Indian mobile operator, **Aircel.**
- The European Commission starts proceedings in the European Court of Justice against German authorities, regarding the law regulating **Deutsche Telecom's** very high speed internet access (VDSL).
- The German television company, **ProSiebenSat.1** spends 3.3 billion EUR to acquire **SBS Broadcasting**. The new company will continue to be called ProSiebenSat.1 Media, available in 13 European countries, operating 24 free television channels, 24 paid television channels and 22 radio stations.
- **CommScope**, specialist in communications networks, announces the acquisition of the American company, **Andrew Corp.**, for about 2.6 billion USD.
- The European regulation on international roaming rates, published in the Official Journal of the European Union, will end the "Eurotarif" that consumers have been paying by setting a maximum limit for calls made (0.49 EUR, not including VAT) and received (0.24 EUR, not including VAT) on mobile phones to or from other EU member nations.
- The Greek government put up for sale 10.7% of its shares in the operator **OTE** for an expected return of a little more than 1.1 billion EUR.
- **Telecom Italia** sells its 10.36% holdings in **Oger Telecom** to **Saudi Oger** for 477 million USD.
- **BCE** finalises an agreement for its acquisition by a group of investors headed by **Teachers Private Capital, Providence Equity Partners**, and **Madison Dearborn Partners**, for an estimated 51.7 billion CAD (48.5 billion USD), including 16.9 billion CAD (15.9 billion USD) in debt, preferred stock and common stock.
- **Apple** launches its telephone iPod, iPhone, on June 29 in the United States, distributed exclusively by ATT Wireless. It European launch is planned for the end of 2007.
- The Moroccan government sells 4% of the shares in **Morrocco Telecom** for 4.57 billion MAD (420 million EUR). The state retains 30% of the incumbent operator, controlled 51% by Vivendi.

Mobile broadband in South Korea

While South Korea stands out for being a pioneer in fixed ultra-broadband rollouts, the country also boasts a very dynamic mobile market and is proving a veritable real mobile broadband laboratory; South Korea is now equipped with CDMA 2000 1x EV-DO (17.6 million customers in September 2007), HSDPA (2.5 million customers) and WiBro commercial networks, the latter being the local version of mobile WiMAX. The country is also home to two mobile TV networks: one S-DMB (satellite) and one T-DMB (terrestrial) that serve a total 6.5 million subscribers.

A number of elements could factor in to future developments:

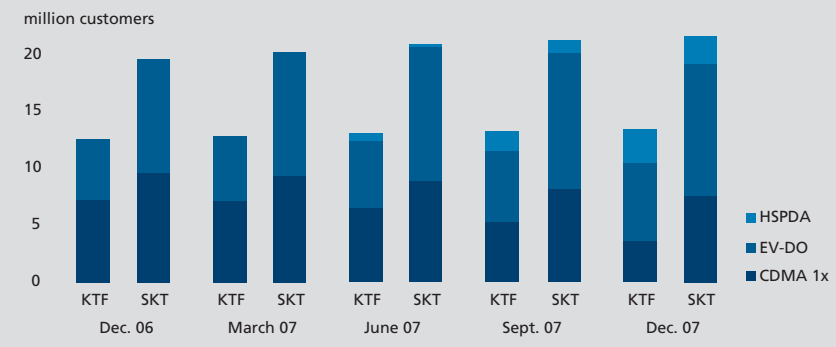
- first, the speeds offered by these networks are increasingly high. In 2007, HSDPA could supply downstream peak rates of 1.8 Mbps and even as much as 3.6 Mbps in Seoul and its surrounding area; it is expected that bitrates will increase to 7.2 Mbps by the end of 2008, then to 14.4 Mbps by 2012 (KTF announced that 100% of its customer base will have switched to HSDPA at that time);
- the availability of an appealing line of handsets also played a major role in providing users with an incentive to switch from one standard to another. By mid-2007, KTF and SKT were marketing 11 and 7 HSDPA handset models, respectively, supplied by Samsung and LG, at prices ranging from 200,000 to 600,000 KRW (150 to 450 EUR);
- handset subsidy regulations are gradually being lifted, starting with subsidies for three-year contracts and for new WCDMA/HSDPA and WiBro subscribers (subsidy up to 40% of the price of their phone once every three years). In April 2007, the regulation was made less restrictive and is expected to be lifted completely in April 2008;
- data traffic tariffs are quite attractive, with many plans on offer. For KTF in particular, these tariffs represent a sizeable discount on CDMA rates (e.g. 60% less for videophony);
- over the past few years, SKT and KTF have developed a host of multimedia services for their EV-DO and now HSDPA customers: videophony, VoD, music download, trailers, access to social networks… On the whole, the trend has been to provide mobile access to those applications (rich media and user-generated content) that drive the success of the fixed web through partnerships with the top internet portals.

As a result, data traffic per user could increase significantly, with data ARPU already accounting for 30% of SKT's usage revenue and 20% for KTF. Furthermore, the first figures released by KTF on the ARPU generated by its HSDPA customers reveal a clear increase on average per-user revenue: around 35 EUR (versus 31 for EV-DO subscribers) with 26.4% being generated by data (versus 21.4% for EV-DO).

In the meantime, mobile TV could also develop, building on the 6.5 million subscribers reached by mid-2007, though concerns remain over long-term profitability for operators.

Finally, if advanced mobile services could grow very rapidly, WiBro has fallen short of expectations, delivering slower than anticipated speeds and attracting only 20,000 subscribers as of June 2007, a year after its commercial launch.

Trends in KTF and SKT cellular subscriber bases



** CDMA 1x doesn't include EV-DO. Thus, the total CDMA 1x subscriber is 'CDMA 1x'+' EV-DO'*

Source: operators and IDATE estimates

- Israeli equipment supplier, **ECI Telecom,** is bought by a subsidiary of the **Swarth Group**, controlled by Shaul Shani and Ashmore Investment Management Ltd., for 1.2 billion USD.
- The European Commission slaps **Telefónica** with a fine of more than 151 million EUR for having abused its dominant position in the Spanish broadband access market for over five years.
- American telco, **AT&T,** takes over Oklahoma City-based wireless telephony operator, **Dobson Communications** (1.7 million subscribers, chiefly in rural and suburban zones), for roughly 2.8 billion USD.
- **Google** takes control of California-based firm, **Postini**, a leader in online security solutions, for 625 million USD in cash, as part of a bid to help persuade businesses to adopt the search giant's online software.
- **France Télécom** acquires the corporate and managed services branches of Indian company, **GTL,** for 21 million EUR, and so strengthening the position of its corporate services subsidiary, Orange Business Services, in India and the Asia-Pacific zone.
- Internet portal, **Yahoo!**, buys the remaining 80% of online ad auction platform **Right Media**, for the sum of 650 million USD.
- The European Commission gives its approval for the takeover of major record label, EMI, by private, firm **Terra Firma**,. for 2.4 billion GBP (3.2 billion EUR).
- Italian telecommunications heavyweight, **Tiscali**, takes control of the broadband and telephony branch of UK telephony group **Pipex**, for 210 million GBP (310 million EUR).
- Telecom equipment maker, **Ericsson,** is awarded a 2 billion USD contract by Indian operator **Bharti Airtel**, to develop the latter's GSM network.
- Italian incumbent carrier, **Telecom Italia,** pulls out of the landline market in Brazil, selling off its stake in the company's number three fixed operator, **Brasil Telecom**, to three local investment funds – Previ, Petros and Funcef – for 515 million USD.
- **TomTom**, the globe's leading provider of portable GPS navigation systems, beefs up its European operations with the takeover of roadmap specialist, **Tele Atlas**, for 2 billion EUR.
- After having got the go-ahead from the European Commission, French mobile operator, **SFR**, completes its takeover of **Tele2**'s fixed calling and ADSL business France for 345 million EUR.
- **HP**, the world's largest microcomputer manufacturer, acquires **Opsware**, a software publisher specialised in information systems automation, for the sum of 1.65 billion USD.
- The European Commission authorises the creation of a joint venture between **SES Astra** (Luxembourg) and **Eutelsat** (France) to supply satellite infrastructure for mobile TV broadcasting, along with mobile voice and data communications.
- British comparison shopping website, **Moneysupermarket.com** floats 43.4% of its capital on the London Stock Exchange, giving the company a market valuation of 843 million GBP (1.3 billion EUR).
- After having taken umbrage under Chapter 11 bankruptcy protection in the United States on 1 June, American MVNO **Amp'd**, whose majority shareholder is **Vivendi**, pulls the plug on its operations on 31 July 2007. The company's assets are to be put up for auction.
- Dutch telco, **KPN,** makes a friendly takeover bid for **Getronics,** a fellow Dutch firm specialised in IT services, valuing it at 766 million EUR, to which are added 430 million EUR in debt takeover.
- In the US, **Verizon Wireless**, acquires Rural Cellular, parent company of mobile operator **Unicel**, for 757 million USD (2.7 billion USD, including debt takeover).
- **Steria** acquires **Xansa** for 700 million EUR, giving the French IT firm a foothold in the Indian market.
- After three months of vigorous efforts, media magnate Rupert Murdoch and his **News Corp.** get the go-ahead from the Bancroft family of shareholders for the takeover of the **Dow Jones** group for 5 billion USD.
- British Sky Broadcasting (**BSkyB**), the UK's largest pay-TV provider, has announced its acquisition of one of the leading set-top box suppliers, **Amstrad**, for 125 million GBP (185.2 million EUR).

Spectrum tax to finance public television?

The digital dividend requires a review of the terms governing television channels' access to terrestrial frequencies. Is it also time to review public TV financing?

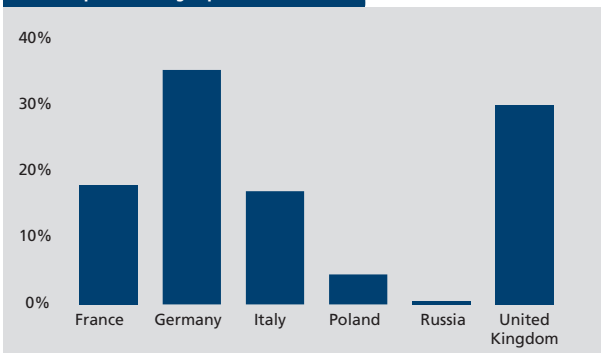
Unlike mobile telecommunication services, TV channels use terrestrial spectrum for free. In exchange, private and public channels comply with public interest obligations: obligation to invest in the production of audiovisual works, broadcast of European works, etc.

In 2011, in principle, the analogue TV switch-off in France will lead to a reallocation of spectrum to audiovisual or telecommunication services, and probably to both (the digital dividend). The coexistence of services that access the terrestrial spectrum for free and those that have to pay for it makes for a difficult equation.

The announced end to advertising on French public TV channels means that new sources of income need to be found. The first solution suggested (tax on internet access and mobile telephony, on private channels' revenue and on brown goods) seems largely contrived.

An alternative approach lies in linking public TV financing and private channels' access to spectrum. The existence of public service channels should logically translate into lighter public interest obligations for private channels. In exchange, commercial channels would pay for the use of the scarce and State-owned frequencies, which would be governed by the general laws that already apply to telecommunications operators. The monies collected in this way could go to financing public channels.

Share of public funding in public TV revenues



Source: IDATE

A more stable ecosystem?

This approach has several virtues:

- paid access to spectrum guarantees a better optimisation of the resource: channels have an incentive to optimise the use of their frequencies to lessen their taxes. A homogeneous legal framework governs television operators and telecom carriers required to "converge" towards the same frequency bands;
- public channels benefit from an added and lasting source of income (aside from the TV tax), which is globally proportionate to private channels' revenue (as the spectrum tax is based on private channels' income);
- private channels' production obligations are lightened and they benefit from the influx of advertising monies no longer being spent on public channels.

Several countries are moving towards charging all parties for use of the spectrum. The digital dividend provides an added opportunity to organise public television financing in a more durable fashion.

- **Vivo**, a mobile operator owned by Spain's **Telefónica** and by **Portugal Telecom**, has acquired a 22.7% stake in **Telemig Celular** and a 19.34% stake in **Tele Norte Celular**, two Brazilian operators, for roughly 465 million EUR. The group then launched a public buyout offer to gain control of the two companies, eventually selling Tele Norte Cellular to **Oi** (ex Telemar Norte Celular).
- The assets of **XTS Telecom**, the number three operator in the Antilles and now in receivership, are to be taken over by **Proximania** (assets and staff) and **Outremer Telecom** (WiMAx business), for a total 3.4 million EUR.
- India's third largest IT services provider, **Wipro**, takes control of US firm, **Infocrossing,** for 600 million USD in cash.
- **Spock**, a new people search engine, launches its service on 8 August with 100 million profiles available and 300 million more in the works. The site is financed by venture capital firm, **Clearstone Venture Partners** (Overture, PayPal, Mp3.com...).
- Carlo De Benedetti's **Management & Capitali** fund will be investing between 50 and 165 million EUR in **Tiscali**'s UK subsidiary, through a convertible loan agreement.
- In the UK, the mobile TV service operating over DAB-IP (a variation of the European DAB digital radio standard) launched by **Virgin** and **BT**, closes down only a year after it began. In the United States, broadcaster **Crown Castle** puts an end to its DVB-H experiment in New York and withdraws from the market.
- Swedish telco, **Tele2**, announces the sale of its operations in the Russian region of Irkutsk to **Vimpelcom** for 1.6 billion SEK (172 million EUR).
- The European Commission gives the green light to the creation of **Numonyx**, a joint venture between Franco-Italian semiconductor manufacturer, **STMicroelectronics,** and its chief competitor, **Intel,** making it the world's largest supplier of flash memory for mobile phones.
- **Microsoft** acquires online advertising specialist, **aQuantive**, for 6 billion USD.
- **EMC** subsidiary, **VMware**, floats 10% of its capital on the stock market, bringing in 1 billion USD for the data storage giant.
- Having managed to acquire only 41% of **GFI Informatique** shares and voting rights, Japan's **Fujitsu** fails its takeover bid.
- **Citrix** takes control of a **VMware** rival, **XenSource**, for 500 million USD.
- Iraq awards three mobile telephony licences: to Kuwaiti operator, **Mobile Telecommunications**, to **AsiaCell** and to Iraq's **Korek Telecom**, for 3.75 billion USD.
- American insurance company, **AIG**, which owns telecom carriers in Romania and Slovakia, announces the acquisition of a 90% stake in Bulgaria's largest telco, **BTC,** for roughly 1.5 billion EUR.
- Italian regulatory authority, AGCOM, is pushing for the functional separation of incumbent carrier **Telecom Italia**'s network by the end of 2007.
- Hollywood studios, **Paramount Pictures** and **DreamWorks Animation**, have announced that, in future, their DVDs would be solely in HD-DVD format, which marks a blow to rival format, Blu-ray.
- German semiconductor producer, **Infineon,** takes over American firm **LSI Corp.**'s mobile chipset business for 330 million EUR.
- American companies, **MTV** (a Viacom subsidiary), **Verizon Wireless** and **RealNetworks** join forces in the online music business to better compete with **Apple's** iTunes Music Store.
- **IBM** takes control of private firm, **WebDialogs**, a **Cisco** and **Citrix** competitor in the videoconferencing solutions market.
- Taiwanese microcomputer maker, **Acer,** takes over is American rival, **Gateway**, for 710 million USD.
- As a result of the review of the Telecoms Package, the European Commission is examining the possibility of creating a European electronic communications agency, with the goal of creating a veritable internal telecommunications market.
- Altice B2B France, which is owned by **Altice** and investment fund **Cinven**, will be taking control of telecom operator, **Completel,** followed by an IPO, valuating the group at 723 million EUR.
- Japanese mobile operator, **NTT DoCoMo**, announces the development of two smartphones (phone + PDA) with **Fujitsu** and Taiwanese handset supplier, **HTC**, to be equipped with the Japanese version of the Microsoft Windows Mobile 6.0 OS, with plans for release in early 2008.
- The Slovenian government will be selling off 49% of incumbent carrier, **Telekom Slovenije**, for the expected sum of 3.1 billion EUR.
- Following on the heels of **Universal Music**, after a series of disagreements (poor piracy prevention on the iPod, sale price, etc.) **NBC Universal** has decided not to renew its contract with Apple for supplying TV programmes and serials to iTunes, which expires at the end of 2007.

Web 2.0: NBC's ongoing initiatives

Reporting the lowest ratings of the top three American TV networks, NBC first opted for a defensive strategy in response to the declining growth of ad revenue and the development of new online video services. The company's priority was to cut the channel's programming costs and to consolidate primetime programming. The network is now rolling out a series of initiatives to forge itself a strong presence in the online video services market.

NBC leaves iTunes for Amazon

NBC has ended its partnership with iTunes for the sale of programmes, turning instead to Amazon. There were several reasons for the conflict with iTunes: according to NBC, sales on iTunes in 2006 totalled only 15 million USD, even though NBC Universal accounted for 40% of total sales on Apple's platform. NBC is said to have demanded the price of episodes be increased to 2.99 USD, or that it earn a share of iPod sales – both of which Apple refused. Another reason for the split was NBC's demand to offer packages of an entire season's episodes, which runs counter to Apple's policy of offering single unit sales.

Launch of Hulu

Available in private beta since October 2007, Hulu.com – the video site created by NBC and News Corp. – offers a different approach than YouTube or DailyMotion, as Hulu will distribute professionally-produced content for free and not allow users to post their own content. The business model is based on ads inserted during the programme. Launched as an independent site, a version of Hulu will also be available on the AOL, MSN, MySpace, Fancast and Yahoo! portals. More than seeking to attract web users to a new site, Hulu will take its audience where it already exists. The site will also allow users to embed videos (using sequences they create themselves) in e-mails, on their blogs and on personal pages.

The platform offers mainly series (Family Guy, The Pretender, 24, Heroes, The Simpsons…) and a selection of films.

Sony and MGM have joined the list of partners, supplying a relatively large selection of content from the outset.

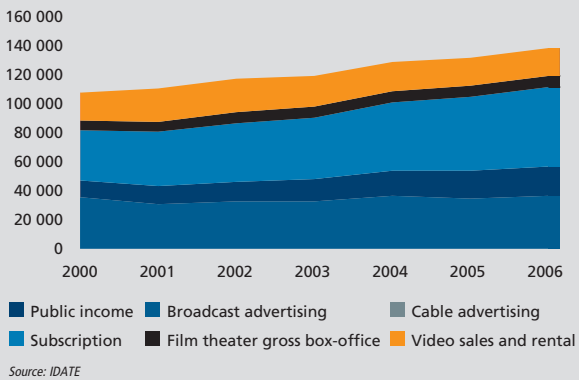
NBC offers free downloads of TV series on NBC Direct

The network has been testing a service called NBC direct since October 2007. Available to Windows users, the service allows them to download episodes containing commercials, that must be viewed within seven days of the original run date, using dedicated software. The service will later be made available for portable players and Mac computers. Digital content protection is embedded to prevent piracy. An HD version is also in the works, with downloads via P2P. The offer is based on a proprietary NBC video player.

NBC Direct will be offered for free. The videos will contain ads that users cannot erase. Because the player is geared to only NBC network programmes, it will not be able to read other videos, particularly pirated movies.

NBC will thus be competing directly with its new partner, Amazon. Over the long term, the network has plans to develop paid download options for its programmes.

Growth of media market revenue (excluding radio) in the US



Source: IDATE

- **Dailymotion** raises 25 million EUR from **AGF Private Equity**, the UK's **Advent Venture Partners**, the CIC and from two long-standing shareholders, **Partech International** and **Atlas Ventures**.
- German media giant, **Bertelsmann**, which had taken over the P2P music site **Napster** in 2002, has agreed to pay 130 million USD to American record labels to settle copyright violation suits, in addition to the 60 million USD paid directly to **Universal Music** and the 110 million USD that will go to **Warner Music**.
- **Oracle**, the world's number three software publisher, acquires Irish firm, **Netsure Telecom**, specialised in telecom infrastructure analysis and management software.
- **Yahoo!** takes over **BlueLithium**, an American start-up that operates an online advertising network, for 300 million USD in cash, as well as e-mail services provider, **Zimbra**, for 350 million USD.
- Software publisher **Cognos** acquires **Applix**, an American analytical software specialist, for 339 million USD.
- UK electronics firm, **Amstrad**, accepts **BSkyB's** takeover bid of 125 million GBP (185 million EUR).
- Swedish telecom equipment supplier, **Ericsson**, signs a 1.3 billion USD contractor with Indian carrier, **BSNL,** for the development of its GSM and 3G networks.
- **Bouygues** acquires the 6.5% stake in **Bouygues Telecom** owned by **BNP Paribas,** for the sum of 441 million EUR, bringing its share of France's third largest mobile operator to 89.5%.
- The Spanish government adopts a digital terrestrial TV transition plan up to 2010, targeting the creation of more than 40 channels.
- Germany's anti-cartel office authorises the country's top three mobile operators, **T-Mobile**, **O_2** and **Vodafone**, to construct a common mobile TV broadcasting platform, based on the new European DVB-H standard.
- **T-Mobile** (Deutsche Telekom) buys American mobile operator, **SunCom,** for 2.4 billion USD (including 800 million USD in debt takeover).
- European courts uphold the ruling against **Microsoft** for abuse of dominant position handed down by the European Commission in March 2004, along with resulting the fine of 497.2 million EUR.
- **Apple's** iPhone will be distributed via exclusive national contracts by **O_2** (Telefónica group) in the UK, by **T-Mobile** (Deutsche Telekom) in Germany and by **Orange** (France Télécom) in France.
- **Sharp** and **Pioneer** have announced a broad strategic agreement that combines technical cooperation and cross-shareholdings.
- The European Commission gives the green light to the joint acquisition of Austrian telco, **One,** by **France Télécom** and UK-based private equity firm, **Mid Europa Partners**.
- The Swedish regulator orders national carrier **TeliaSonera** to separate its copper pair and optical fibre network from the rest of its business, to help clarify the rules for third party access to these networks. A dedicated division will be created to this end.
- British pension fund, **Truell**, acquires **Telent**, a UK company that controls the **Marconi** telephone company assets that were not acquired by **Ericsson** in 2006, for 398 million GBP (577 million EUR).
- **EchoStar**, the number three satellite pay-TV provider in the US, pays 380 million USD for **Sling Media**, creator of a set-top box that allows roaming access to TV programmes over the web.
- The New Zealand government announces that incumbent carrier, **Telecom New Zealand**, will be separating its operations into three divisions (Retail, Wholesale and Network) by the end of March 2008, as part of a bid to spur competition and develop broadband services.
- American telecom equipment supplier, **3Com,** accepts the 2.2 billion USD takeover bid from private equity firm, **Bain Capital**, and Chinese equipment manufacturer, **Huawei Technologies**.
- Shareholders of US telecom equipment-maker **Avaya** begin buying back company shares held by two private investment funds, **Silver Lake Partners** and **TPG,** valuing the former Lucent Technologies division at 8.2 billion USD.

Podcasting: just a fashion or here to stay?

Podcasting does not constitute a technological innovation in and of itself. It can be defined as a means of distributing multimedia content on the web which makes it possible to implement a principle of subscription to this content, and so to receive it automatically thanks to an RSS feed.

The podcast offering comes from:

- professional broadcasters/publishers: chiefly media groups (and especially radio stations) but also private companies (for internal or external communication purposes);
- amateur or semi-professional internet users.

IDATE estimates that, at the start of 2007, there were around 100,000 active podcasts on offer.

Four main types of content are available: entertainment (lion's share), corporate, training and promotional.

Thanks to the success of the iPod, iTunes is the leading access platform for podcasts, with a roughly 40% share of podcast consumption.

Podcasting is characterised by relatively low production costs and variable distribution costs which can be high, particularly for video. Distributing a video online via unicasting generates bandwidth costs for each download, as a result of which some players are planning on distributing their podcasts over P2P networks and content exchange platforms.

Advertising is the dominant business model, and in some cases the only one, associated with podcasting, but the revenue generated by podcasts is still marginal (around 100 million USD worldwide in 2006).

Though still only fledgling, the future of podcasting has a number of elements in its favour:

- the progress being made with portable multimedia players and smartphones, providing easier synchronisation (particularly with the integration of Wi-Fi);
- improved quality of podcasts due to the growing involvement of major media and the use of video;
- the development of mobile solutions that do not require synchronisation with the PC.

But there are still a number of obstacles to overcome as well:

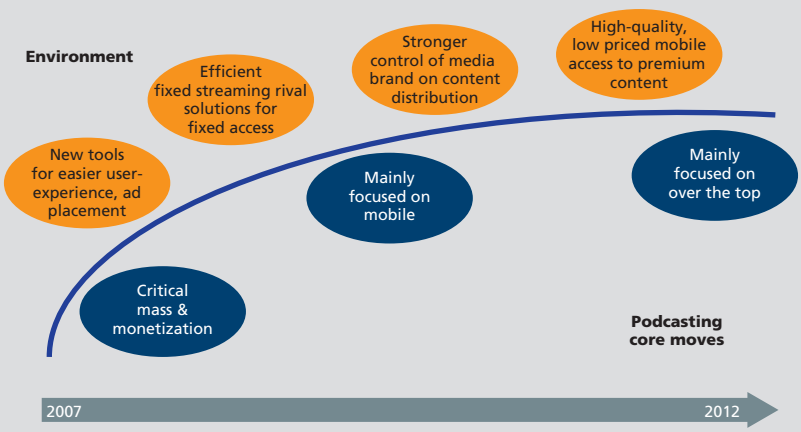
- in some countries, the use of third-party programmes is still problematic due to regulations governing copyright and neighbouring rights;
- audience measurement tools for podcasts are rudimentary;
- advertising formats need to be tailored to podcasting to be less "invasive" and perfected to be managed more dynamically.

IDATE estimates the advertising market for podcasting at roughly 300 million EUR for the whole of Europe (EU-25) by 2012.

Despite its limited potential, podcasting also provides an opportunity to:

- prolong and enhance social network services and so generate audience;
- impose media brands as time-shifting becomes more popular;
- offset the decline in advertising on the major media;
- exploit niche content;
- stimulate new generation mobile phone sales.

The roadmap for podcasting



Source: operators and IDATE estimates

- The world's largest mobile phone manufacturer, **Nokia,** has taken over American firm, **Navteq**, a leader in digital mapping, for 8.1 billion USD – the largest acquisition ever for the handset supplier.
- Dutch company **TomTom**, the globe's top supplier of GPS systems, launches a 2 billion EUR takeover bid for **Tele Atlas**, **Navteq**'s chief competitor. **Garmin** makes a counter-offer that is 15% higher than the one tabled by TomTom.
- A unanimous agreement among the 27 European Union countries re-launches the **Galileo** satellite navigation programme, scheduled for 2013 (a year behind the original timetable).
- US telco **AT&T** signs a five-year contract with **IBM** that could be worth as much as 5 billion USD.
- Austria's incumbent carrier **Telekom Austria** acquires a 70% stake in Cyprian firm **SB Telecom**, the sole owner of Byelorussian mobile operator **MDC**, for roughly 730 million EUR.
- British mobile operator **Vodafone** spends 775 million EUR to take control of Swedish carrier **Tele2**'s fixed telephony and internet business in Spain and Italy.
- After Zingku, **Google** takes over **Jaiku**, the Finnish provider of Jaiku Mobile, a service that allows mobile users to send and receive short text messages.
- **BT** offers 68.5 million EUR to take control of the French IT services and engineering firm, **Net2S**.
- **AT&T** acquires mobile frequencies in the 700 MHz band from **Aloha** for 2.5 billion USD.
- **NBC Universal** (80% General Electric/20% Vivendi) will be taking over **Oxygen Media**, a network of cable channels in the US, for the sum of 925 million USD.
- The Italian government launches auctions for renewable, 15-year WiMAx licences.
- American firm **Electronic Arts** acquires French video game studios **Bioware** and **Pandemic Studios** for a total 825 million USD.
- US conglomerate **Danaher** (professional instrumentation, industrial technologies, tools and components) acquires another US firm, **Tektronix**, a supplier of test and measurement equipment, for around 2.8 billion USD (including debt).
- **AOL, Time Warner's** internet subsidiary, will be laying off 2,000 employees around the world (1,200 in the US), or a fifth of its total staff.
- **Sony Ericsson** sells 50% of its UIQ smartphone subsidiary (acquired from Symbian in 2006) to its American rival, **Motorola**.
- Social network **MySpace** joins forces with **Skype** to incorporate the latter's instant messaging system, offering calling services to all its members, except in China, Japan and Taiwan.
- The European Court of Justice upholds the ruling against **France Télécom,** ordering it to reimburse at least 800 million EUR of the "illegal" state aid collected between 1991 and 2002.
- German firm, **SAP**, the world's leading provider of software suites, launches a friendly takeover bid of 4.8 billion EUR on French company, **Business Objects**.
- After a three-year battle with the European Commission, **Microsoft** agrees to supply the competition with the information necessary to ensure interoperability between PCs and servers operating on Windows, and servers running on another operating system – according to terms that have been scaled back over the course of the dispute.
- American telecom equipment supplier **Cisco** takes over **Navini Networks**, a company specialised in WiMAx wireless broadband internet infrastructure, for around 330 million USD.
- US software giant **Microsoft** acquires a minority stake, of around 1.6%, in the **Facebook** social network for 240 million USD.
- **Safran** sells the broadband business it inherited from **Sagem** to private equity firm, **Gores Group**, based on a corporate value of 383 million EUR.
- China's e-commerce leader, **Alibaba.com**, of which **Yahoo!** owns 39%, raises 1.5 billion USD following its IPO on the Hong Kong exchange. It ranks number five among the globe's top internet companies, and number one in Asia, outside of Japan.
- **eBay** subsidiary **Skype** and mobile operator "**3**" introduce a mobile phone that allows Skype users to call one another for free.
- Equipment manufacturer **Alcatel Lucent** announces a further 4,000 lay-offs worldwide between now and 2009 (generating savings of around 400 million EUR), on the heels of the 12,500 lay-offs announced in early 2007.

Radio spectrum: issues at stake

As it does every four years, the ITU held the World Radiocommunication Conference (WRC) in 2007, which seeks to achieve global consensus on the rules that will govern the spectrum landscape for the coming years.

The international regulatory framework is in fact the result of a long process at the international level within the ITU, at regional levels (CEPT, EC, for Europe) and at the national level – a process that involves national administrations and regulatory bodies. All these entities are now faced with conflicting demand from users due to:

- the increase of mobile network traffic, particularly in densely populated areas, requiring more spectrum and larger bandwidth than is currently available;
- the multiplication of wireless technologies which need their own frequencies;
- the entry of new telecom carriers and broadcast companies competing with traditional players for spectrum assets.

Generally speaking, the dual trends of higher prices and of working to achieve spectrum harmonisation remain unchanged.

Several topics are of particular importance for current discussions:

- digital dividend: terrestrial television broadcasting has entered a process of digitisation which will ultimately lead to the switch-off of analogue transmission and thus the release of spectrum. The procedures used for the analogue switch-off, the amount of newly available spectrum and scenarios for the reallocation of spectrum all need to be discussed;
- spectrum for WiMAX: in order to facilitate the adoption of WiMAX technology and ensure the global harmonisation of WiMAX-friendly spectrum worldwide, its backers are targeting chiefly the already licensed 2.5-2.7GHZ and 3.5GHz frequency bands. Taking a pragmatic approach, they are also targeting other suitable bands that are progressively being made available, such as the 700 MHz band in the US;
- 4G radio spectrum: IMT-Advanced bands identification is linked to the difficulties posed by the convergence of telecommunication services (fixed, mobile and broadcast) as IMT-Advanced technologies will make a claim for the provision of high bitrate services that go well beyond voice services. IMT-Advanced candidate bands overlap to a significant degree with broadcast and satellite frequency bands. Competition is already taking place between IMT-Advanced backers and broadcast and satellite players in particular;
- spectrum for mobile TV services: there are several competing standards, both for terrestrial and satellite mobile TV, with different implications in terms of spectrum needs. Though the various mobile TV solutions were originally designed based on dedicated frequencies, they can, to a certain extent, be implemented in various bands.

Approaches towards the digital dividend in selected countries

	France	Japan	USA	UK
Spectrum dividend	72 MHz	130 MHz	108 MHz	112 MHz
Pre-allocation of spectrum dividend	3 SD Digital channels Simulcast of all local analogue TV channels	Mobile telecommunications Digital radio	Public Safety WiMAX	Community PSME Local TV Innovative services
Digital dividend spectrum allocation mechanism	To be determined	To be determined	Auction	Auction
Digital dividend policy approach	? (TV-oriented)	Mobile-oriented	Mobile-oriented	Neutral

Source: IDATE

- **Google** announces the federation of a dozen social networks, including **MySpace**, **Orkut**, **Viadeo** along with **Salesforce.com** and **Oracle**, within an open technological platform called OpenSocial.
- **Google** unveils Android, a free mobile platform developed in partnership with 33 mobile phone manufacturers, operators and developers (with the release of equipped handsets planned for the second half of 2008).
- American PC maker, **Dell** takes over **EqualLogic**, a supplier of storage solutions for businesses, for 1.4 billion USD, making it the biggest ever acquisition for the company.
- **AOL** takes over the site **Quigo**, a specialist in targeted online advertising, with a staff of around 100, for 340 million USD.
- **Siemens** announces plans to earmark 10 billion EUR for buying back its shares between now and 2010 (11.5% of the company under current share prices).
- French media regulator, CSA (Conseil Supérieur de Audiovisuel) launches a call for candidates for 13 mobile TV stations. The service itself will launch in late 2008, following trials during the Olympic Games in Beijing.
- French broadcaster **TDF** acquires its German counterpart, **Media&Broadcast** (1,200 employees, turnover of 526 million EUR in 2006) from **Deutsche Telekom** for 850 million EUR.
- **IBM** takes over Canadian firm, **Cognos**, the last remaining major independent performance management software publisher, for 5 billion USD.
- American IT services company **EDS** acquires a 93% stake in **Saber Holdings**, a firm specialised in the supply of software and IT solutions for state and local governments in the US, for 420 million USD.
- The European Commission adopts the Telecom Packet submitted by Viviane Reding, which proposes, among other things, the creation of a pan-European regulator, the functional separation of networks, better spectrum management, a decrease in the number of regulated markets from 18 to 7 (which means roughly 50% of operators' current turnover will exempt from current regulation) and increased consumer protection, allowing users to transfer their fixed or mobile number from one operator to another in less than a day.
- **Sony** and Dutch semi-conductor supplier, **NXP** (created by **Philips**) form a joint venture called **Moversa**, to design a platform for mobile phones based on the NFC standard (Near Field Communication).
- As part of its corporate restructuring, video game pioneer **Atari** sells off its gaming division.
- **Vivendi** announces the launch of a new web portal called Zaoza, which can be access via PC or mobile phone, and offering a legal, secured and fee-based solution for content providers.
- The GSMA (GSM Association) adopts LTE (Long-Term Evolution) technology as the standard for wireless communications, and the successor of HSPA (High-Speed Packet Access).
- **France Télécom** acquires a 51% stake in incumbent carrier **Telkom Kenya** for 390 million USD, in a deal that is expected to be finalised by the end of 2007.
- The emirate of Abu Dhabi acquires an 8.1% share of **AMD**, the second largest microprocessor manufacturer in the US, for 608 million USD.
- The ITU (International Telecommunications Union) has agreed to free up more spectrum to meet the growing demand for mobile telephony and broadband access, and so help reduce the North-South digital divide.
- British private equity firm, **Candover**, sells Norwegian cableco **GET** for around 745 million EUR to **Quadrangle Capital Partners** and **Goldman Sachs**.
- Nigeria's multi-sector regulatory authority, ARM (Autorité de Régulation Multisectorielle) awards **France Télécom** a global (fixed/mobile/internet) GSM licence for the sum of 30 billion CFA (48 million EUR).
- **Inmarsat**, the world's leading provider of satellite mobile telecommunications, has chosen **Astrium** (EADS group) to build the Alphasat I-XL satellite, which will help optimise its global broadband communications network. The Alphasat I-XL will be one of the world's largest telecommunications satellites, and InMarsat will be investing roughly 260 million EUR in the programme. The satellite is due to launch in 2012, and has a projected 15-year lifespan.
- **Alcatel Lucent** has signed a series of framework agreements worth some 750 million EUR with operators **China Mobile** and **China Unicom**.
- Saudi Arabian carrier, **Saudi Telecom** is awarded the third mobile telephony licence in Kuwait, for 248.7 million KWD (614 million EUR).
- French national regulator **ARCEP** unveils an action plan for stepping up fibre in access networks, targeting chiefly the bottlenecks of access to civil engineering and sharing of the terminal portion of the network (between the optical splitter and subscribers' residence).
- The European Parliament has formally approved the Council's common position on the new directive concerning Television without Borders, which are to be transposed into EU Member States' legislation within the next two years.
- Kuwaiti firm **Zain** (formerly **MTC** - Mobile Telecommunications Company) has taken over Iraqi operator **Iraqna**, a subsidiary of Egypt's **Orascom Telecom**, for 1.2 billion USD.

About the real impact of structural separation

The Telecoms Package adopted by the European Commission in November 2007, as the outcome of its review of the EU's regulatory framework, includes a remedy whereby the national regulator can impose a separation on the incumbent carrier of its network operations and its service marketing business, in cases where real competition issues exist. This measure, which is already recommended in a more drastic form in the energy sector (separation of network ownership), immediately gave rise to a great deal of opposition, not only from operators themselves but also from several governments (Germany and Spain) and regulatory authorities (France).

There is a large body of theoretical research to support the Commission's positions, highlighting the drawbacks and inefficiencies of vertical integration, as well as the advantages arising from vertical separation solutions. This abundance of theoretical research contrasts with the small number of recent empirical studies, although there are several case studies available on network industries as a whole in the main OECD countries.

The first cases date back to the late 1980s with a first ownership separation of the Swedish railways industry in 1988, while the United Kingdom went on to pioneer vertical separation across most of its network industries (railways, gas and electricity) in the first half of the 1990s. Today, vertical separation has been implemented in one form or another in most OECD countries (see table), mainly and historically in the railway and energy sectors and more recently in the telecommunications industry.

A detailed analysis, produced by IDATE through an empirical impact assessment of separation with respect to nine issues (competition, end-user demand, retail pricing, quality of service, economic performance, employment and productivity, investment, research and development, regulation), revealed highly contrasted effects depending on the criteria. Generally speaking, effects were particularly negative for industry-level items such as regulation, investment level and quality of service. Despite undeniable progress in competition, the analysis also showed no significant impact (positive or negative) on end-user pricing and demand. The most positively impacted variables have concerned the separated company with substantially improved economic performance (measured through operating margins) and productivity gains (through headcount reduction).

This mitigated assessment has led to a repositioning of the vertical separation issue in most network industries. Numerous observers in each of those industries have begun to question the validity of structural separation as a regulation method and have emphasised its limits (coordination loss resulting in lower quality of service, increased regulation complexity, insufficient infrastructure investment etc.). This at least supports the view of positioning vertical separation as a "last-resort" option when all other regulatory tools have proved useless in addressing market and competition failures.

Vertical separation cases and projects in the main OECD countries

	Telecoms	Gas and electricity	Railroad
USA		Several states (California…)	Amtrack
South Korea	KT	KEPCO	
Australia	Telstra	Several states (Victoria, New South Wales…)	ARTC
France	*France Telecom*	RTE	RFF
United Kingdom	BT/Openreach	British Gas, NGC	British Rail
Italy	*Telecom Italia*	Enel/TSO	FS Infrastructure
Germany			Deutsche Bahn

Source: IDATE

- French conglomerate **Vivendi** merges its video game business with that of American publisher, **Activision,** creating a new entity, **Activision Blizzard**, which is valued at 20 billion USD and now the world's largest video game publisher, ahead of US firm, Electronic Arts.
- Japanese carrier, **NTT DoCoMo** and South Korea's **KT Freetel** have announced that they will each be investing 100 million USD in Malaysian operator **U Mobile**, for the launch of third generation (3G) services in 2008.
- The European Council of telecommunications ministers implements the European Commission's choice of DVB-H for mobile TV, but as "a non-mandatory standard", in a bid to uphold technological neutrality and encourage open competition.
- The T-DMB digital radio technology gets the green light from the European Commission, opening the way to future commercial rollouts in EU Member States.
- Italian ISP **FastWeb** signs an MVNO agreement with **3** Italia to be able to market its own mobile services.
- Indian operator, **VSNL**, which is owned by the **Tata** group, has announced that it will be joining forces with **Seacom** and **Telecom Egypt** to build the "Eurasia Cable System" which will connect Mumbai to Paris, London and Madrid via Egypt.
- The world's largest publisher of TV guides, American firm **Gemstar-TV Guide**, is taken over by **Macrovision**, a company specialised in security software for the film and television industry, for 2.8 billion USD in cash.
- A consortium led by **Vodafone** is awarded the second mobile telephony licence in Qatar, putting an end to the monopoly of public company, **Q-Tel**.
- **Microsoft** acquires **Multimap**, one of the UK's leading online mapping services.
- **NTT DoCoMo** has signed a capacity leasing agreement on its 3G network with **IIJ**, a provider of broadband solutions for businesses and now an MVNO.
- South Korea's **SK Telecom** acquires a 38.9% stake in **Hanaro Telecom**, the country's second largest national broadband operator, for 1,087 billion WON (802.65 million EUR) and, with a total 43.6% share of the company's equity, becomes the majority shareholder.
- **T-Mobile** UK and **3** UK elect to share a portion of their 3G infrastructure, allowing them to save 2 billion GBP (1.3 billion EUR) over 10 years.
- Telecom equipment manufacturer, **Alcatel Lucent,** sells Dutch holding company, **Draka,** its 49.9% stake in their fibre optic joint venture, **Draka Comteq**, for 209 million EUR.
- After two years of speculation, French mobile operator **SFR** announces the takeover of **Neuf Cegetel**, first by acquiring the 29.5% owned by the Louis Dreyfus group, before launching a public buyout offer on the remaining shares in circulation.
- Private equity firm **Carlyle** acquires half of the 70% stake in French cable operator **Numéricable** owned by **Cinven**, for more than 1 billion EUR, with Altice controlling the remaining 30%.
- Spanish media group, **Prisa**, which now owns just over 50% of its TV subsidiary, **Sogecable**, announces the launch of public takeover bid, based on a corporate value of 3.87 billion EUR.
- Russian telecom operator, **Vimpelcom,** takes control of its rival, **Golden Telecom,** for 4.3 billion USD.
- A consortium led by **France Télécom**, in association with the firm, Dubai Alcazar Capital Limited, acquires a 51% stake in Kenyan national carrier, **Telkom Kenya**, for 390 million USD.
- Japanese operators, **Willcom**, which is owned by American private equity firm **Carlyle**, and **KDDI**, in association with five partners, including **Intel** and **Kyocera**, have been chosen by the Japanese government as the recipients of new WiMAx licences.
- **Nokia Siemens Networks** announces that it has run the world's first on-site, multi-user trial of LTE (Long Term Evolution, one evolution to 4G) in an urban environment in Berlin, Germany.
- American TV industry giant, **Viacom,** and **Microsoft** sign a multi-faceted, five-year partnership agreement in the area of advertising, for distributing content and games, in a deal worth some 500 million USD.
- More than 260 candidates, including internet giant, **Google**, telecom giant, **AT&T**, telecom equipment heavyweight, **Qualcomm**, Paul Allen's **Vulcan** fund and petrol company, Chevron, are poised to acquire the frequencies created by the digital dividend that the US government will begin selling on 24 January 2008.
- **NTT DoCoMo** will be hosting US search engine Google on its mobile portal, and will work with the company to develop a new line of services and handsets (equipped with the Android OS).
- **Telefónica**, **Portugal Telecom** and **TIM** have been awarded 3G licences in Brazil, as has America Movil, the group run by Mexican billionaire, Carlos Slim. The auctioning off of these licences brought in close to 3 billion USD.
- **AOL** pulls the plug on its web browser, **Netscape** (acquired in 1999 for 9.8 billion USD!), having been unable to win back the ground it lost to Microsoft's Explorer.
- Dutch CE giant, **Philips** has sold 800 million shares of **TSMC** (Taiwan Semiconductor Manufacturing Company) for around 1.5 billion USD and is due to sell off its remaining shares by the end of 2010.
- Eight cable operators that are present in Walloon, including **Brutele**, have been taken over by Belgian public company, **Tecteo Group,** for 470 million EUR.

Fixed-mobile convergence: the winning model?

In France, fixed carrier neuf cegetel's announced plans to take over mobile operator SFR, along with SK Telecom's increased stake in Hanaro Telecom in South Korea, are both examples of telcos' growing interest in fixed-mobile convergence, despite rather mitigated results for the industry's latest developments in this area.

The first integrated offers (based on a handset or a service) to be rolled out have, in fact, been rather unsuccessful (KT, BT, Deutsche Telekom) or only moderately successful (Orange's Unik service). Fewer than 500,000 handsets (distributed by operators) were in operation throughout the world at the beginning of 2007.

Unaccustomed to dealing with a household and an individual simultaneously, it follows that operators have not yet hit on the right formula for offering integrated fixed-mobile convergence services, not counting the success being enjoyed by basic bundling formula and substitution services. However, over the coming years, fixed-mobile convergence will inevitably constitute a major growth vehicle for the various players concerned; it is also part of the overall shift towards all-IP.

But the value-destruction potential is high, in view of the fact that, for the very first time, cablecos, DSL fixed telcos, mobile operators and integrated operators are fighting on the same battlefield. Moreover, fixed-mobile convergence will grow at a slower rate than hoped for by certain players. Serious regulatory constraints still exist and the technology required to be able to offer truly integrated services has not yet been perfected and/or remain too costly. Development will thus be bound up closely with national market structure.

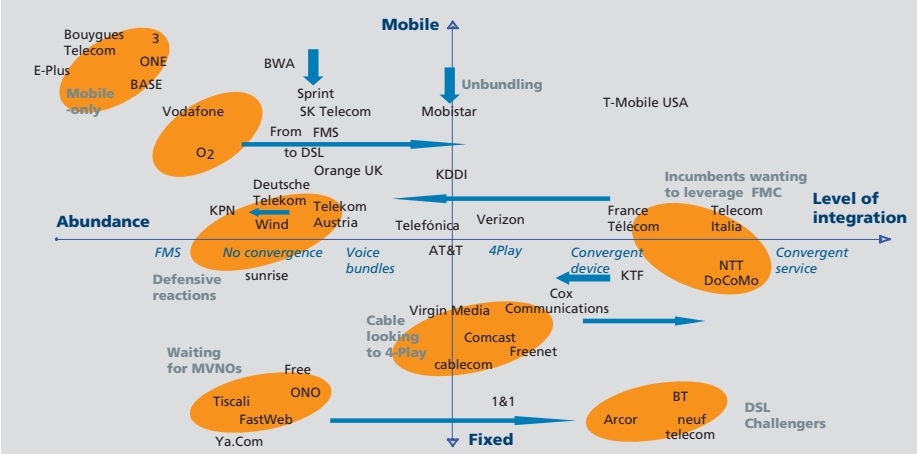
Development will be particularly slow in countries where, taken separately, the fixed and mobile markets represent little competition, as in Italy. The integrated operator may be expected to adopt only a moderately offensive attitude. Moreover, the spread of FMC will be slowed down because of the extensive prepaid base.

In markets where there is fierce competition in the mobile sector (but little in the fixed sector) with the presence of mature MVNOs, as has been the case in Germany in recent years despite signs of change over the past year, the most likely scenario is the transitory presence of mobile-based substitution services preceding gradual migration toward bundles.

In markets where there is competition in both the fixed and mobile sectors, such as the United Kingdom, there is little room to manoeuvre in the area of discounts and especially in taking account of the additional investments called for by integrated services (heavy expenditure of networks and handsets). Operators will therefore turn mainly towards basic bundles that are easy to deploy rapidly, in addition to Free Broadband initiatives (not necessarily within the FMC framework).

In markets where the mobile industry is highly concentrated but where the fixed sector is very competitive, e.g. France, be it thanks to unbundling, to DSL or to facilities-based competition (cable), the FMC market can be expected to revolve mainly around integrated offers such as convergent handsets so as to provide fixed operators with a new vehicle for growth by capitalising on their boxes.

Operators' priority strategy vis-à-vis fixed-mobile convergence



Source: IDATE

Country profiles

France

Markets

(billion €)	2003	2004	2005	2006	2007
Telecom services	34.7	35.8	37.4	37.9	38.6
Fixed telephony	12.7	12.0	11.8	11.5	10.8
Internet & data	6.0	6.2	6.6	7.2	7.9
Mobile services	15.9	17.6	19.0	19.3	20.0
Telecom equipment	-	-	6.2	6.4	6.1
Terminals	-	-	2.1	2.1	2.2
Enterprise equipment	-	-	1.5	1.6	1.7
Network equipment	-	-	2.6	2.6	2.2
TV services	8.5	9.0	9.2	9.8	10.3
Subscription	4.0	4.1	4.2	4.6	5.0
Public funding	1.5	1.6	1.8	1.8	1.9
Advertising	3.0	3.2	3.2	3.4	3.5

Subscribers

(million)	2003	2004	2005	2006	2007
Fixed access lines	33.9	33.6	33.1	31.6	29.5
as a % of inhabitants	54.7%	54.0%	53.0%	50.3%	46.9%
Cellular customers	41.7	44.5	48.0	51.5	55.2
as a % of inhabitants	67.2%	71.5%	76.8%	82.1%	87.7%
Broadband subscribers	3.7	6.8	9.4	12.6	15.1
as a % of inhabitants	5.9%	10.8%	15.1%	20.1%	24.0%
Multichannel TV homes	10.1	10.3	11.0	12.0	13.0
as a % of TV homes	42.9%	43.8%	45.3%	49.1%	52.7%
Digital TV homes	5.0	5.6	7.3	12.9	16.3
as a % of TV homes	21.1%	23.7%	30.1%	52.8%	66.0%

Macro-economic data

	2003	2004	2005	2006	2007
Population (million inhabitants)	62.0	62.3	62.5	62.8	63.0
GDP (billion €)	1 594.8	1 660.2	1 717.9	1 792.0	-

Germany

Markets

(billion €)	2003	2004	2005	2006	2007
Telecom services	49.4	51.5	50.8	50.5	49.2
Fixed telephony	17.8	18.2	16.8	16.1	15.0
Internet & data	7.8	7.9	8.1	8.8	9.2
Mobile services	23.7	25.4	25.9	25.6	24.9
Telecom equipment	-	-	7.6	7.8	7.7
Terminals	-	-	2.8	2.9	3.0
Enterprise equipment	-	-	2.1	2.3	2.4
Network equipment	-	-	2.7	2.6	2.3
TV services	12.2	12.3	12.9	13.2	13.4
Subscription	4.2	4.4	4.5	4.4	4.5
Public funding	4.1	4.1	4.6	4.7	4.8
Advertising	3.8	3.9	3.9	4.1	4.2

Subscribers

(million)	2003	2004	2005	2006	2007
Fixed access lines	54.2	54.6	54.7	54.4	53.5
as a % of inhabitants	65.8%	66.2%	66.4%	66.0%	64.9%
Cellular customers	64.8	71.3	79.2	85.4	92.5
as a % of inhabitants	78.6%	86.5%	96.1%	103.6%	112.3%
Broadband subscribers	4.6	6.9	10.7	14.9	19.8
as a % of inhabitants	5.6%	8.3%	13.0%	18.1%	24.0%
Multichannel TV homes	25.0	25.3	25.7	25.6	25.8
as a % of TV homes	66.7%	67.4%	68.3%	67.9%	68.5%
Digital TV homes	4.7	5.8	7.6	9.0	11.2
as a % of TV homes	12.7%	15.4%	20.1%	23.8%	29.6%

Macro-economic data

	2003	2004	2005	2006	2007
Population (million inhabitants)	82.4	82.4	82.4	82.4	82.4
GDP (billion €)	2161.5	2207.2	2241.0	2309.1	-

Italy

Markets

(billion €)	2003	2004	2005	2006	2007
Telecom services	27.4	29.3	31.1	31.5	31.7
Fixed telephony	9.7	9.8	9.9	9.5	9.2
Internet & data	3.0	3.4	3.8	3.9	4.1
Mobile services	14.7	16.1	17.4	18.0	18.4
Telecom equipment	-	-	6.4	6.5	6.2
Terminals	-	-	2.6	2.6	2.7
Enterprise equipment	-	-	0.8	0.8	0.9
Network equipment	-	-	3.1	3.1	2.6
TV services	6.7	7.6	8.2	8.9	9.5
Subscription	1.2	1.6	2.0	2.6	2.9
Public funding	1.5	1.6	1.6	1.6	1.6
Advertising	4.0	4.4	4.7	4.7	5.0

Subscribers

(million)	2003	2004	2005	2006	2007
Fixed access lines	29.9	29.1	28.0	26.0	25.9
as a % of inhabitants	51.6%	50.1%	48.2%	44.7%	44.5%
Cellular customers	56.6	62.7	71.5	80.0	84.9
as a % of inhabitants	97.7%	107.9%	123.1%	137.6%	146.0%
Broadband subscribers	2.5	5.1	7.1	8.8	10.2
as a % of inhabitants	4.3%	8.7%	12.2%	15.1%	17.6%
Multichannel TV homes	2.6	3.3	3.8	4.9	5.6
as a % of TV homes	11.8%	14.7%	16.9%	21.5%	24.5%
Digital TV homes	3.3	5.4	8.3	10.4	12.4
as a % of TV homes	14.9%	24.1%	36.5%	45.6%	54.3%

Macro-economic data

	2003	2004	2005	2006	2007
Population (million inhabitants)	58.0	58.1	58.1	58.1	58.1
GDP (billion €)	1 335.4	1 390.5	1 423.1	1 475.4	-

Spain

Markets

(billion €)	2003	2004	2005	2006	2007
Telecom services	19.2	21.2	23.4	24.7	26.3
Fixed telephony	6.4	6.5	6.6	6.2	6.1
Internet & data	2.6	2.9	3.4	3.9	4.4
Mobile services	10.2	11.7	13.4	14.6	15.8
Telecom equipment	-	-	4.3	4.5	4.2
Terminals	-	-	1.9	2.0	2.0
Enterprise equipment	-	-	0.5	0.5	0.5
Network equipment	-	-	1.9	2.0	1.6
TV services	4.6	4.9	4.9	5.7	6.3
Subscription	1.5	1.3	1.4	1.5	1.7
Public funding	0.7	0.8	0.7	1.1	1.2
Advertising	2.4	2.8	2.9	3.1	3.4

Subscribers

(million)	2003	2004	2005	2006	2007
Fixed access lines	20.8	20.9	22.6	21.9	21.9
as a % of inhabitants	50.0%	49.4%	52.4%	50.0%	49.1%
Cellular customers	37.5	39.2	43.1	47.0	48.9
as a % of inhabitants	90.0%	92.6%	100.2%	107.4%	109.9%
Broadband subscribers	2.2	3.4	5.1	6.8	8.1
as a % of inhabitants	5.4%	8.1%	11.8%	15.5%	18.3%
Multichannel TV homes	3.5	3.2	3.4	3.8	4.3
as a % of TV homes	25.5%	23.1%	23.5%	25.7%	29.2%
Digital TV homes	2.2	2.4	4.2	6.4	8.3
as a % of TV homes	15.9%	17.1%	29.4%	43.6%	55.7%

Macro-economic data

	2003	2004	2005	2006	2007
Population (million inhabitants)	41.7	42.3	43.0	43.8	44.5
GDP (billion €)	782.5	840.1	905.5	976.2	-

United Kingdom

Markets

(billion €)	2003	2004	2005	2006	2007
Telecom services	41.9	44.1	45.4	46.3	46.9
Fixed telephony	16.4	15.7	14.8	14.0	13.4
Internet & data	6.5	7.3	7.5	8.0	8.4
Mobile services	19.0	21.2	23.1	24.3	25.0
Telecom equipment	-	-	8.9	9.3	8.9
Terminals	-	-	3.0	3.2	3.2
Enterprise equipment	-	-	1.8	2.0	2.1
Network equipment	-	-	4.1	4.1	3.6
TV services	14.0	15.2	15.8	15.7	16.0
Subscription	4.9	5.5	6.0	6.2	6.5
Public funding	4.2	4.6	4.6	4.7	4.8
Advertising	4.9	5.1	5.2	4.8	4.7

Subscribers

(million)	2003	2004	2005	2006	2007
Fixed access lines	34.6	34.2	34.1	33.6	32.8
as a % of inhabitants	57.6%	56.8%	56.4%	55.4%	54.0%
Cellular customers	54.5	62.1	68.8	71.9	72.8
as a % of inhabitants	90.7%	103.1%	113.8%	118.7%	119.8%
Broadband subscribers	3.2	6.2	9.9	13.3	16.6
as a % of inhabitants	5.3%	10.4%	16.4%	22.0%	27.4%
Multichannel TV homes	10.2	10.6	11.1	11.5	12.1
as a % of TV homes	39.8%	41.4%	43.1%	44.7%	46.8%
Digital TV homes	12.4	14.9	17.6	19.7	22.2
as a % of TV homes	48.2%	58.1%	68.3%	76.4%	85.8%

Macro-economic data

	2003	2004	2005	2006	2007
Population (million inhabitants)	60.1	60.3	60.4	60.6	60.8
GDP (billion €)	1 639.9	1 736.7	1 809.6	1 905.8	-

United States

Markets

(billlion €)	2003	2004	2005	2006	2007
Telecom services	210.4	216.9	225.4	232.0	243.4
Fixed telephony	99.2	91.6	87.0	81.7	76.8
Internet & data	41.3	43.9	47.9	50.2	53.6
Mobile services	69.8	81.4	90.5	100.0	113.0
Telecom equipment	-	-	46.0	47.4	50.5
Terminals	-	-	19.6	20.8	21.1
Enterprise equipment	-	-	8.7	9.4	9.9
Network equipment	-	-	17.6	17.2	19.5
TV services	84.7	91.0	95.6	102.8	104.8
Subscription	37.7	42.0	46.0	49.3	51.5
Public funding	0.4	0.4	0.4	0.5	0.5
Advertising	46.6	48.6	49.2	53.0	52.8

Subscribers

(million)	2003	2004	2005	2006	2007
Fixed access lines	182.9	177.7	175.2	170.0	165.6
as a % of inhabitants	63.0%	60.6%	59.2%	57.0%	55.0%
Cellular customers	158.7	182.1	207.9	233.0	250.5
as a % of inhabitants	54.7%	62.2%	70.3%	78.1%	83.2%
Broadband subscribers	25.9	35.6	47.1	56.8	65.8
as a % of inhabitants	8.9%	12.2%	15.9%	19.0%	21.9%
Multichannel TV homes	88.1	90.3	93.0	95.1	98.6
as a % of TV homes	81.5%	82.4%	84.4%	85.2%	87.9%
Digital TV homes	44.5	50.8	60.2	68.4	78.8
as a % of TV homes	41.1%	46.4%	54.6%	61.3%	70.3%

Macro-economic data

	2003	2004	2005	2006	2007
Population (million inhabitants)	290.3	293.0	295.7	298.4	301.1
GDP (billion €)	8735.8	9313.6	9909.8	10516.2	-

China

Markets

(billion €)	2003	2004	2005	2006	2007
Telecom services	48.7	53.7	59.1	65.1	70.5
Fixed telephony	19.5	20.6	21.0	20.7	19.1
Internet & data	3.5	4.1	5.1	6.3	7.8
Mobile services	25.7	28.9	33.0	38.1	43.6
Telecom equipment	-	-	21.4	22.7	23.6
Terminals	-	-	11.5	12.2	12.5
Enterprise equipment	-	-	1.1	1.2	1.2
Network equipment	-	-	8.9	9.4	9.9
TV services	5.1	5.7	6.6	7.2	7.9
Subscription	2.5	2.7	3.1	3.4	3.8
Public funding	-	-	-	-	-
Advertising	2.6	3.0	3.5	3.8	4.1

Subscribers

(million)	2003	2004	2005	2006	2007
Fixed access lines	262.7	311.8	350.0	368.0	374.0
as a % of inhabitants	20.3%	24.0%	26.8%	28.0%	28.3%
Cellular customers	268.6	317.1	374.4	443.6	524.8
as a % of inhabitants	20.8%	24.4%	28.7%	33.8%	39.7%
Broadband subscribers	11.8	25.9	39.1	51.9	64.9
as a % of inhabitants	0.9%	2.0%	3.0%	3.9%	4.9%
Multichannel TV homes	110.0	120.0	125.0	128.2	131.7
as a % of TV homes	33.3%	35.5%	36.7%	36.1%	35.7%
Digital TV homes	0.3	0.7	1.4	7.2	10.7
as a % of TV homes	0.1%	0.2%	0.4%	2.0%	2.9%

Macro-economic data

	2003	2004	2005	2006	2007
Population (million inhabitants)	1 291.5	1 298.8	1 306.3	1 314.0	1 321.9
GDP (billion €)	1 496.4	1 742.9	2 017.4	2 255.9	-

India

Markets

(billion €)	2003	2004	2005	2006	2007
Telecom services	7.3	9.2	10.3	12.4	16.3
Fixed telephony	4.9	5.7	5.5	5.1	4.6
Internet & data	0.7	0.8	1.2	1.9	3.1
Mobile services	1.7	2.7	3.5	5.4	8.6
Telecom equipment	-	-	7.2	9.9	12.1
Terminals	-	-	3.1	4.9	5.9
Enterprise equipment	-	-	1.0	1.1	1.1
Network equipment	-	-	3.1	3.9	5.1
TV services	2.4	2.9	3.7	4.2	4.6
Subscription	1.9	2.3	2.6	2.8	3.0
Public funding	0.0	0.0	0.0	0.0	0.0
Advertising	0.5	0.6	1.1	1.4	1.6

Subscribers

(million)	2003	2004	2005	2006	2007
Fixed access lines	42.1	44.9	48.8	40.3*	39.0
as a % of inhabitants	4.0%	4.2%	4.5%	4.7%	5.0%
Cellular customers	28.4	48.0	75.9	149.6	225.5
as a % of inhabitants	2.7%	4.2%	4.5%	4.7%	5.0%
Broadband subscribers	0.0	0.2	0.9	2.5	7.0
as a % of inhabitants	0.0%	4.2%	4.5%	4.7%	5.0%
Multichannel TV homes	45.0	48.7	62.1	65.4	69.9
as a % of TV homes	54.3%	57.3%	71.3%	71.6%	72.8%
Digital TV homes	0.0	0.2	0.9	3.4	5.8
as a % of TV homes	0.0%	0.3%	1.0%	3.7%	6.0%

** new accounting perimeter*

Macro-economic data

	2003	2004	2005	2006	2007
Population (million inhabitants)	1 049.7	1 065.1	1 080.3	1 095.4	1 110.6
GDP (billion €)	486.5	550.0	627.5	725.8	-

Japan

Markets

(billion €)	2003	2004	2005	2006	2007
Telecom services	92.3	91.8	92.4	94.5	95.0
Fixed telephony	28.5	26.9	26.2	25.3	24.5
Internet & data	14.3	15.9	17.5	19.6	20.5
Mobile services	49.5	49.0	48.7	49.6	50.0
Telecom equipment	-	-	24.9	25.6	24.9
Terminals	-	-	12.5	12.2	11.7
Enterprise equipment	-	-	2.5	2.7	2.9
Network equipment	-	-	9.8	10.6	10.3
TV services	25.6	26.6	27.8	27.2	29.2
Subscription	6.5	7.4	8.3	8.4	8.9
Public funding	4.9	4.9	4.8	4.9	5.0
Advertising	14.2	14.3	14.7	13.8	15.3

Subscribers

(million)	2003	2004	2005	2006	2007
Fixed access lines	70.7	69.6	67.4	66.3	66.1
as a % of inhabitants	55.5%	54.7%	52.9%	52.0%	51.8%
Cellular customers	79.7	85.4	90.2	94.9	100.4
as a % of inhabitants	62.7%	67.1%	70.8%	74.5%	78.8%
Broadband subscribers	13.6	18.6	22.5	25.8	28.9
as a % of inhabitants	10.7%	14.6%	17.6%	20.2%	22.7%
Multichannel TV homes	19.7	21.2	21.6	21.9	22.0
as a % of TV homes	41.2%	44.2%	44.9%	45.5%	45.7%
Digital TV homes	12.2	18.5	24.8	32.1	33.0
as a % of TV homes	25.4%	38.5%	51.6%	66.7%	68.5%

Macro-economic data

	2003	2004	2005	2006	2007
Population (million inhabitants)	127.2	127.3	127.4	127.5	127.5
GDP (billion €)	3360.0	3415.1	3435.7	3480.0	-

South Korea

Markets

(billion €)	2003	2004	2005	2006	2007
Telecom services	20.7	21.6	22.2	22.6	23.3
Fixed telephony	4.4	4.3	4.2	4.0	3.8
Internet & data	5.3	5.4	5.3	5.5	5.7
Mobile services	11.0	11.9	12.7	13.1	13.8
Telecom equipment	-	-	6.5	6.8	7.3
Terminals	-	-	3.6	3.5	3.4
Enterprise equipment	-	-	1.0	1.0	1.1
Network equipment	-	-	1.9	2.2	2.8
TV services	-	-	-	-	-
Subscription	-	-	-	-	-
Public funding	-	-	-	-	-
Advertising	-	-	-	-	-

Subscribers

(million)	2003	2004	2005	2006	2007
Fixed access lines	23.2	22.7	22.8	22.5	22.5
as a % of inhabitants	48.3%	47.2%	47.0%	46.4%	46.0%
Cellular customers	33.6	36.6	38.3	40.2	43.3
as a % of inhabitants	70.0%	75.9%	79.2%	82.6%	88.6%
Broadband subscribers	11.2	11.9	12.2	14.0	15.0
as a % of inhabitants	23.3%	24.7%	25.2%	28.9%	30.7%
Multichannel TV homes	-	-	-	-	-
as a % of TV homes	-	-	-	-	-
Digital TV homes	-	-	-	-	-
as a % of TV homes	-	-	-	-	-

Macro-economic data

	2003	2004	2005	2006	2007
Population (million inhabitants)	48.2	48.4	48.6	48.8	49.0
GDP (billion €)	604.9	650.6	676.6	707.8	-

Glossary

2G	2nd (cellular) Generation
3G	3rd (cellular) Generation
4G	4th (cellular) Generation
ASP	Application Service Provider
ADSL	Asymmetrical Digital Subscriber Line
ATM	Asynchronous Transfer Mode
ARPU	Average Revenue Per User
BWA	Broadband Wireless Access
BI	Business Intelligence
BPM	Business Process Management
BPO	Business Process Outsourcing
BtoB (B2B)	Business to Business
B2B2C	Business to Business to Consumer
BtoC (B2C)	Business to Consumer
CAPEX	Capital Expenditure
CDMA	Code Division Multiple Access
CDMA EV DO	Code Division Multiple Access Evolution-Data Optimized
CD	Compact Disc
CE	Consumer Electronics
CRM	Consumer Relationship Management
CtoC (C2C)	Consumer to Consumer
DBS	Digital Broadcasting System
DECT	Digital Enhanced (former European) Cordless Telecommunications
DRM	Digital Rights Management
DSL	Digital Subscriber Line
DTT(V)	Digital Terrestrial Television
DVD	Digital Video Disc
EDI	Electronic Data Interchange
EDGE	Enhanced Data rates for GSM Evolution
ERP	Enterprise Resource Planning
EPO	European Patents Office
XML	Extensible Markup Language
XMPP	Extensible Messaging and Presence Protocol
FTTB	Fiber To The Building
FFTH	Fiber To The Home
FTTLA	Fiber To The Last Amplifier
FTTN	Fiber To The Node
FTTx	Fiber To The x (Home, Building, Premises, Curb)
FFA	Field Force Automation
FTP	File Transfer Protocol
FSO	Financial Services Outsourcing
FMC	Fixed Mobile Convergence
FVNO	Fixed Virtual Network Operator
Flash OFDM	Flash - Orthogonal Frequency-Division Multiplexing
FOD	Free On Demand
GDP	Gross Domestic Product
GPRS	General Packet Radio Service
GPS	Global Positioning System
GSM	Global System for Mobile communications
HD	High Definition
HDTV	High Definition Television
HSPDA	High-Speed Downlink Packet Access
HSUPA	High-Speed Uplink Packet Access
HTML	Hypertext Markup Language
ICT	Information and Communication Technologies
IT	Information Technology
ITO	Information Technology Outsourcing

IM	Instant Messaging
ISDN	Integrated Services Digital Network
IANA	Internet Assigned Numbers Authority
IP	Internet Protocol
IPTV	Internet Protocol Television
ISP	Internet Service Provider
IMS	IP Multimedia Subsystem
IPv4	IP version 4
IPv6	IP version 6
KTS	Key Telephone System
LCD	Liquid Crystal Display
LAN	Local Area Network
LTE	Long Term Evolution
M2M	Machine to Machine
MMO	Massive Multiplayer Online
MMOG	Massive Multiplayer Online Game
MEA	Middle East Africa
MNO	Mobile Network Operator
MVNO	Mobile Virtual Network Operator
MP3	MPEG Audio Layer 3
MPLS	Multi Protocol Label Switching
MBMS	Multimedia Broadcast Multicast Service
MMS	Multimedia Messaging Service
MSO	Multiple Service Operator
NFC	Near Field Communication
nPVR	near Personal Video Recorder
NGN	Next Generation Network
OTA	Office of the Telecoms Adjudicator
OS	Operating System
PPV	Pay Per View
P2P	Peer to Peer
PC	Personal Computer
PDA	Personal Digital Assistant
PHS	Personal Handyphone System
PVR	Personal Video Recorder
PMP	Portable Media Player
PER	Price Earning Ratio
PABX	Private Automatic Branch Exchange
PBX	Private Branch Exchange
PSTN	Public Switched Telephone Network
RFID	Radio Frequency Identification
RSS	Really Simple Syndication ou Rich Site Summary
RBOC	Regional Bell Operating Company
SFO	Search-Find-Obtain
SOA	Service Oriented Architecture
SIP	Session Initiation Protocol
STB	Set Top Box
SMS	Short Message Service
SLA	Site-Level Aggregator
SMEs	Small and Medium Enterprises
SMIs	Small and Medium Industries
SoHo	Small offices Home offices
SaaS	Software as a Service
SIM	Subscriber Identity Module
SVOD	Subscription Video On Demand
SCM	Supply Chain Management
TMT	Technologies / Media / Telecoms
TTTx	Telephone To The X
ToIP	Telephony over IP
TV	Television
TDM	Time Division Multiplex
TVoIP	TV over IP
UHF	Ultra high frequency
UMTS	Universal Mobile Telecommunication System
UMA	Unlicensed Mobile Access
UGC	User Generated Content
VAT	Value Added Taxes
VHF	Very high frequency
VDSL	Very High Speed Digital Subscriber Line
VOD	Video On Demand
VNO	Virtual Network Operator
VPN	Virtual Private Network
VoIP	Voice over IP
WDM	Wavelength-division multiplexing
WAN	Wide Area Network
WCDMA	Wideband Code Division Multiple Access
WAP	Wireless Access Protocol
WiBro	Wireless Broadband
Wifi	Wireless Fidelity
WLAN	Wireless Local Area Network
WiMax	Worldwide interoperability for Microwave Access
xDSL	x Digital Subscriber Line

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IDATE
www.idate.org

Founded in 1977, IDATE is one of Europe's foremost market analysis and consulting firms, whose mission is to provide assistance in strategic decision-making for its clients in the Telecom, Internet and Media industries, through the following two areas of activity:

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ICT market update

ICT economic observatory

- IT
- Telecoms
- Television

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