IDATE Foundation

DigiWorld2007

Understanding the Digital World

The future, seen from 2006

This is a time of tensions and tangents, where surprises are not what they seem.

Around us, the legacy players of media and telecoms clutch at unfamiliar positions. Web 2.0 spells ubiquity – and confusion rules among the business models. Europe is mobile-saturated, to a point. China and India rush to centre stage with myriad roles. Regulation chases after its own function amid the swirls of consolidation and convergence. Innovation delights in its own diversity.

This DigiWorld 2007 report, our seventh, makes sense of today's transformations in the digital world. It gives you a rare, crisp mix of factual and forecast, enriched by IDATE's expert analysis and reporting of the year gone past, and holds it up against the light of the next.

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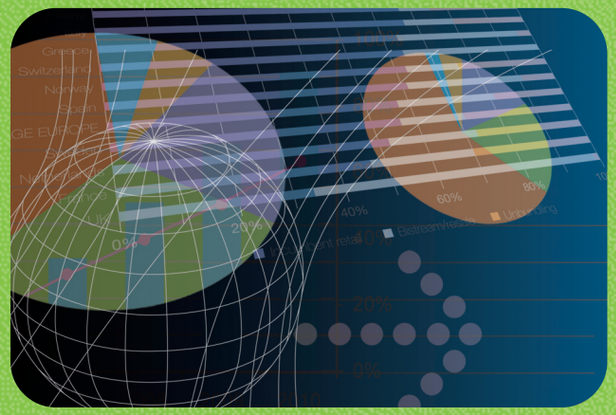

Telecom
Internet
Media

The digital world's challenges

IDATE
Foundation
European forum on the digital world

Over the years, IDATE has earned the reputation of a leading centre for debate and analysis in Europe, specialized in the telecommunications, internet and audiovisual media markets. The IDATE Foundation 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.
Every month it brings together leading executives from its business members, in the form of the IDATE Club, along with organising top-flight seminars for its members and supporting the activities of the IDATE Forum such as IDATE's DigiWorld Summit or the publication of the *DigiWorld* Report.

IDATE
BP 4167
F 34092 Montpellier Cedex 5
France
Tel. +33 (0) 467 144 444
Fax +33 (0) 467 144 400
email: info@idate.org
www.idate.org

This book has been edited under the direction of Hélène Ollivier and Didier Pouillot, with the collaboration of Vincent Bonneau, Gilles Fontaine, Julien Salanave, and the participation of Richard Avisse, Sophie Bismut, Pierre Carbonne, Frédéric Faivre, Philippe Mathonnet, Laurence Meyer, Tiana Ramahandry, Stéphanie Villaret.

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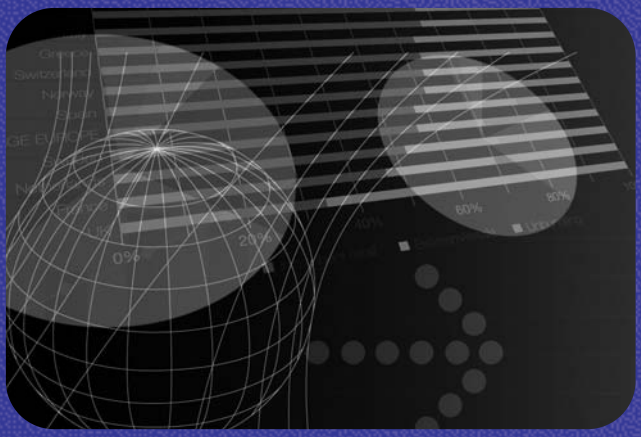

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Foreword

The year 2006 saw a further slowing of growth in the markets for telecommunications products, networks and services in both Europe and North America. This reflects the ongoing decline in prices for the same services rendered, and a certain saturation in the mobiles market. Yet behind this mask lies a healthy market momentum, sustained by a surging flood of innovations. Whether incremental or disruptive, they impinge upon the full raft of technologies, marketing and business models.

They are profound. These innovations are triggering a rapid transformation of individual and collective behaviour, of the way that businesses and markets operate, and of the world's geo-economic equilibrium. Every day, they enable easier access to the full font of the world's knowledge, and the development of new forms of collective intelligence. They make it possible for isolated and underprivileged populations to be brought into the fold of global communication and exchange. They offer to each and every person the freedom to join the social network of their choice, and to dream up and experiment with new forms of self-expression. They facilitate the emergence of global marketplaces open to all suppliers, regardless of size, and expand consumers' freedom of choice. And, finally, they contribute to gains in productivity that enable the pursuit of steady growth, with next to no inflation.

We surely must not underestimate the darker side of this shiny scenario. The very scope and the nature of the web, the ubiquity and accessibility of networks, and the power and efficiency of search engines and analytical tools all bring benefits to their normal users. Yet these same benefits also become the tools of those who, often with great imagination, threaten our security, the security of our exchanges, our private lives, our intellectual and industrial property and more.

These risks are many, but they do not appear to be hampering the momentum created by the conver-

gence of broadband, mobile and the power of IT devices. Experience has shown us that the collective intelligence set in motion by the web drives the creation and implementation of remediation and counter-measures.

This momentum is shaking up the entire communications and media industries. Value chains are in full upheaval and the once exclusive domains of the sectors' veteran players are under threat, their business models undermined and their margins crumbling.

The year 2006 only served to confirm these trends and, despite rapid growth in the volume of products and services consumed, we are witnessing a clear decline in the growth of suppliers' revenues and margins. At the same time, traditional suppliers are struggling to mount a response to the challenges at hand: for telephone equipment-makers, the development of generations of much cheaper equipment and the surge of competition from Asia; for telcos, the fact of basic services having become such a commonplace, the relentless drop in prices and the difficulty of conquering new value-added markets; for TV channels, fragmentation of programming, the shift to personalised viewing and threats to their audience…

These trends will surely continue. The convergence of technologies, industries and sectors is growing apace, being shaped by new players and new power fronts: the internet's top intermediaries, fixed and mobile broadband, the ubiquitous image, the shift in advertising spending, personalisation and interactivity of services, and the rising tide of social networks.

Competition is intensifying for consumers, diversified audiences and access to the digital home. Content is replacing infrastructure as the key in the equation, and is crucial in both winning the loyalty of customers well-attuned to channel-hopping and in securing ad revenues when other revenue streams are challenged. From Google to telcos, by way of eBay, Microsoft and News Corp., all the players in digitised intermediation are engaged in a battle with an unpredictable outcome.

The new rules of the global competition game are far from being set in stone. This situation is, and will continue to be, a possible source of excessive optimism or concern and, undoubtedly, one of uncertainty and confusion. What is entirely likely, however, is that customer attitudes – the ultimate point of convergence of products and services – will be decisive in shaping all the competitors' futures. And thus, regardless of their place in the value chain, suppliers will need to honour the value of consumer habits, user-friendliness and freedom of choice – whether real or perceived.

If we fail to respect these priorities, then the markets, at least in the West, could well asphyxiate as demand grinds to the slowdown that follows from overt complexity and from the erosion of margins under the impact of competition from Asia and the IP economy.

The year 2007 could well be decisive in confirming or inventing new business models. Much is at play here: taking account of changes in consumer behaviour; the fragility of acquired positions; the growing clout of China and India, and the need to make sense of all this complexity and uncertainty. The need to address these issues is now more pressing than ever before. Hence IDATE's decision to make this the subject of the next *DigiWorld Summit*, in November 2007.

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Introduction

In the DigiWorld, the businesses of the major players are forever evolving. The classical dividing lines are steadily fading, or being rubbed out, as fast as the incoming tides of proliferating announcements of change. And thus grows the challenge, in each edition of our annual report, to pinpoint key trends from a sectoral or geographical perspective, and so provide a comprehensive summary of the year's events.

In this introduction, we shall nevertheless outline four events that marked 2006 and provide what we view as a common thread.

Google … at the dawn of web 2.0

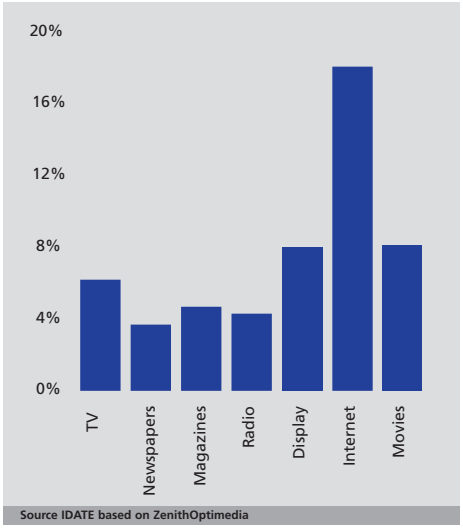
In October 2006, Google announced its acquisition of YouTube for 1.65 billion USD in shares. In a matter of months, YouTube had become one of the frontrunners in a new brand of website dedicated to hosting and distributing user-generated video content. The site's income is negligible, given the millions of video downloads performed on it every day but, having launched its own video offers with little success, Google anticipated the new site's potential for value creation by drawing on its capacity to monetise web 2.0 services. This deal, along with others that took place in the preceding months (notably News Corp.'s acquisition of MySpace) and in the weeks that followed, triggered natural concerns over a possible bubble 2.0.

The excitement over certain web 2.0 sites that continued to make headlines in 2006 seemed at times overstated, and a great many uncertainties still remained. Yet the excitement does find some justification when we see the ever-growing demand among web users for means to express themselves, to exchange and be seen through social networking sites – as pointed out in last year's report. The explosion of blogs and the number of users that converge around sites such as YouTube, MySpace, Wikipedia, Facebook, Flickr and Del.icio.us only serves to confirm this.

The rise of web 2.0 sites is also coming at a time when online advertising investments are enjoying a significant upswing: they now total 6% of total ad spending, and are growing by roughly 25% annually. This trend is expected to continue for at least three reasons. First, the ongoing growth of broadband subscribers, which automatically means a potentially larger audience. Second, the fact that the imbalance between the value that advertisers attribute to TV viewers and to internet users is gradually being set to right. And, third, the features of fixed and mobile websites that are reviving advertising's ability to communicate with consumers: interactivity, segmentation based on location and behaviour profiles, and viral marketing in online communities all point to a better return on investments on the web, compared to what TV programmes are able to secure.

Although TV channels' revenues, and even their audience, do not appear to be facing an

Annual growth of ad revenues, by medium, 2005-2008



Source IDATE based on ZenithOptimedia

immediate threat, other concerns have been expressed in recent months. First, their distribution strategies, notably in the form of "packages", need to take into account not only their own destabilisation due to the transition to digital but also the growing prominence of telcos in the market (triple plays and mobile TV) – an impact that was felt in France in 2006, leading to the long-expected merger of satellite pay-TV providers, TPS and CanalSat. Added to this, the major TV companies cannot sit idly by in this era of time-shifted and increasingly personalised programme viewing. While it seems unlikely that channels will disappear, they do need to find ways to defend their brand and exploit their ability to push their shows through the various forms of VoD. This is all the more crucial given that there is a very real concern that their partners on the production side, such as Hollywood studios which felt the hit of the shrinking DVD market in 2006, may well seek to do business with popular internet sites like BitTorrent, or with other major online distributors. This is no doubt the view of the future that drove Kazaa and Skype founders to create the Joost P2P site, offering TV channels that allow web users to find and view the programmes they want, whenever they want, based on an ad revenue sharing model.

Another consequence of this new environment was the trend in 2006 of taking a closer look at the importance of implementing DRM solutions. It was by keeping their model and by offering ad revenue sharing that web 2.0 sites, and certain distributors, first sought to negotiate with independent labels, and later with the music industry's heavyweights and even the top movie studios. In the same vein, the community approach did wield some influence over the state of the market but in no way put an end to illegal downloads, which is still a common practice among the majority of web users. With its iPod/iTunes model, Apple continues to stand out as perhaps the only company that has been successful in charging for online music, and is now extending into the realm of video content, although some flat rate services do appear to be getting off to a promising start. Mobile operators in particular – with the possible exception of Asian ones – have yet to be convincing in their ability to generate sizeable revenues from delivering content, or margins comparable to those generated by ringtone downloads.

Beyond heralding the clear potential of web 2.0 approaches, Google's acquisition of YouTube also reveals the growing lead that the top search engines have been gaining over the internet's other titans in recent months. The increasing revenue stream provided by sponsored links means that Google is the first to benefit from the growth of online advertising. The company's sales, of which ad revenues account for 90%, rose from 6.1 billion USD in 2005 to 10.6 billion last year, while its profits doubled to 3 billion USD. This stunning performance has not gone unnoticed on financial markets, which valued the company at more than 150 billion in January 2007, while Yahoo!'s share price took a tumble despite a series of major web 2.0 acquisitions (Flickr and Del.icio.us).

Two questions thus emerge: what will Google do with its formidable valuation? And who will be able to compete with the heady position achieved by the world's top search engine? As regards the first point, it is difficult to see beyond what already took place in 2006, namely a combination of the regular launch of new services, the takeover of more popular sites, along with agreements with other sites and even other media such as the written press and TV channels, to consolidate its stature as a central cross-platform advertising system. On the second point, it is entirely possible that its direct

rivals will seek to emulate its success in the area of sponsored links while new entrants – using more sophisticated search algorithms (picture or music-oriented, or extended to blogs and incorporating user feedback in the web 2.0 spirit of things) – will overthrow the leader, despite web users' entrenched habits and the success of its AdSense service and the host of agreements that make its presence on the net so ubiquitous. Competition over attracting audience and ad revenues could also increase with the rise of new sites that would either remain independent or be taken over by Yahoo! or MSN or with an eye to initiatives by major press conglomerates which should not be written out of the picture just yet.

After all, in China and in other Asian markets which are bound to play a growing role in the equation, Google is far from being a dominant player. When evaluating the market entry barriers, there is a tendency to underestimate the considerable expertise developed by the firm Mountain View in handling ever-growing search traffic and in managing equally dynamic masses of data. According to some experts, therein lie the only reasons for Google's lead, namely the exceptional IT expertise required to operate massive combinations of processors and memories. Added to questions of accumulated power in terms of control over commercial information and personal data, or the monetisation of cultural heritage, are questions over the European industry's deficit of expertise in implementing and operating IT platforms. The hypothesis is not shared by others who point out that YouTube and other nascent sites managed to adapt to a spectacular surge in traffic in only a few months.

Nor is it a foregone conclusion that Google's priority is the workstation and desktop applications which currently account for only a fraction of its income. While, according to some, the ultimate rivalry will eventually be between Google and Microsoft, others hold fast to their belief that search engines and the internet giants will be treading more and more on fixed and mobile telcos' territory. This shift of dividing lines is expected from all companies commonly referred to as the "internet giants" – already made concrete to some degree by the funding of a municipal Wi-Fi network, and the steady expansion of communication functionalities on offer (IM and calling services). And though it has not yet happened, many are expecting them to launch an MVNO offer, or even take over a fibre optic operator.

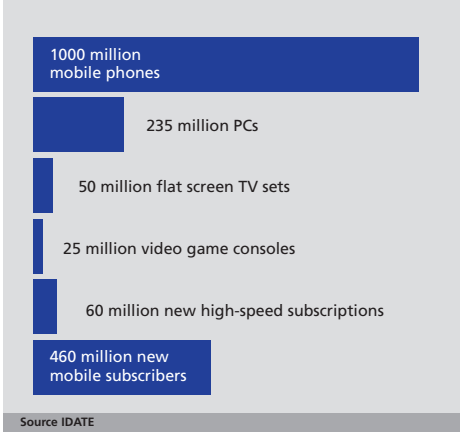
But the situation needs to be examined in a much more nuanced way. It is unlikely that Google has plans to become an access provider, or that its ad revenues would be capable of financing such an endeavour. The large portals' telephony applications are just part of the ingredients that allow them to attract a mass audience to the screen and to secure their loyalty. They generate little or no revenues and, in the most mature markets such as France, appear to have little chance of rivalling telcos' or cablecos' broadband voice services when seeking to woo ordinary users. The same holds true for specialised operators such as Vonage, which had a disappointing IPO, or even Skype whose future, in light of results over the past few months, appears to lie more in providing voice communication features for eBay users than as a universal VoIP service.

Ultimately, telcos can view their growing relationship with the internet giants as a positive thing, even if they will need to step up their transition process, become more involved in the advertising market which constitutes internet companies' lifeblood – while continuing to hone their expertise in billing and payment, as advertising will not be capable of financing everything.

When India awakes… or the growing weight of emerging markets

In October 2006 alone, India's mobile user base grew by 6.7 million, considerably more than the monthly increase of 5 million users that we have become used to seeing in the Chinese market. More than any other product, cellular is a great measure of the globalisation phenomenon. Over a billion of them were sold in 2006 – four times the number of computers, and close to twenty times the number of flat screen TVs…

Top ICT goods and subscription sales in 2006



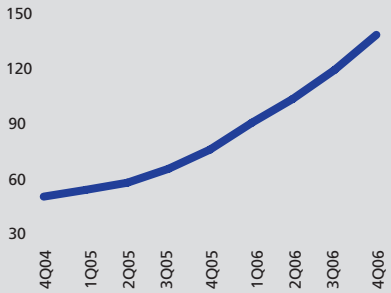
Source IDATE

Up until this point, China had been the benchmark of emerging economies' growing weight in the telecommunications sector, while India had been the country of reference for IT offshore operations.

This explosive growth, which made the Indian market home to close to 150 million mobile users at the end of 2006, has every chance of continuing. India is in fact far from having caught up with the Chinese market, which has three times the penetration rate (having reached 150 million users at the end of 2001).

These figures alone are enough to whet the appetite of the West's top mobile operators, all on the lookout for growth outlets. The year ended with an offer from Vodafone of some 8.5 billion EUR (excluding 1.5 billion in debt takeover) for Hutchison Whampoa's 67% stake in India's fourth largest operator, Hutchison Essar. This deal comes on the heels of Vodafone's sale of its minority holdings in mature markets, namely Belgium (Proximus), Japan (Vodafone Japan) and Switzerland (Swisscom Mobile). Thanks to this acquisition and others, including its takeover of Turkish telco Telsim in May, Vodafone has announced that, in five years' time, emerging markets will account for a third of its profits.

Growth of mobile users in India in 2006 (million)



Source IDATE

Estimates indicate that, in 2006, the telecom services market in developing countries increased by 45 billion USD – accounting for 76% of growth worldwide – with two-thirds of this increase concentrated in five countries: China, Brazil, Mexico, India and Russia.

Meanwhile, China's massive market – which represents close to a quarter of the world market – continues to grow, but we are not hearing the expected announcements. We still do not know with which operator, and within what timeframe the TD-SCDMA standard will be launched. Nor do we know how market share and territorial control will be divided up between the country's two mobile and fixed giants (China Mobile and China Telecom) and their respective challengers (China Unicom and China Netcom). It now seems likely that China Mobile will go up

against a China Telecom which has inherited Unicom's CDMA subscribers, while Netcom will take control of the latter's GSM subscribers.

The reorganisation is expected to take place this year, in time for the launch of 3G for the upcoming Olympic Games in Beijing, and is being watched closely by operators in the West, particularly those which have – modestly, but with a certain audacity – invested in China Mobile (Vodafone), Netcom (Telefónica) and, more recently, Unicom (SKT). Curiously, this focus on the telecom sector's reorganisation, and the launch of 3G, is tending to overshadow the innovative services being introduced as the Chinese market continues its heady growth.

Alongside the potentially huge equipment market in rural areas, where mobile penetration rates are often below 10%, is the increasingly sophisticated market in the coastal cities where take-up can run as high as 90%. More than 20% of China Mobile's revenues are already generated from services other than calling: text messaging, voice telematics and music. In 2006, revenues from value-added mobile services, supplied by hundreds of different companies, are expected to surpass 10 billion USD, even though no 3G platform is yet operational. In the fixed market, serving some 50 million broadband subscribers, the country has given birth to firms such as Baidu, Sina and Tencent which are far more popular than the top international players in the search, general interest portal and IM markets. IPTV is still in the very early stages, for both regulatory and institutional reasons, but is being tested on a large scale, while China Telecom and China Netcom are reporting 45 million ADSL customers.

China also continued to make great strides in the telecommunications equipment market in 2006. Its top suppliers are enjoy a steadily growing share of their home market even if, in the area of mobile handsets, Western manufacturers (headed by Nokia) continue to be hugely popular with consumers. Huawei and ZTE have both managed to penetrate highly competitive Western markets, serving both incumbent and new entrant telcos which are feeling the pressure to innovate without letting spending spiral out of control. And they were widely cited when two veteran giants, Alcatel and Lucent, decided to merge and when Siemens opted to pull out of the telecommunications sector by merging its infrastructure business with Nokia's.

Chinese players are also making forays on the international stage in the area of services – a good case in point being China Mobile's attempts to take control of Millicom International, an operator specialised in emerging markets. On the whole, Western telcos are going to have to get used to seeing not only Chinese firms, but also ones from India, such as Bharti and Reliance, from Russia, from the Gulf region (Etisalat) and the Middle East, such as Orascom, taking part in their own privatisation and competing for licences in emerging markets, and even in certain segments on Westerners' home turf.

AT&T is back… embodying the era of convergence and consolidation

The announcement had been made back in 2005, but it was not until late December 2006 that the FCC gave the go-ahead for AT&T and BellSouth to merge. Why the hold up? First, the deal was worth 85 billion USD, the ICT industry's largest for the year, and allows AT&T, which SBC chose as its new name when it took control of the long distance carrier, to merge with the last of the independent Baby Bells. The new concern would boast close to 70 million lines and more than 11 million broadband customers in 22 of the most populated states. But,

above all, the operation would allow the telco to be on an equal footing with Verizon by consolidating mobile operator Cingular (54 million customers), which had been a joint venture between SBC and BellSouth up until then. This deal is therefore clearly a big push into the era of fixed-mobile convergence which truly began taking shape in 2006.

The priority given to convergence in the United States lies in the consolidation of the mobile sector's still very healthy sales, at a time when fixed operations are being severely penalised by the shrinking landline base and cablecos' powerful hold in the triple play. Verizon Wireless and Cingular are boasting double-digit subscriber growth, unlike European operators whose growth dropped again last year as their markets are nearing saturation, and they are feeling the squeeze of new regulatory pressures and of competition strategies that are heating up once again.

As a result, fixed-mobile convergence meant two things in Europe in 2006. First, the widespread trend among operators of introducing offers that include cellular handsets equipped with a Wi-Fi interface for connecting to ADSL wherever possible, and for making VoIP calls. These offers will help step up the phenomenon of increased landline traffic growth, which we have seen already in France (+1.6% thanks to VoIP which, at the end of the year, accounted for 18.6% of calls originating on fixed lines). For a long time a pure player, Vodafone considered this type of convergence as significant enough to seek out agreements with landline telcos to be able to market fixed-mobile bundles. Naturally, we have seen and will continue to see landline telcos focusing on agreements with cellular operators or MVNOs to equip themselves with a mobile component. Another event in 2006 that falls into this trend was cableco NTL's integration of MVNO Virgin Mobile, which had previously belonged to Virgin and Deutsche Telekom.

In addition to this approach to fixed-mobile convergence, 2006 was also marked by Hutchison Whampoa subsidiary 3's launch of X-series offers, which illustrate another expression of FMC: a significant merging of fixed and mobile broadband business plans, including flat rates and agreements with the web's top players (Google, Yahoo! Skype…) on the mobile front. It should nonetheless be pointed out that the new strategy of this number six player in the UK's fiercely competitive market has a relatively slim chance of being emulated by the top operators. We will probably see mobile operators' walled gardens open up gradually through a growing number of partnerships with internet actors, but without access billing switching suddenly or fully to unlimited mode.

In 2006, mobile TV projects appeared to still be a priority for the leading cellular operators, but predictions in this area are still a complicated affair, given the host of technical combinations, along with the diversity of product offers which have been tested or are being touted by the players. In the technical realm, we need only think of the battles over standards, the questions over satellite's part in the equation, or the use of Wi-Fi for delivering indoor access alongside broadcasting networks. To this we could also add the iPod option, now heightened by the upcoming iPhone which is banking on nomadic consumption of videos downloaded off the computer. As far as products are concerned, IDATE has distinguished at least four major types of offer: access to leading traditional channels, premium channels designed for mobile TV, a selection of pay-per-view programmes and services like MyTV included in an internet access offer.

Mobile operators also need to define their stance with respect to WiMAX and if and

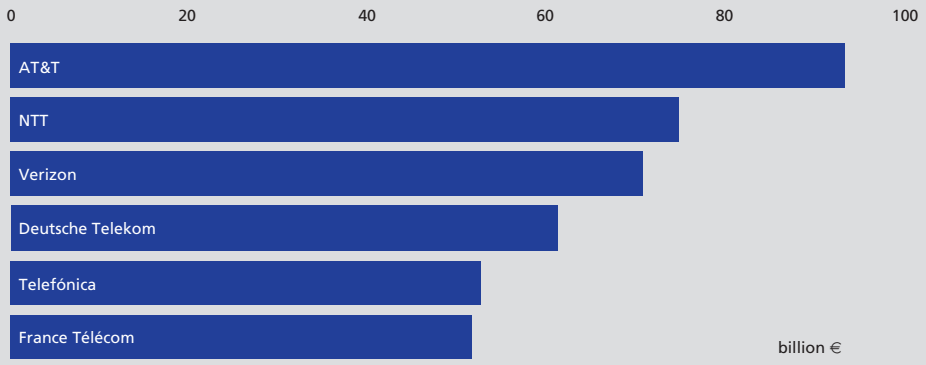
how it is to be deployed, particularly with respect to its mobile version (802.16e). North America's fourth largest mobile operator, Sprint Nextel, surprised everyone in Q3 2006 by announcing a major contract with Motorola, Samsung and Intel for deploying an 802.16e mobile network alongside its CDMA network, with the goal of getting a head start over the competition in delivering 4G features. It is still too early to say whether other major telcos will follow suit, even if it does seem likely that, especially in Europe, they will continue to upgrade their WCDMA/HSDPA - HSUPA networks. Even South Korea's KT – the mobile WiMAX pioneer using its WiBro technology – appears to have renounced on plans to cover the entire country, focusing instead on more localised rollouts and so benefiting its HSDPA network. Meanwhile, for landline telcos with no mobile infrastructure and for MVNOs, depending on spectrum access conditions, mobile WiMAX could prove an interesting option when seeking to compete with the top cellular operators. In 2007 BT, for instance, is expected to take advantage of Ofcom's announced auctioning off of frequencies in the 2010-2690 MHz bands. Further on down the road, even if WiMAX does not become a standard, its features are likely to be found in 4G standardisations specs – although the choices made over the next five years in the large emerging markets will go a long way in shaping the future state of affairs.

It appears that AT&T's executives' solemn commitment to upholding the principles of net neutrality is what helped drive through the FCC's approval of the AT&T-BellSouth merger. This notion of net neutrality began making headlines in the United States just over a year ago, at a time when the country's top two carriers were making plans to invest in optical or hybrid infrastructures, to be able to better compete with cable providers. This triggered a debate that was rather complex, given the wide array of definitions associated with it. Certain extreme points of view consider that it is unacceptable for an ultra-broadband infrastructure operator to provide a line of access services that distinguish a best effort type offer from one that offers guaranteed bitrates. The most widely expressed concern was that, by offering different quality access services, the provider supplying the pipe would favour its own services over those being supplied by other vendors or internet portals. AT&T committed to not discriminating against other service providers' access to the web, but certain purists pointed out two exceptions to this commitment. The first involves VPN services delivered to business customers, and the second to TV markets and video services. In this era of the increasingly ubiquitous triple play and a host of online video services, they consider that, by reserving frequencies and wavelengths for their TV programmes, the architectures that AT&T (U-verse) and Verizon (Fios) are building to rival cablecos' offers run counter to the principles of net neutrality. Here, we find ourselves in the age-old American debate that pitted the backers of common carriage against cable operators' interests.

It nevertheless remains the case that, ultimately, the relevance of a net neutrality type regulation depends a great deal on the degree of competition that exists over access. We shall come back to the separation model being debated in Europe.

The AT&T-BellSouth merger provides an opportunity to take note of the growing divergence in the way the telecom services market is structured on either side of the Atlantic. In the United States, a major portion of landline and mobile markets is now controlled by two companies, Verizon and AT&T, and to a lesser degree by Sprint, T-Mobile and Qwest. On a

Operator ranking in 2006

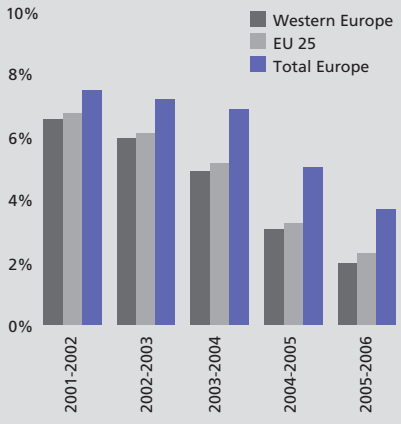


Source IDATE based on operators

grand market scale, this concentration which is relatively comparable in value to the European market, is offset by cable's growing weight in the equation in the US. Cable boasts solid dominance of America's pay-TV market, despite the progress being made by satellite and, in 2006, reported double-digit growth along with high broadband ARPU and very popular fixed calling offers (while awaiting the launch of co-branded mobile services with Sprint Nextel). But the US cable industry is highly concentrated, and a far cry from Europe's fragmented telecom markets which are populated by dozens of fixed and mobile operators. With the notable exception of the 26.1 billion EUR that Telefónica paid for O2, in Europe 2006 was marked chiefly by national consolidation, particularly in the broadband access sector, rather than by any real rise in pan-European ambitions. This divergence from the clearly stated goal of achieving a large single market needs to be viewed alongside the confirmation that growth in Europe's telecom services markets is dwindling – a fact somewhat masked by the incorporation of new Member States: +2.3% growth for the EU-25, but less than 2% for the original 15.

Convergence and slowing market growth are thus likely to be the forces driving the telecommunications sector's future recomposition and concentration. Although a classic scenario for a mature industry, it will not take shape in the same manner across the board. It is likely to be combined with other prevailing forces – whose degrees of impact will vary depending on the operator – such as telcos' vertical integration in their bid to better manage the value of their various applications, or an imposed or chosen dissociation of infrastructure management and end user services. Without giving regulators direct responsibility in the companies' strategies, it is clear that regulatory conditions do go some way in shaping market trends.

Growth of Europe's telecommunication services market



Note: includes Russia, Ukrainia and Turkey

Source IDATE

Beyond the EU regulatory framework Review: from structural separation to defining the status of optical networks

The clash of views over the shape of the telecom markets of tomorrow provided the backdrop for the debates over the review of Europe's regulatory framework, which constitutes our fourth outstanding event for 2006.

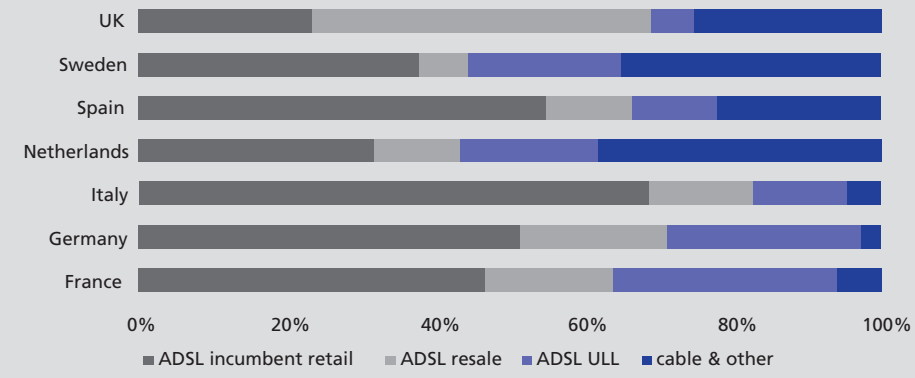
The procedure is not yet over, and we do not yet know what changes will be chosen to be put into effect in or around 2009. The lengthiness of the process is contributing to shoring up the two sides: the static approach which focuses on the regulatory framework's flaws, notably with respect to the disparity of its application across Europe, and the dynamic approach which is concerned that the regulatory framework, which was defined provisionally in 2002 in the hopes of true deregulation, will be transformed into an increasingly administrated management of the sector. In light of this situation, we can expect to see a certain diminution of *ex ante* (notably retail) market regulation through a shortening of the list of the 18 relevant markets. At the same time, the Commission is looking to establish the right institutional formula to reinforce the homogeneity of the remedies (in equivalent situations) by introducing the Commission's right to veto, or by creating a European authority drawn from the European Regulators Group.

Beyond the options involved in the directives' chief measures, three other themes emerged from the debate over the Review.

First was the issue of the separation of network access and service provision. This notion of separation (operational and/or structural) can be viewed as a remedy that either complements or replaces the measures that apply to third-parties' access to the telephone network's incumbent infrastructure. It comes to reinforce the objectives of unbundling and service resale measures by ensuring the competition equal access to resources deemed essential facilities. This is the OpenReach approach that BT and Ofcom have agreed upon. It would be tempting to find a correlation in the plans set out briefly for Telecom Italia in September, and in the project being pushed by Eircom's new owners. But a certain caution is called for given that, in these cases, considerations are bound up with the possibility of removing controlling shareholders from the debt equation and of improving the ratios taken into account by financial markets.

An entirely different way of viewing such separation (greenfield-oriented) comes into play with the growing interest in deploying

Incumbent telcos' share of Europe's broadband markets, at mid-2006



Source IDATE

optical access networks as a response to the copper loop's limitations. Not all copper lines can support the triple play, which requires more than 10Mbps to be compatible with the HDTV standard and the simultaneous applications enabled by telcos' service boxes. Web 2.0 also justifies restricting use of ADSL's low-speed upstream channel. Some nevertheless consider that the first optical networks deployed will prove a perfect illustration of a natural monopoly, with an infrastructure which cannot be duplicated under reasonable economic conditions. They therefore suggest favouring public or shared investment in the new infrastructure, and defining a scope of operation distinct from the realm of service provision. Naturally, this extreme approach could be tempered by a compromise whereby, in theory, we would see imposed access conditions in line with the investments made by pioneer optical access network operators.

Here we have the second major issue debated during the Review. Germany is about to be notified by Brussels of the launch of an official infraction procedure against a law adopted in late 2006 but not yet published. The law, which Berlin's ruling coalition government had planned to put into effect, guaranteed Deutsche Telekom's new fibre-VDSL infrastructures exemption from the third-party access obligations that the incumbent carrier must adhere to for its phone and ADSL networks. The arguments presented by Deutsche Telekom, guaranteeing that the services offered on the new infrastructure constitute a relevant market distinct from broadband over ADSL, were deemed inadmissible. It is Brussels's view that, in this particular case, there can be no "regulatory holidays" in the name of an "emerging market" as provided for in the framework directive.

According to the EC, German regulation must now clearly define the terms for third-parties' access to the SMP operator's VDSL platform by taking account of the different technical considerations, although the price can include a risk premium. Looking beyond the German case, in a report on optical access networks prepared for the French government, IDATE suggested that this issue be approached without preconceptions, and with the primary goal of identifying entry barriers. The largest cost item when deploying a fibre optic network is civil engineering, while the price of electronics, optoelectronics and fibre is dropping. A variety of technical and regulatory initiatives can be undertaken to promote the use of available cable ducts in cities (sewers, underground), for sharing telcos' and cablecos' ducts wherever possible, encouraging the installation of ducts when work is being done on public thoroughfares, defining rules that enable several operators to intervene in buildings… It also needs to be pointed out that pioneer investments are generally being made in major cities where cable is likely to be fibre's chief natural competitor, delivering comparable bitrates with mainly Fibre to the Last Amplifier architectures.

Also noteworthy is that the announcements being made in a market such as France, and particularly in Paris (Free, Erenis, Noos), are far from being confined only to the incumbent carrier's projects. In all of Europe's major markets, the existence of a number of ISPs with several hundred thousand ASDL subscribers in a given city also makes for a very different situation compared to traditional models. Provided optical infrastructure rollout priorities are studied carefully, they can translate in business plans into cost savings (unbundling on phone lines) and revenues in line with investments.

A facilities-based competition policy cannot be summed up only with questions over the impact of optical access. As we have seen, HSDPA, WiMAX and early forays into 4G are

lending increasing credibility to wireless broadband, and to potential competition (or a situation of complementary geographical coverage) between wired and more and more innovative wireless systems. Discussions underway over frequency management constitute the third central point of discussion which is tied more or less directly to debates over the Review. Backed by several Member States, the Commission wants to incorporate changes to spectrum management regulation that provide for greater flexibility in licence resale and in frequency allocations for technologies and services. The principles of harmonisation could be upheld on certain frequency bands, but only if backed by explicit reasoning. Two players are directly concerned here (in addition to the armed forces). First, TV channels which manage the UHF and VHF frequencies – much sought after by telecommunications market players and which carry no real counterpart conditions other than restrictions over their programming – will likely not be spared digital dividend negotiations. And, second, mobile operators which will have trouble redeploying GSM frequencies for their 3G services and keeping hold of the UMTS extension bands without account being taken of the arrival of new players, and the introduction of potentially rival technologies.

And, lastly, we should point out that, as effective and lasting competition develops, regulation is likely to gradually include less emphasis on the asymmetrical component, and focus more on issues such as scarce resource management (frequency and numbering), and on regulating contracts as more and more criticisms from consumer protection associations are voiced.

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This introduction makes no claims to providing a neat summary of the events that took place in 2006, or to replacing the much more in-depth commentary and analysis that you will find inside the chapters in this report. For it to do so, we would have had to mention Dell's demise and HP's revival, the launch of Vista at a time when open source is making great strides, and the prospects of software as a service… along with talk of the start of a new growth cycle for video games, as new consoles were launched and Nintendo's Wii made a great splash, the flat screen TV (LCD and plasma) battle, the growing role that private equity firms played this past year in media groups (VNU, Clear Channel, MGM), telcos (Deutsche Telekom, Eircom, TDC) and component-makers (Freescale). And more.

We only hope that we have whet your appetite and that you will find this 'DigiWorld Yearbook' a helpful companion throughout the year, as you ponder the many issues that arise.

The DigiWorld in the global economy

The DigiWorld's role in the economy

DigiWorld markets reached some 2,600 billion EUR in 2006, a 5.8% increase over the previous year, and just under global GDP growth at current prices (6.3%). Apart from any questions that may arise over this situation – perhaps curious for sectors considered to be driving forces – we have sought to provide details for each geographical region and sector in analyses which make up the first two chapters of this edition. The subsequent chapters, devoted to changes in the information and communication society in the areas of access and content (business applications and consumer services), reveal a tremendous technological effervescence and rising consumption that is fuelling these markets. Taken together, these snapshots describe a dual-edged industry with one side marked by competitive, market and regulatory pressures, and the other by an innovative drive that continues to create more widespread upheavals in our economic environment.

Moderate growth

Since 2000, sales have grown less quickly for DigiWorld companies than for businesses operating in other sectors of activity. This disparity between new economy and brick and mortar enterprises strikes a contrast with the euphoria that reigned in the late 1990s, particularly since it is not due only to the revival of certain veteran heavyweight industries (petroleum, energy, real estate…), nor to the burst of the dotcom bubble. While it is true that the DigiWorld suffered mediocre performances in the immediate aftermath and from the continued shockwaves which that debacle provoked, we cannot overlook the fact that, even though those days are well behind us, these industries have not managed to regain the healthy momentum they had in pre-bubble days, a. At least not in terms of their direct contribution to revenues, which grew by only 5.8% in 2006. From 2003 to 2006, DigiWorld markets grew at exactly the same pace as the economy as a whole, in other words by 19% in three years.

Lots of volume, but little value

But the paradox is not quite as simple as it may appear at first glance, when looking only at these market figures. On the one hand, it is clear that, in terms of volume, the ICT sector's revival is very solid. More than 1 billion mobile phones were sold around the world in 2006 (compared to 400 million in 2002), 235 million computers, more than 60 million broadband subscriptions, around 50 million flat screen TVs (versus 3 million three years earlier)… So uUnit sales are growing swiftly, allowing ICT to become an increasingly ubiquitous part of the economy, at perhaps an even faster pace than in the '90s. One major difference since then is the state of competition: it is now more lively, and coming from both from neighbouring sectors, as digital convergence takes hold, and from new regions, notably China, South-East Asia and India. Pressure on prices is weighing down the markets' growth in value: the more than 20% increase in mobile phone sales in 2006 translated into a growth in value of only just over 6%, while the 100% increase in flat screen TV unit sales generated only a 50% increase in revenues. In both

the United States and Europe, ICT industry players' margins are feeling the impact, and it is not hard to understand why their stock market performances since 1997 have fared no better than in any other sector of activity. The prime beneficiaries of gains in productivity achieved by the ICT sector are the users.

A global economic situation that continues to create opportunities for ICT

Worldwide growth was still in good shape in the first half of 2006, but was showing some signs of slowing, particularly in the United States. There are a number of reasons for the slowdown, which has been more anticipated than experienced in most industrialised regions: rise in the price of petrol, which weighs on consumers' buying power, rise in interest rates which weighs on currency prices, at least in the short term, along with a variety of ominous signs, both financial (the United States' current deficit) and behavioural (American households' negative savings rate, Chinese overinvestment).

There are nevertheless a number of positive signs. Companies have absorbed the shock of the fuel crisis, at least up until now, thanks to increased productivity and to a global situation of surplus production. As a result, economic growth has managed to withstand the blows. Global competition remains lively and is spurring new productivity investments in developed countries. And here we find the two ingredients that characterise ICT industries' current evolution: the combination of competitive pressure that has a direct impact on the producers of these goods and services, and a steady demand from all economic actors whose production resources rely heavily on these industries.

Disparate regional dynamics

After narrowing in 2005, the growth differential between the United States and Europe widened once again in 2006, albeit slightly, while markets on both sides of the Atlantic took a tumble:

- Growth in European markets has been declining steadily in recent times, reporting an average 0.5 point annual loss over the past three years. Growth in these markets dropped to 4.9% in 2006, and although there is still a significant difference between Western and Eastern European (growth in Western Europe was under 4% in 2006, compared to 10% for Central and Eastern Europe), it is shrinking year by year.
- Meanwhile, the North American markets' great revival in 2004, which gained even more momentum in 2005, helped offset the economic slump for a sizeable portion of 2006. Corporate investments were down and – despite a long period of rebalancing that benefited ICT equipment sales – stayed that way before taking a turn for the worse in 2005.

Growth rates in DigiWorld markets in Western Europe and North America were virtually identical this past year, totalling around 4% for each region.

Even more than in Europe, a distinction needs to be made between Asia's advanced and emerging markets. After a timid revival in 2003 and 2004, Japan's DigiWorld markets have been back on a downswing these past two years, reporting among the lowest growth rates for an industrialised country (+2.4% in 2006). The region's growth is being driven by the large emerging economies of China and India and even though, relative to their size, their economic weight is still limited (China's GDP is less than half and India's less than 20% of Japan's), their contribution is helping fuel a growth rate for the region as a whole which is above the world average and higher than overall economic growth, thanks to a regional industry relatively specialised in ICT.

Digiworld markets in the rest of the world's emerging regions have also enjoyed substantial growth (close to 12%) but still at levels slightly below their GDP growth.

Asia-Pacific driving growth

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:

- telecommunication services: fixed and mobile telephony, data and image transmission;
- telecommunication 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;
- media services: TV, video, cinema;
- consumer electronics: audio and video equipment.

Landscape still dominated by industrialised regions…

Europe and North America still represented 63% of the DigiWorld's market value in 2006: adding Japan and South Korea to the mix, along with several of the Pacific region's advanced economies (Australia and New Zealand) brings the total close to three-quarters of the value of the world market. As we shall see later on through more precise segmentation, a region's share of market volume can differ considerably from its value: for instance, these same regions account for "only" 50% of the world's cellular customer base. In any event, this does mean a sizeable lead for these markets which represent less than 20% of world population.

… but they are slowly losing ground

Dropping to below 6% in 2006, 50% of the market's growth came from emerging markets in Asia and the rest of the world (Latin America, Africa, the Middle East).

In terms of relative value, there is still a considerable contrast between the growth rates reported by these regions (around 12% on average) and by advanced economies (less than 5%).

The European market's growth rate remains a little higher than North America's, primarily thanks to Eastern Europe's contribution. After two years of a generally healthy economic climate and a replacement cycle for ICT equipment in 2004 and 2005, the North American market is once again on a downward trajectory.

Meanwhile, Asia-Pacific's mature markets are still suffering a decline although there were signs of a recovery in 2006, notably in Japan.

Slight recovery, despite encouraging signs

When looking at the ICT industry as a whole, we can see encouraging signs which could well drive a revival of investments in the US and in Europe. In the US, in Germany and in the UK, businesses are generating a high cash flow, and currency prices are not a disincentive to renewed spending. Macroeconomic logic tells us that, like ten years ago, this situation will lead to a revived accumulation of capital overall, and to increased ICT spending in particular. Technologies are indeed one of the first elements affected by enterprises' financial situation, and the current obstacles to spending are well known (the United States' current deficit, danger of plummeting property value, ongoing increase in the price of raw materials).

Meanwhile, in emerging markets, the sharp rise in volume as more and more users equip themselves is translating into a rise in value, which is already high – albeit affected by a different standard of living than in advanced economies.

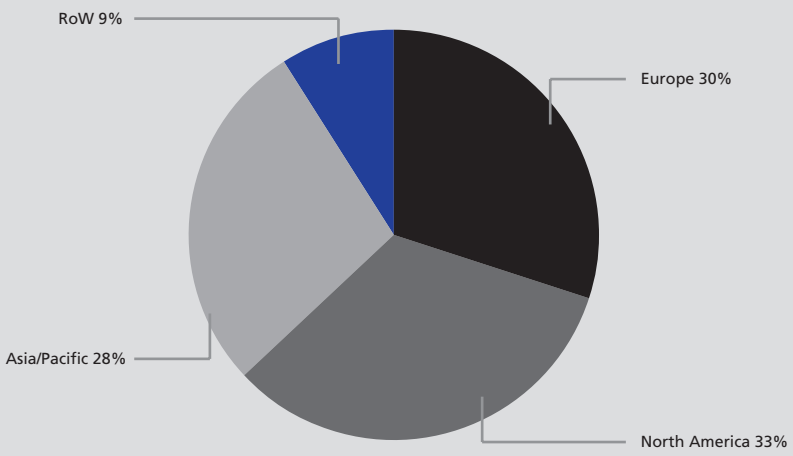
Worldwide DigiWorld markets by region

(billion €)	2003	2004	2005	2006	2007
Europe	660	699	736	773	799
North America	732	768	810	844	882
Asia Pacific	600	649	693	739	791
RoW	186	189	217	243	266
Total	2178	2305	2457	2598	2739

Source IDATE

Industrial regions still ahead…

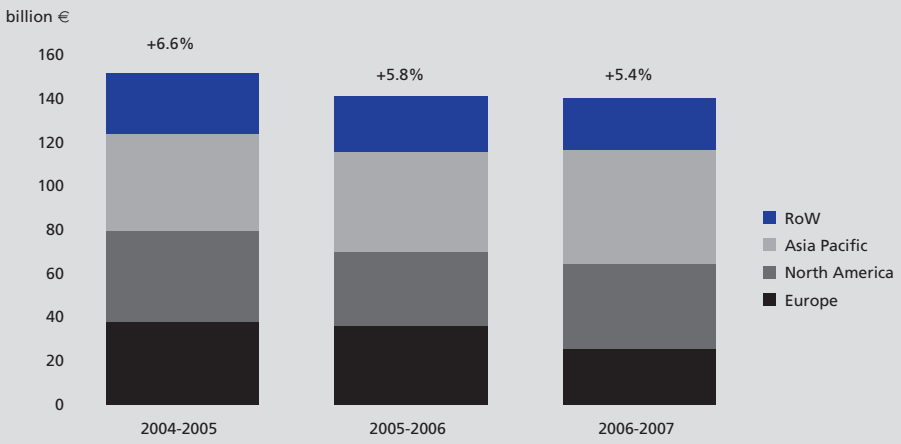
DigiWorld markets by region in 2006



Source IDATE

… when growth slows

DigiWorld markets' contribution to growth, by region



Source IDATE

Overall balance masking great disparities

ICT's weight in the economy

The planet's DigiWorld markets account for 7.3% of global GDP, a percentage which has remained more or less stable for several years now. In other words, DigiWorld markets are not growing any slower or faster than the economy as a whole. This is true whether in the broadcasting, equipment or services market where growth is still high, but where pressure on prices is being felt by most everyone – an element that will be examined in greater detail in our analyses of the different markets.

CE enjoying higher growth than the overall economy

This does not mean, however, that the different sectors and the different regions are all progressing at the same pace. First, five out of six segments are growing at a lesser pace than the economy as a whole, albeit to varying degrees: telecom services and computer hardware in particular both suffered a 1% decrease (measured by the sector's turnover-to-GDP ratio) in 2006. Only the consumer electronics segment is still growing at a faster pace than the economy overall (+3.8% in turnover-to-GDP ratio).

Even within each segment we find major disparities. It is interesting to note that, when brought down to the six levels analysed here, most of these forces even out. In the telecom services sector in particular, cellular's still healthy dynamic continues to offset landline telephony's inexorable decline. As to equipment, the sharp rise in handset sales drove the market upwards in 2004 and 2005, while the network equipment market was moving the other way, but a certain rebalancing took place in 2006 with, on the one hand, a sizeable drop in handset sales revenues (due to ever-growing pressure on prices, despite a massive increase in unit sales) and, on the other, a revival in infrastructure markets.

Asia-Pacific's DigiWorld markets growing faster than GDP

From a geographical standpoint, Asia-Pacific is the only region whose DigiWorld markets are growing at a faster pace than the economy as a whole, notably in emerging countries. Such is not the case, however, in the world's other developing regions (Latin America, Africa, the Middle East). In North America, too, the DigiWorld's growth is below overall economic growth (+6.5% in current prices in 2006) while, in Europe, the two are progressing at exactly the same pace (+4.9%).

As with the segments, a sub-regional analysis reveals uneven growth within the major zones, particularly in Asia-Pacific where we find a sharp contrast between advanced and emerging economies, and in Europe where the Eastern block is helping to maintain a reasonable rate of growth for the region as a whole.

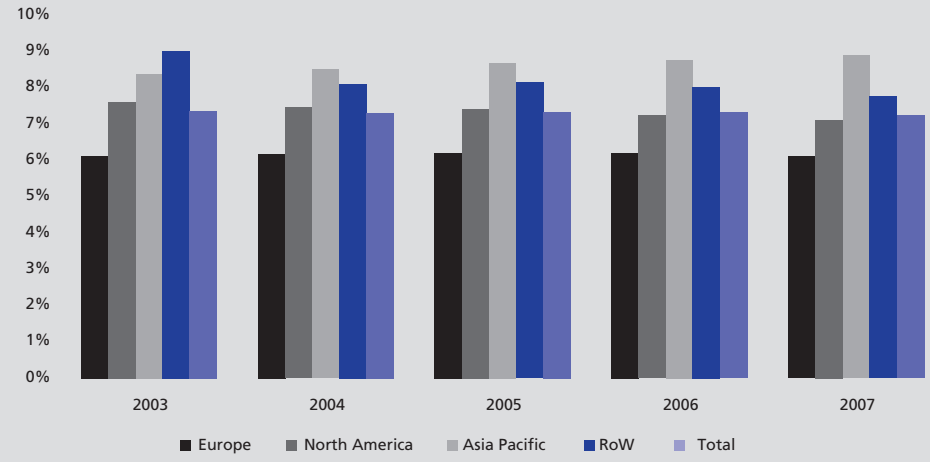
DigiWorld contribution to global GDP

	2003	2004	2005	2006	2007
Telecom services	2.8%	2.8%	2.8%	2.7%	2.7%
Telecom equipment	0.6%	0.6%	0.6%	0.6%	0.6%
Software and computer services	1.8%	1.7%	1.7%	1.7%	1.7%
Computer hardware	0.9%	0.8%	0.8%	0.8%	0.8%
TV services	0.7%	0.7%	0.7%	0.7%	0.7%
Consumer electronics	0.6%	0.7%	0.7%	0.7%	0.7%
Total	7.4%	7.3%	7.3%	7.3%	7.2%

Source IDATE, Rexecode

Asia-Pacific widens its lead…

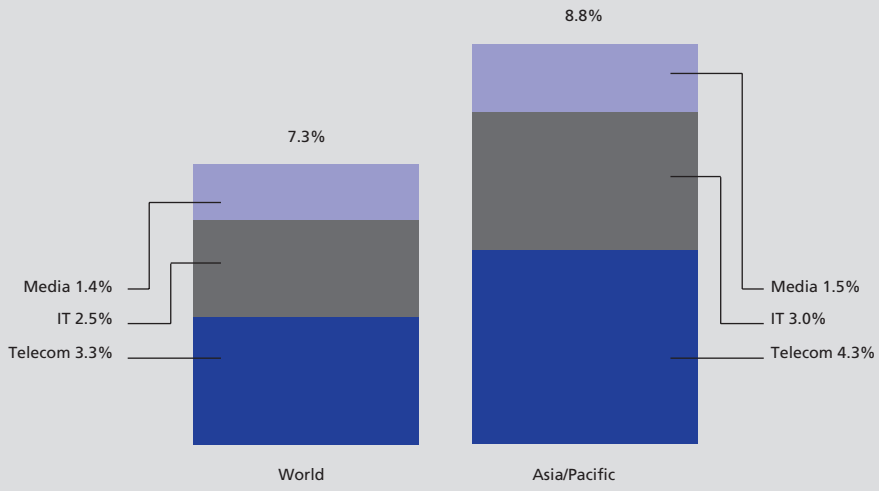
DigiWorld markets as % of GDP



Source IDATE

… especially in telecom sectors

DigiWorld markets as % of GDP in 2006



Source IDATE

Regional rebalancing

ICT investment

Businesses have invested heavily in ICT over the past couple of decades, even after the TMT bubble burst. With the passing of the "digestion" period, investments in Western economies seem to be coming to a standstill. While they appear to have only just reached a plateau, and it is far too soon to speak of a full reversal, this is nevertheless one more sign that DigiWorld market growth in these regions now lies largely in consumer demand. The situation in Asia is a more balanced one, as consumer spending and private investment relay one another, and so sustain the markets' momentum.

Gradual decline in the US

By and large, American businesses' ICT spending has been at the same level as other capital expenditures (excluding construction) over the past five years, a marked shift in the ratio of 1 to 3 in the early 1970s. During the five or six years that preceded the dotcom bubble, spending on ICT equipment had regularly been 15 points above other expenditures. After the bubble burst, the gap shrank steadily until 2005, at which point the ratio reversed. US companies' ICT investments represented 7.4% of GDP at mid 2006, compared to over 9.2% at the start of 2001. Spending has been reigned in since the economic recovery began, and the market shows no excesses in need of correction. Although ICT investments dipped slightly in the first half of 2006, the situation is not expected to deteriorate any further.

Steady recovery in Europe

European businesses' rate of spending dropped by 1.8 value-added points between 2000 and 2004. These cutbacks enabled companies to become profitable once again, and are a good gauge of the renewed momentum in productive investment. Recent times have thus been marked by a revival in capital expenditures: by telcos, which have been investing in their networks (mobile, broadband) and, more widely, by businesses which have been investing in replacing their telecom and IT equipment bases. This is nevertheless coming at a time of major upheavals, both technological (open source applications on computer networks and NGN solutions on telecom networks) and competitive (pressure from newcomers, notably Chinese suppliers).

Healthy outlook in Asia-Pacific

And, finally, investment prospects in Asia-Pacific have been in good shape for several years now. Japan's growth recovery and a relatively low Yen (favourable to export) have enabled the top companies to enjoy high profit levels and to sustain productive investments. Meanwhile, South Korea is reporting rebalanced growth thanks to a revival of demand at home.

As to emerging countries, their spectacular economic growth and the relaxing of monetary restrictions thanks to better price control are expected to spur investments even further. China's increasing clout will likely remain a key driving force in the region – carrying with it all, or at least a sizeable portion of South-East Asian economies.

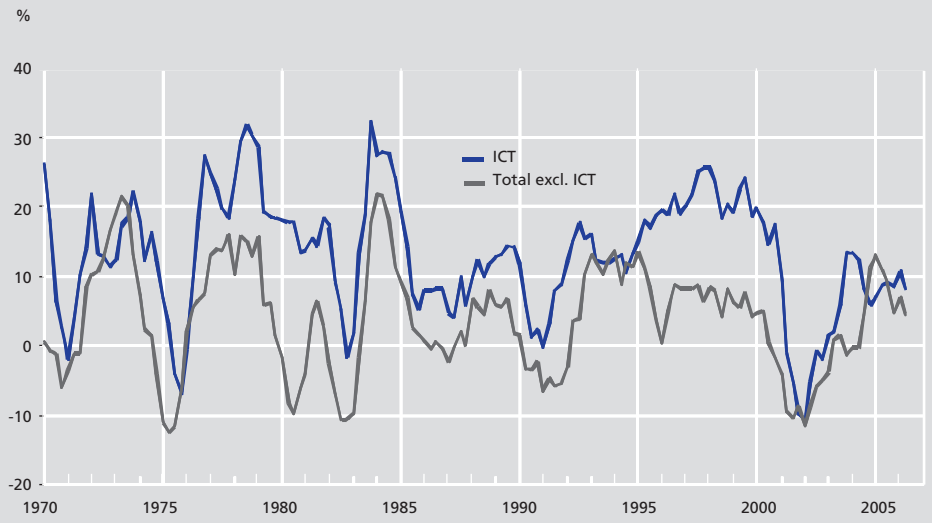
Average annual growth of ICT investments, 1980-2004

(%)		80-90	90-95	95-00	00-04
EU-15	IT equipment	19.2	11.4	33.4	8.4
	Communication equipment	6.2	3.5	12.5	-3.1
	Software	17.5	8.9	11.3	1.2
USA	IT equipment	15.6	17.4	27.5	16.3
	Communication equipment	4.6	6.3	16.1	-1.8
	Software	1.3	-1.0	4.2	-2.6

Source Timmer, Ypma and van Ark (2003), updated June 2005

ICT investment in US

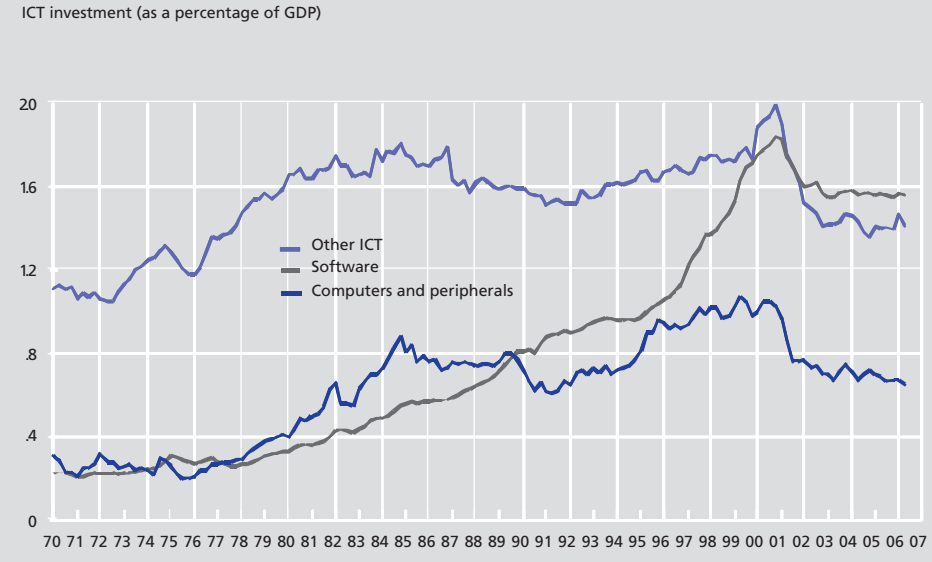
Annual growth of investments by North American companies



Source Rexecode

ICT investments either stagnating or declining

Value of productive private investments



Source Rexecode

The US and South Korea still in good shape

ICT production

The volume of ICT equipment production continued to rise significantly in 2006, notably in the US and in Asia, and especially in South Korea (close to 30% growth). Growth in Europe was below 10%, and much lower still in a number of countries (between 0% and 5% for the UK and Sweden). While all of these countries are back to 2000 production levels, and some have even well exceeded them, the UK stands alone in struggling with a severe decline in production (-40% compared to 2000).

Progress for all segments in the US

In the United States, the rate of production capacity usage suffered a huge blow after the bubble burst in 2001. It has since recovered but appears to now be reaching its ceiling. The recovery was particularly spectacular for telecommunications equipment whose rate of production capacity usage rose from just over 40% at the end of 2002 to more than 80% in 2006, while production levels doubled during that period – getting back to 2000 levels by the end of 2005, and increasing by a further 20% by end of 2006. IT hardware production managed to better stay the course during this time, marking only a slight dip in 2002, and achieving a production output at the end of 2006 that was 40% higher than the level in 2000. Media equipment production has been much more erratic and levels in 2006 were still slightly below those in 2000. Lastly, although only 75% of electronic equipment component production capacity is currently being used, production itself has shot up by more than 250% since 2000.

Japan slipping behind

In South Korea, growth has been the most outstanding for telecommunications equipment production, which rose by 250% between 2000 and 2006, although computer and media hardware production also enjoyed a healthy 40% increase during that time. On the flipside, in Japan only the level of media hardware production has increased over the past few years, while the production volume of computer hardware and especially telecommunications equipment has dropped sharply. Japan and South Korea nevertheless still account for the bulk of world flat screen TV production.

Europe struggling

The situation in Europe is more open-ended but, on the whole, ICT equipment production has recovered at a much less significant rate than in the United States, or even in Japan. Telecommunications equipment production is back on track in Sweden and Finland, thanks to contributions from their home-grown heavyweights, Ericsson and Nokia, but is down in the rest of the region's major markets. France and the UK are both reporting a slight increase in media hardware production while, in France in particular, production volumes dropped sharply in early 2006. All ICT sectors combined, production levels in France have held steady more or less, whereas the British industry has suffered a 40% decline.

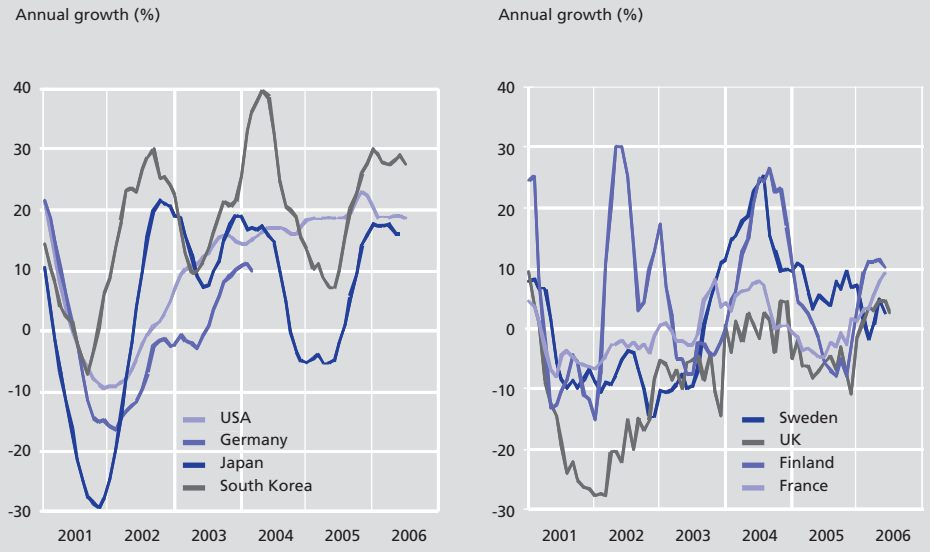
Annual growth of electronic equipment production and sales, 1994-2004

(%)	Radiocommunications	Telecommunications	IT	Other	Total
Western Europe					
Production	7.2	-2.4	1.2	3.4	2.8
Sales	6.1	-1.4	4.3	3.4	3.5
Americas & Asia Pacific					
Production	7.0	-2.0	-0.1	2.2	2.0
Sales	7.0	-0.4	2.5	2.1	2.7

Source OCDE based on Reed Electronics Research

Strong revival in production volumes

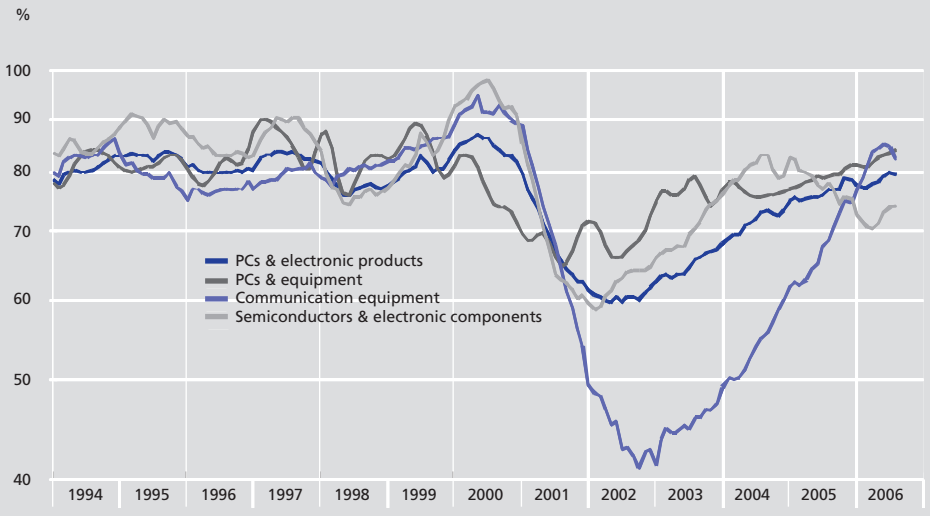
ICT production



Source Rexecode

… but use of production capacity has peaked

Trends in use of ICT production capacity in US



Source Rexecode

DigiWorld markets in the United States

Growth sustained by the general economy

The United States represented close to 30% of the global ICT market in 2006, although the average 4.1% growth last year encompassed sizeable disparities from sector to sector. While the consumer electronics and IT markets are still in good shape, the telecom sector is experiencing much more modest growth.

ICT growth is being sustained by North America's overall healthy momentum, which nonetheless slowed somewhat in 2006. Corporate profit levels and attractive financing terms gave the computer, media services and consumer electronics hardware markets a boost.

Another feature of the North American market, ICT R&D spending is particularly high – greater than in Japan and the European Union combined. Public financing's weight in the equation has been tending to rise since the start of the 2000s, while private R&D spending has been more and more offshore.

Consumer electronics and software performing well

The US continue to dominate the world's software market, boasting a 35% share. The market is still a fragmented one but, following a major wave of consolidations since 2003, a handful of heavyweights has managed to be present in the majority of applications. Microsoft and IBM are battling it out on the middleware and cross-segment applications front, while SAP and Oracle dominateis one of the leaders in the management applications market. As to computer hardware, the lucrative period brought by companies' equipment replacements in 2004 and 2005 seems to be coming to an end.

Meanwhile, the consumer electronics sector reported an 8% increase in 2006, after two years of more than 10% growth.

Upheavals in the telecommunications sector

The telecommunications sector, on the other hand, has suffered a series of blows in recent years, most notably the sharp decline of landline telephony. On the flipside, mobiles are still enjoying steady growth while the broadband market continues to be the stage of a fierce battle between telcos and cable providers. On the whole, the services market is only just holding its own, reporting an average annual growth rate of less than 3% these past three years.

The changes taking place in the market have driven the country's telcos into a series of mergers, which has meant the disappearance of the top long distance carriers and a major reinforcement of the Regional Bell Operating Companies, starting with AT&T (ex SBC) and Verizon.

Evolution of the TV offer

With revenues exceeding 100 billion EUR in 2006, the United States accounts for 40% of the world TV market. The significant rise in revenues (+15%) is due largely to pay-TV which is enjoying an increase in both customer numbers and per-subscriber revenues: more than 90% of TV households in the US now subscribe to a multichannel TV offer. And, although facing stiff competition, the top terrestrial networks still dominate the landscape.

Cable, which supplies 66% of North America's households, is still by far the most popular pay-TV mode, but it is steadily losing ground to satellite (Dish and DirecTV). In addition to forming partnerships with the latter, telcos are becoming more directly involved in the TV market through their ultra-broadband triple play bundles.

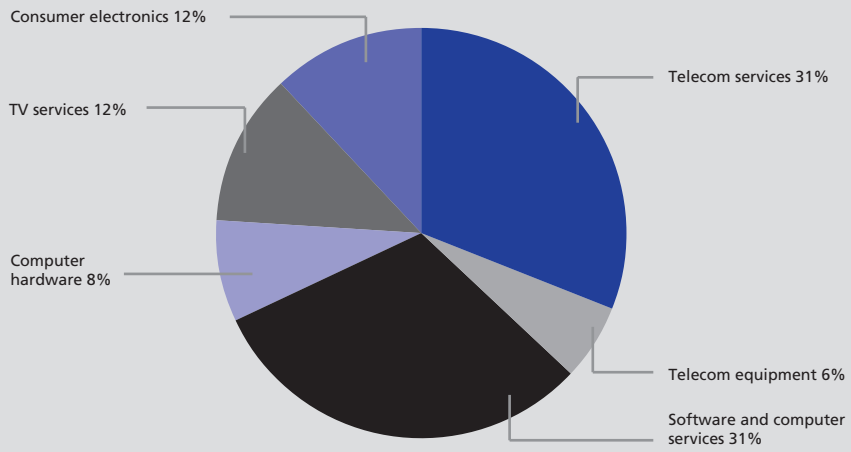
DigiWorld markets in North America

(billion €)	2003	2004	2005	2006	2007
Telecom services	241	248	256	262	268
Telecom equipment	41	47	51	52	57
Software and computer services	229	235	248	258	271
Computer hardware	59	63	66	71	75
TV services	88	95	99	104	109
Consumer electronics	74	81	90	97	103
Total	732	768	810	844	882

Source OECD

Telecom and IT sectors well-balanced

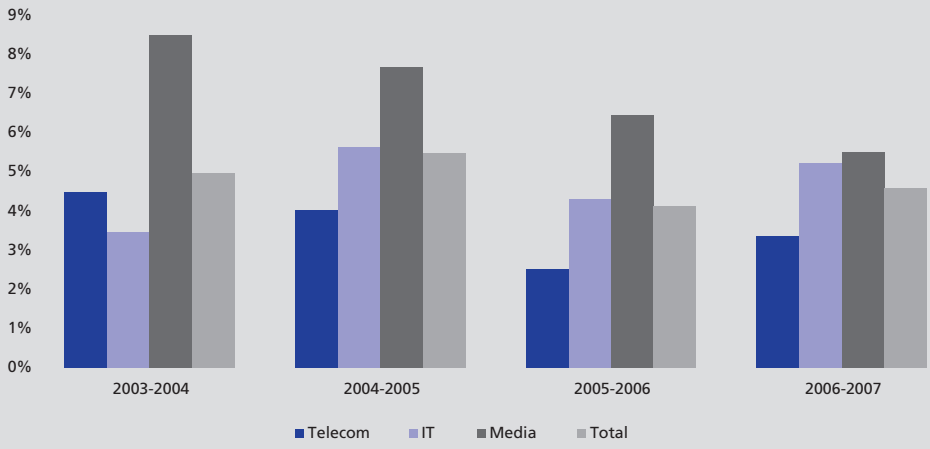
DigiWorld markets in North America in 2006



Source IDATE

Media segment is driving growth

Annual growth by segment in North America



Source IDATE

Market forces balancing act

DigiWorld markets in Europe

With a value estimated at 773 billion EUR in 2006, Europe's ICT market represents 30% of the global total. After the recession in 2001-2002, it is getting back on track after a clear turning point in 2004, and reporting close to 5% growth in 2006.
Europe's ICT policy includes Europe-wide initiatives – essentially defined by the European Union (for example, in June 2005, the European Commission launched the "i2010" initiative, aimed chiefly at digital convergence) – and a host of initiatives in each country, and at regional levels.

Dynamic IT services

After a sharp decline in the early 2000s, at a time of overall economic recession and a bearish market, the information technologies sector started to rebound in 2004: in 2006, services and software market growth, which represented 70% of the IT market, reached close to 6%. Growth in the hardware sector is less spectacular (+2.7% in 2006), but sales volumes in particular are on the up, thanks in part to the steady shift from desktop to laptop computers.
The consumer electronics sector, meanwhile, is growing at a very different rate across Europe, with overall growth for 2006 estimated at 9%. France in particular enjoyed two very good years in 2005 and 2006 (with over 12% growth during the latter), after having long lagged behind the Old Continent's other major markets.

Telecommunications: take-up on up, value growth down

The increase in competition and the already high levels of telecom services take-up has meant a clear decline in growth of the market's value since 2002. Telecoms make a substantial contribution to ICT's development in Europe, not only through its weight in the equation (41% of the region's entire ICT market for services, and close to 50% when factoring in handsets) but also through its impact on the convergence process.
Mobile telephony has reached a degree of saturation, even in a number of Eastern European countries (with the average penetration rate being now over 100%), which naturally reduces growth prospects year after year. In the fixed market, broadband continues to play a huge part in sustaining the momentum: with 85 million subscribers at the end of 2006, there is still considerable room for growth, which has only served to whet the competition's appetite: in addition to ADSL unbundling, the playing field is now expanding into the realm of ultra-broadband.

Fragmented TV economy

Licensing fees still play a large part in Europe's television economy (close to a quarter of a channel's income, all types combined), with terrestrial reception still being the only access mode for over 45% of TV households in 2006. Cable, and especially satellite, are nevertheless making great strides as the digitisation trend has taken hold over the past few years: the number of "digital" households has increased by four times since 2000, and accounted for 30% of TV households at the end of 2006. But, above all, Europe stands out for the progress it has made in digital terrestrial TV, particularly in the UK (where a third of TV households receive DTT) and, to a lesser degree, in Italy, France and Spain.

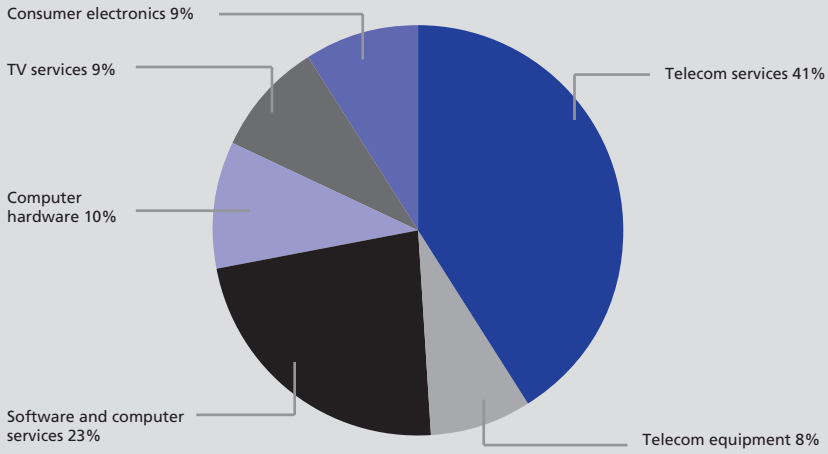
DigiWorld markets in Europe

(billion €)	2003	2004	2005	2006	2007
Telecom services	272	291	306	317	327
Telecom equipment	49	53	57	59	57
Software and computer services	156	161	169	179	190
Computer hardware	73	75	77	79	81
TV services	60	64	67	72	76
Consumer electronics	51	55	61	67	69
Total	660	699	736	773	799

Source OECD

Telecom market still on top

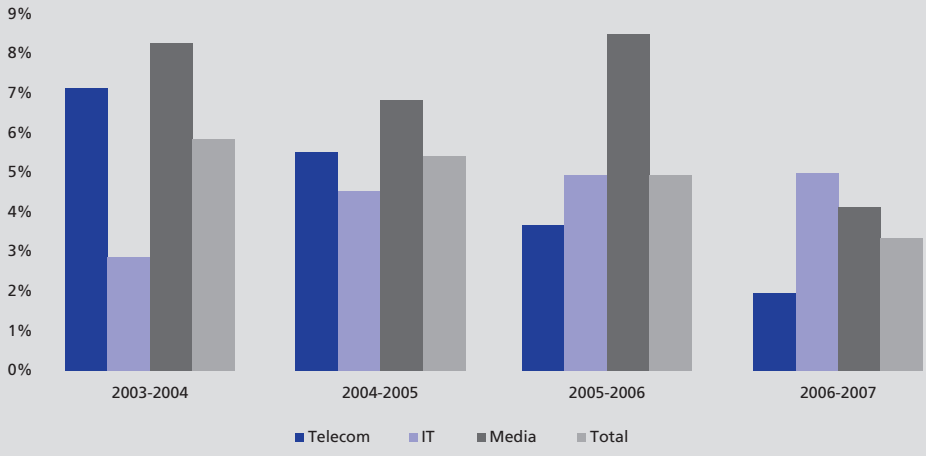
DigiWorld markets in Europe in 2006



Source IDATE

… but losing steam fast

Annual growth by segment in Europe



Source IDATE

Driving force of large emerging countries

DigiWorld markets in Asia-Pacific

Even more than the contrasts between East and West in Europe, the Asia-Pacific region is marked by profound disparities between the market performance of advanced countries (notably Japan and South Korea) and that of emerging countries. The latter's increasing weight in the equation has not only been driving growth for the entire region, but for the whole world market as well. Overall, Asia-Pacific accounted for 28.5% of the world market in 2006, around a point more than in 2003. At the same time, however, Japan – which represents close to half of the regional market's value – lost a point. Viewed from another angle, average annual growth in Japan is just over 1% while growth in the rest of the region has been over 13%, and so single-handedly accounting for a third of worldwide growth between 2003 and 2006.

The Japanese and South Korean laboratories

Despite the weak performance of its domestic market, Japan has a solid lead over a great many industrialised countries in a number of ICT segments, particularly in the telecommunications sector where it boasts the world's largest base of 3G customers: totalling close to 40 million in mid-2006, or more than 40% of the country's mobile subscribers. The same is true of its ultra-broadband market, with NTT's FTTB/FTTH rollouts having connected more than 7 million households. From a more general perspective, the e-Japan project, which was put in place back in 2001, has made Japan one of the most computerised nations in a matter of years. The country also leads the way in HDTV thanks to programmes devoted to digital terrestrial, cable and satellite networks which have been running for several years. South Korea, too, boasts great progress in a number of areas: although a few European countries have since caught up with it, it was long the world's broadband frontrunner and, along with Japan, it still leads the way in ultra-broadband, favouring the use of FTTB/Ethernet LAN and VDSL. As to wireless access, South Korea's home grown version of WiMAX, WiBro technology is starting to be deployed as part of the "ubiquitous Korea" programme.

China and India spurring growth

It is in the region's emerging countries that DigiWorld markets find their chief growth pools. China continues to equip itself at an astonishing pace: in 2006, 75 million new mobile customers came to expand the base, more than in any previous year, while over 15 million new users signed up for broadband access. The country is also home to 130 million pay-TV subscribers. Added to this, China's IT industry is flourishing – home to companies that have become major players on the international stage (Lenovo, Founder Group) – as are its telecommunications (Huawei, ZTE…) and consumer electronics sectors.

The most outstanding fact of 2006 was without doubt the exceptional dynamic of the Indian market, thanks to great strides in IT services (software, call centres) and particularly mobile telecommunications (close to 70 million new cellular customers, virtually doubling the base since last year). This expansion is due in part to recent public initiatives aimed at opening up the country's economy: ICT's development in India was long hampered by a ban on foreign investments and a lack of infrastructures (roads, electrical, telecommunications).

Behind these heavyweights, several countries in South-East Asia (Vietnam, Indonesia, Philippines…) are making a more modest contribution to growth of the region's DigiWorld markets.

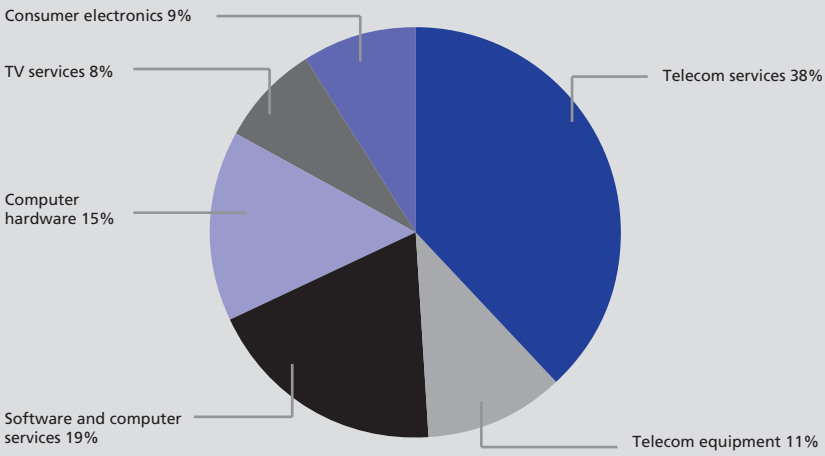
DigiWorld markets in Asia-Pacific

(billion €)	2003	2004	2005	2006	2007
Telecom services	234	250	262	275	295
Telecom equipment	62	74	78	85	89
Software and computer services	116	123	131	141	152
Computer hardware	96	102	107	113	119
TV services	44	48	53	56	59
Consumer electronics	47	52	62	70	77
Total	600	649	693	739	791

Source IDATE

Equipment takes large market share

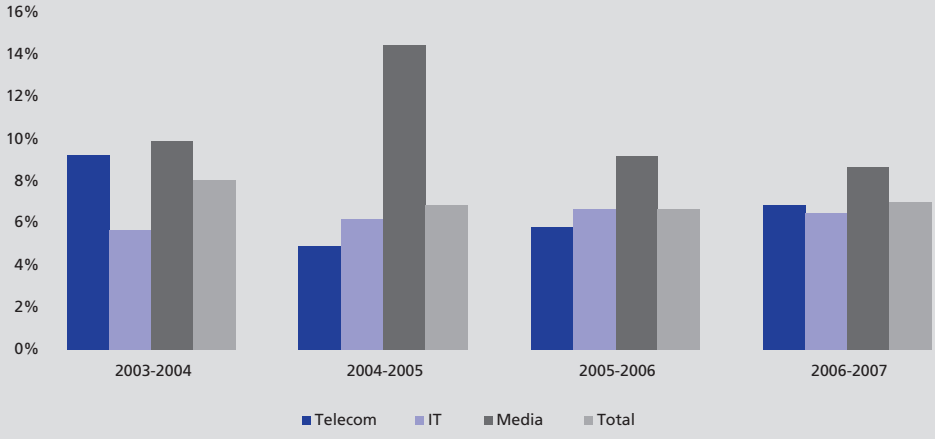
DigiWorld markets in Asia-Pacific in 2006



Source IDATE

New share of growth between segments

Annual growth by segment in Asia-Pacific



Source IDATE

Latin America and Africa-Middle East

DigiWorld markets in Rest of the World

DigiWorld markets in Latin America and Africa-Middle East account for close to 10% of the global market, and are enjoying steady growth which totalled an estimated 12% in 2006.

Strong development in Latin America…

In Latin America, the financial crisis of 2001/2002 has been weathered and the market is back on track, notably in the area of ICT. Digital services, and especially IP, are making great strides in both the business and residential segments. The rollout of new services is nevertheless being hampered by a certain lack of infrastructure and issues of demand solvency. The zone's leading players are particularly active in working to remedy the situation, with telcos' taking a proactive approach to new generations of mobile and fixed internet access, while projects for migrating to digital TV are materialising gradually.

The region still has great potential for growth as access to telecom, telephony and broadband services is still well below the levels found in more advanced zones such as Europe and the United States, and still far from high enough to enable households and business to reap the full benefits of information technologies.

… supported by public policies

In light of this situation, public policies aimed at reducing the digital divide will play a big part in shaping the future, by providing incentives for or accompanying network rollouts, and by encouraging users' demand for and adoption of new offers and technologies, particularly through the creation of e-government services. Private operators, too, will play a big part as they are often the ones responsible for network deployments and upgrades, and for the launch of new services. Public decision-makers have several forms of leverage at hand: subsidy policies via universal service funds, systems for awarding new licences, particularly for wireless networks, and the launch of e-services (government, health, education).

This is also a time of technological choices, including which digital terrestrial broadcasting standard to use, and which alternative telecom networks to deploy to enable access to telephony and increase broadband coverage. And, naturally, regulation will also have a hand in the markets' future: how will new services such as VoIP and triple play bundles be regulated? What regulatory options for unbundling, particularly with respect to tariffs, and for interconnection costs?

Africa-the Middle East, lands of contrast

Over in the Africa-Middle East zones, the contrasts are even more marked, encompassing several very distinct blocs:

- Several advanced countries (South Africa, Israel) where equipment levels are comparable to those found large Western nations,
- North African countries (notably Morocco and Egypt) which began reforms over ten years ago, and whose markets are relatively open,
- Arab Gulf states whose wealth (petrodollars) first enabled the development of sizeable infrastructures, and which is now helping fund investments in international operations,
- And, finally, sub-Saharan African countries which remain the region's "poor relations", home to still very low equipment levels.

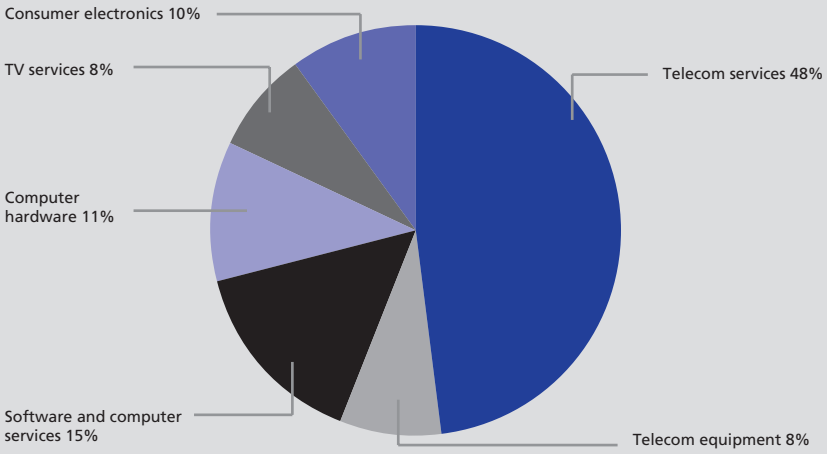
DigiWorld markets in Rest of the World

(billion €)	2003	2004	2005	2006	2007
Telecom services	72	85	101	117	130
Telecom equipment	13	16	18	20	21
Software and computer services	45	31	34	36	39
Computer hardware	29	23	24	26	27
TV services	14	16	18	19	20
Consumer electronics	13	18	22	25	30
Total	186	189	217	243	266

Source IDATE

Telecom services have the lion's share

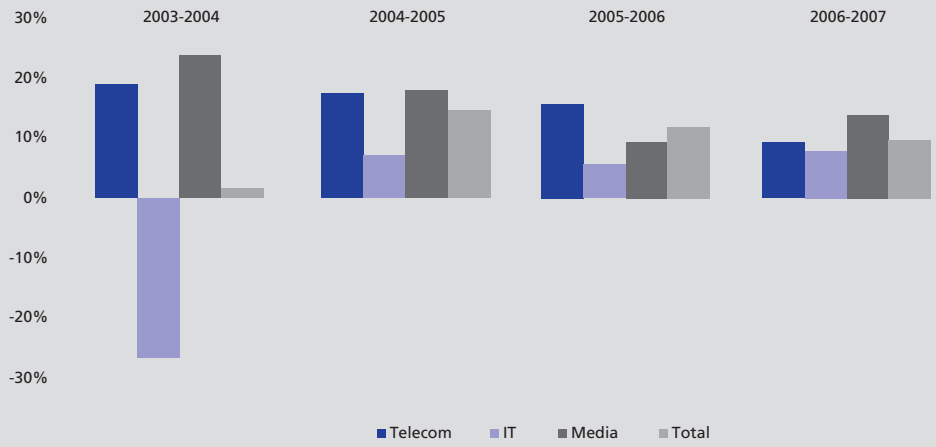
DigiWorld markets in Rest of the World in 2006



Source IDATE

Great disparities in growth

Annual growth by segment in Rest of the World



Source IDATE

II Markets & players

The Digiworld at the crossroads

What a difference 10 years make!

In the previous edition of our Yearbook, our analysis of the markets and players sought to illustrate the process of creative destruction underway in the DigiWorld. 2006 confirmed this trend to a large degree, with the ongoing consolidation of the different segments and the continuing complex interplay of inter-segment alliance and rivalry. Faced with the uncertainties that any form of chaos naturally engenders, it may be reassuring to note that the current state of the DigiWorld bears some resemblance to the state of the telecommunications industry ten years ago. Back in 1995, landline telephony had already reached its current rate of penetration in developed countries, and the internet was still confined to the Anglo-Saxon scientific elite, even if Netscape's IPO that year undoubtedly marked a turning point. The telecom industry was largely national, controlled by incumbent telcos enjoying a virtual monopoly and being supplied by single, vertically-integrated national infrastructure providers (Lucent's predecessor, Bell Labs, was still an AT&T subsidiary). Having to contend with the saturation of its core market (landline calling), the telecommunications sector completely reinvented itself, producing an endogenous growth outlet (cellular telephony), and capitalising on an exogenous innovation (the internet), while undertaking a deep-seated redefinition of its industrial structure.

Now, ten years later, growth crisis, technological challenges and major industry shifts are just as much a reality in the DigiWorld's sectors.

What kind of future?

So what could the DigiWorld's new endogenous growth outlets be? Fibre, with a growing number of announced rollouts the world over, is enjoying real commercial success and, thanks to the applications it enables, could well prove a major disruptive force in the way that society is organised in the most advanced countries (teleworking, home networking, e-government…). Mobile broadband is another credible candidate, presenting as it does the same disruptive potential as fibre, with the added promise of instantaneous ubiquity. Mobile "for the next billion subscribers" could prove another growth outlet for the DigiWorld industry thanks to its tremendous contribution to economic development, even if it would not have the impact of a technological disruption, and its potential economic effects in advanced markets are by no means a foregone conclusion.

And what exogenous innovation could also shape the industry's future? The field here is even wider open and by its very essence uncertain, but high definition TV, nanotechnologies, and progress in autonomous energy production and storage are all areas capable of having an impact on all or part of the DigiWorld, by alleviating certain current physical restrictions and paving the way to new uses.

Financial markets' "short-termism" will not be enough to force the DigiWorld players into ignoring these driving forces of the future, although the rigour that investors impose on the market's players are nonetheless driving them to undertake a shift in their business models in two main directions: external growth and new service-pricing approaches.

External growth: consolidation and acquisitions

The consolidation process begun among telcos in 2005 continued on through this past year, notably in Europe with the NTL/Virgin Mobile mergers. Faced with still dwindling growth in the fixed services market, and the first signs of decline in the mobile segment, a growing number of landline telcos (AT&T and BellSouth), and now mobile ones as well (Sprint and Nextel), are in a race to achieve critical mass. Even more symptomatic of the changing tide, the world's largest mobile operator, Vodafone, is now clearly setting its

sights on emerging markets (Turkey, India) and not hesitating to pull out of mature ones (Belgium, Japan, Switzerland). Although not yet to a significant degree, operators in emerging markets are beginning to make forays onto the international stage (China Mobile's takeover of Bangladesh Telecom) or making global expansion a priority (Orascom), and so foreshadowing the growing role they will be playing in future transnational deals.

More spectacular still were the consequences that these operator mergers and acquisitions have had on the rest of the industry. In 2006, they included major mergers between these telcos' top suppliers (Alcatel-Lucent and Nokia-Siemens) – fully upsetting the production market's existing balances in the span of less than six months. These two newly-expanded companies thus join Ericsson (since its takeover of Marconi) and Cisco – back in the throes of targeted strategic acquisitions (after having digested the major takeover of Scientific Atlanta) – in a small club of diversified players boasting annual sales of over 20 billion USD. Combined with the inexorable ascension of Asian equipment-makers, this upheaval has already spurred once-diversified mid-size companies to refocus on core products (for example Nortel's withdrawal from UMTS), while forcing others to rethink their strategy (NEC, Fujitsu, Motorola). These middleweights are now faced with one of two distinct paths: specialisation and strategic re-centring by pulling out of segments where their market share is meagre, or merging with other players to achieve the new critical mass. Our view is that the competitive pressure now bearing down on these companies is such that most of them will choose one of these two options within the next 18 months.

Always on the lookout for new growth paths, the internet giants (Google, Yahoo! and Microsoft) too have been involved in a steady stream of acquisitions, albeit at a less frantic pace in 2006 (19 compared to 27 in 2005). This is particularly true of Google, despite having got the award for the most ambitious deal the year, namely its takeover of YouTube for 1.65 billion USD (on the heels of eBay's acquisition of Skype in 2005)

New approaches for operators …

The modest growth prospects in most of the DigiWorld's sectors are also forcing companies to explore new approaches to services and pricing. As a result, in 2006 we saw mobile operators gradually tearing down their walled gardens by packaging the most popular internet services (e.g. H3G's X-Series that combines Skype, MSN, Sling, Orb…) or by allowing customers to use their 3G connection in whatever way they want (T-Mobile Web'n'Walk Max), and so positioning themselves clearly as providers of connectivity and no longer of applications. The same holds true in the realm of pricing, with the growing ubiquity of flat rate offers for 3G datacard products (for the business segment), the proliferation of unmetered offers in the consumer segment (2G and 3G), and an exploration of new billing modes (e.g. credit for customers who generate large volumes of incoming calls, such as H3G's Wepay). Nor are landline and integrated operators standing idly by, as more and more are rolling out unified calling offers (T-Mobile@Home) with a single handset and billing applied to an extended radius around the home. These new approaches to service and pricing are going hand in hand with new customer approaches. The commercial success of certain highly targeted MVNOs has revealed the untapped growth potential of more highly segmented offers. In addition, as embodied by the success of BT's Global Services subsidiary, other major telcos such as Belgacom (through its takeover of Telindus) and France Telecom (acquisition of Diwan and Silicomp) are working to offer their corporate customers a broader array of services that combine telecoms and IT.

… and manufacturers

Equipment manufacturers are also re-examining their traditional approaches to infrastructure sales, and now focusing on providing operators with managed services – a business that already accounts for 20% of pioneer Ericsson's sales. But all equipment suppliers are arming themselves with the very specific expertise required for this type of business, by taking control of telcos' infrastructure management teams or through targeted acquisitions. For equipment manufacturers, outsourced infrastructure management would not represent a strictly incremental opportunity to increase sales, since it would be at the expense of hardware sales. It can nevertheless allow them to add new links to their chain of knowledge (supervision, intervention…) and, from a structural standpoint, equip them for a more lasting and strategic relationship with telcos than the tender process currently does. In any event, this opportunity could soon expand and no longer involve just the number three or four operators in mature markets, and go on to become a development model for very high growth areas (as exemplified by India's Barthi) or even for landline telcos (such as Poland's Netia).

New approaches to services and pricing are also being explored in the consumer electronics sector, spurred by the global success of Apple's iPod/iTunes combination – whose borders the Cupertino giant may well seek to expand with its upcoming iPhone – and Nokia has not been shy about announcing experiments with a mobile video service on its new handsets, whose applications dimension would completely by-pass the network operator.

Shrinking growth

DigiWorld markets by sector

With average growth of 5.8%, for a market worth close to 2,600 billion EUR, trends in the DigiWorld's different sectors were relatively homogeneous in 2006 – with the exception of consumer electronics which, at 10%, continues to enjoying an exceptionally healthy growth momentum.

On the whole, growth was down compared to 2005 (+6.6%), as sales in the market's two driving segments (telecommunications equipment and consumer electronics) took a hit, while still remaining quite high. The equipment market as a whole enjoyed a higher rate of growth, in fact, than service markets in 2006.

Steady but declining growth for equipment

In all hardware segments, the peaks tied to renewal cycles or the end of recessions have passed. For telecommunications gear, this peak came in 2004 when operators began investing once again in their networks after several years of cost cutting following the burst of the dotcom bubble: once over the hump, growth was being fuelled chiefly by handsets.

IT hardware began benefiting from businesses' equipment renewals starting in 2004 in the US, and around 12 months later in Europe: growth is now been spurred by companies' and especially consumers' switch to laptop computers. And, finally, consumer electronics enjoyed a 12% increase in sales in 2004, and a 14% increase the following year, as digital devices became a mass market: all the ingredients were still in place for 2006 to be another banner year, though pressure on prices is growing.

Services accounting for two-thirds of growth

Services, on the other hand, continue to make a very substantial contribution to growth. Telecommunications services alone account for close to a third of the increase (48 billion EUR of a total 142 billion EUR), while IT and software services accounted for just over 22%. TV services' more modest contribution (10%) is due to the smaller size of the market: in relative value, however, it reported higher growth than the other two segments in 2006 (+5.8% compared to +5.2% for telecommunications services and +5.4% for IT services). As with equipment, the relative decline in growth for all service segments is due in large part to pressure on prices. Technological advancements and regulatory frameworks are creating a positive market environment for telecommunications services while, over in IT services, the development of solutions based on open source software is opening up the playing field. For now, there seems to be less pressure on TV services, which nonetheless are in danger of eventually losing a portion of their ad revenues to the internet.

NB: The data supplied here are end market figures for each sector and may contain certain double counts in the case of inter-sectoral consumption. We have nonetheless eliminated the possibility of double counts as much as possible in cases where the scope of two sectors overlaps, for example, 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 large international trade.

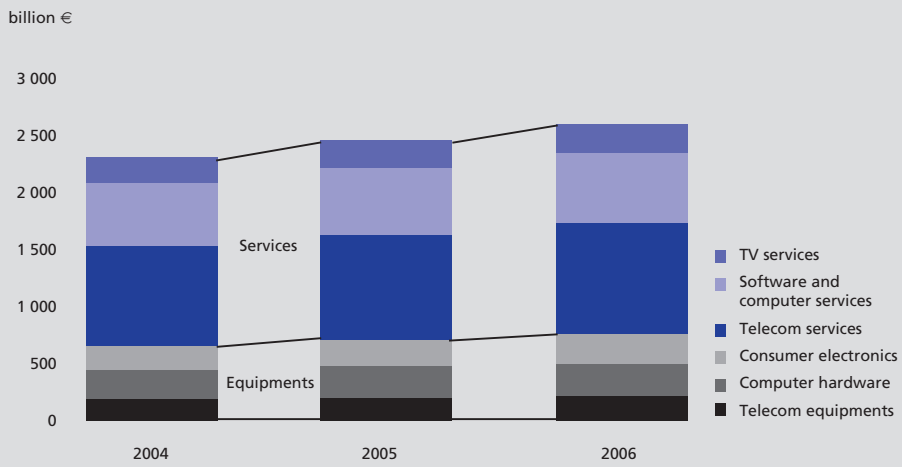
Worldwide DigiWorld markets by sector

(billion €)	2003	2004	2005	2006	2007
Telecom services	819	874	924	971	1 020
Telecom equipment	166	189	204	216	223
Software and computer services	546	550	582	614	652
Computer hardware	258	262	275	288	302
TV services	207	223	236	250	263
Consumer electronics	184	206	235	259	279
Total	2 179	2 304	2 457	2 598	2 739

Source IDATE

Slightly better growth for equipment ...

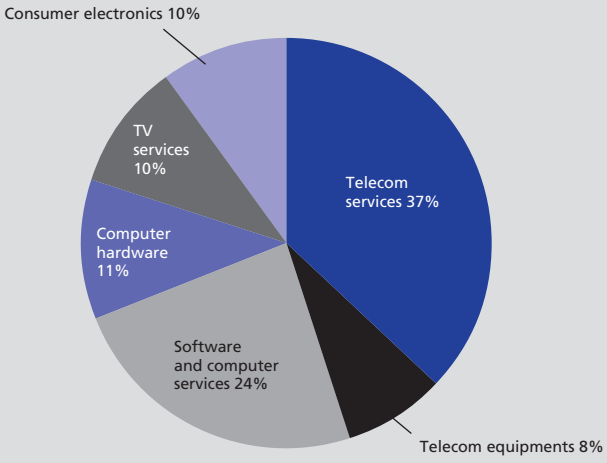
Growth of worldwide DigiWorld markets by sector



Source IDATE

... but services still way ahead

Worldwide DigiWorld markets by sector in 2006



Source IDATE

Slight decline in growth worldwide

Telecom services

By and large, mobile services still drive growth around the globe

After a 5.6% increase in 2005, the world telecommunications services market grew by another 5% in 2006 to exceed 970 billion EUR, with mobile services accounting for more than half (51%) of that rise. While, in the fixed services market, broadband access revenues are compensating more or less for the steady decline of landline calling revenues (an 11.5 billion EUR gain for broadband access versus a 12.3 billion EUR decrease for landline, worldwide), it is mobile services which continue to ensure the bulk of growth (+48.4 billion EUR for 2006).

Developing markets generated 70% of growth in 2005- 2006

Although representing less than 30% of the global market in terms of value, emerging countries accounted for over 70% of worldwide growth over the past two years. Leading the pack is China, making the largest contribution (+11.7 billion EUR in 2005 and 2006, or 10% of total growth), followed by a handful of countries – India, Russia, Turkey and Brazil – each contributing between 4 and 5 billion EUR to growth over the last two years, and by Mexico with 3.5 billion EUR.

In terms of relative value, annual growth in all emerging countries was over 14% these past two years, striking a stunning contrast with the most developed markets, namely Western Europe (+3.1% in 2005 and +2% in 2006), the United States (+3.1% then +2.2%) and, even more so, Japan where growth appears to be negative for 2006.

Advanced markets still very innovative on the technological front…

Despite falling sales, innovation has never been in better shape in mature markets, whether in fixed services or the ubiquity of IP which enables combinations of voice, data and video over the same broadband connection, and in mobile services with prospects of increasingly high quality and diverse services on offer as bitrates increase. But the growing competition that is driving this ingenuity is also weighing on ARPU. Pioneer ultra-broadband services are in many cases being marketed at more or less the same price as current broadband services, if not exactly the same (as has been announced by ISP Free in France). Over in the mobile sector, the migration to 3G appears to be having an only limited impact on ARPU.

… and on the marketing front

Along with these technical innovations, operators are competing more and more with one another in the arena of bundled and fixed-mobile convergence services.

Ultimately, competitive pressures and the development of these various forms of convergence have driven operators into a new wave of mergers and acquisitions, which has been picking up steam since 2004, starting in North America (Sprint Nextel and especially Verizon-MCI and SBC-AT&T-BellSouth) but also on the Old Continent (Telefónica-O2, ntl-Telewest, among others) and in Japan (SoftBank-Vodafone KK). Nor are developing countries being spared the trend: in Latin America with Telefónica and América Móvil/Telmex, Africa and the Middle East with groups such as MTN, Vodacom and Etisalat, and in Asia (Hutchison, SingTel, Telekom Malaysia) massive pan-regional operators are being created.

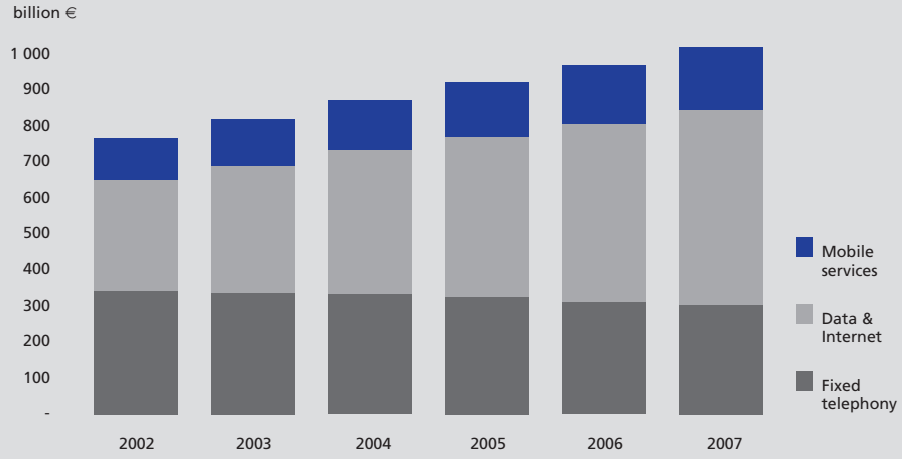
Worldwide telecommunication service markets by region

(billion €)	2002	2003	2004	2005	2006	2007
Europe	254	272	291	306	317	327
European Union	228	242	254	262	268	275
France	31	33	34	35	35	36
Germany	48	49	52	53	53	53
Italy	28	30	32	34	35	35
Spain	18	19	21	23	25	26
United Kingdom	37	39	40	41	42	42
North America	236	241	248	256	262	268
USA	218	222	228	235	240	245
Asia/Pacific	217	234	250	262	275	295
China	39	49	55	61	67	75
Japan	106	108	110	111	109	110
Latin America	38	44	52	60	68	75
Africa/Middle East	24	28	33	40	49	55
Total	769	819	874	924	971	1 020

Source IDATE

Markets

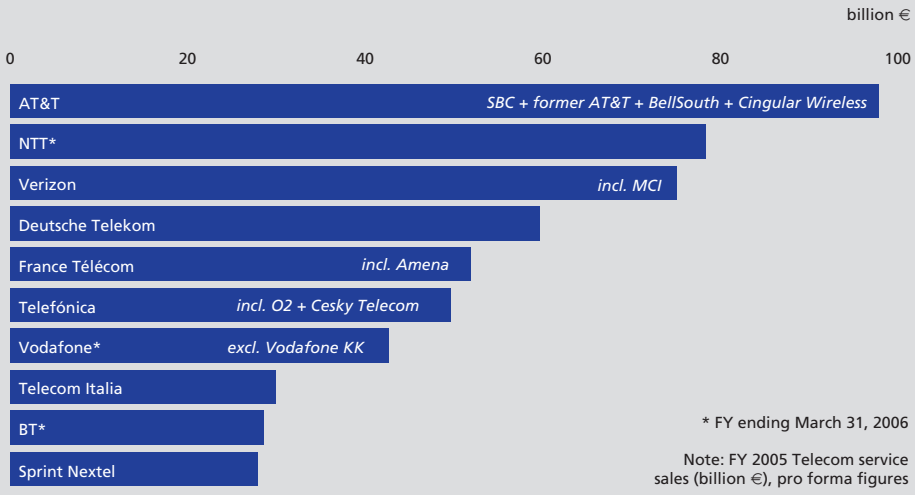
Worldwide telecommunication service markets by segment



Source IDATE

Players

Leading world telecom operators



* FY ending March 31, 2006

Note: FY 2005 Telecom service sales (billion €), pro forma figures

Source IDATE

The year of the big bang

Telecom equipment

The long-awaited recomposition of the telecom equipment landscape finally got underway in 2006. The series of announced M&A is essentially a defensive response to operator consolidation and changes to their investment model, but also to market growth potential now shifting to BRIC economies (Brazil, Russia, India and China). These deals also mark the difference in the issues being faced by equipment-makers enjoying high intrinsic growth (Cisco, Ericsson) which are looking for outlets capable of increasing their momentum, and those equipment manufacturers whose growth is more sluggish (Alcatel-Lucent, Nokia-Siemens) and so seeking out cost synergies.

Changing industry structure

At this time of high market concentration – with the top four players now accounting for 61% of the market, compared to less than 50% in 2004 – and of ongoing healthy growth for Chinese (Huawei, ZTE) and specialised (Tellabs, Juniper, Ciena) equipment suppliers, "intermediate" diversified companies such as Nortel, Motorola, NEC and Fujitsu no longer boast critical mass, and are suffering as a result.

The current situation is therefore not a stable one for the industry. Further major strategic shifts (such as Nortel's bargain basement sale of its UMTS assets to Alcatel) and mergers could well come to pass, involving both medium-size and large IT companies, as the latter are playing an increasing role in supplying leading telcos and now capable of offering new business models based on the sale of solutions and services, rather than equipment.

Still positive but changing investment environment

Telcos' investments continued to climb substantially in 2005 (+7.5%) and 2006 (+7.7%) – begun by landline carriers' revived spending (+6.4%) in 2005, but with growth being driven chiefly by renewed investments in mobile networks (+11%) in 2006.

On the whole, this steady growth is marked by a shift in the momentum to Asia-Pacific and emerging zones, which accounted for more than 75% of increased investments from 2003 to 2006.

Performance in 2006 by segment and what lies ahead

In this favourable environment, the world telecom equipment market grew by 5.8% in 2006, which included a 6.4% increase for mobile handset sales, a 7.6% rise for enterprise network gear and 4.6% growth for network operator equipment.

The most dynamic market segments in 2006 were new mobile and wireless access equipment: close to 80 million new 3G subscribers (UMTS and CDMA EV DO) and 5 million new FTTH and VDSL subscribers came to shore up most telcos' ambitious rollout plans around the globe. On the flipside, the ADSL/ADSL2+ market experienced negative growth for the first time – due to high pressure on per-port prices – despite a positive increase in volume.

The other segments contributing to growth were those linked to IP's growing incorporation into networks, particularly softswitches and media gateways (+20%) and IP core routers (+24%), while fibre optics have confirmed their rebound with 24% growth in the WDM segment.

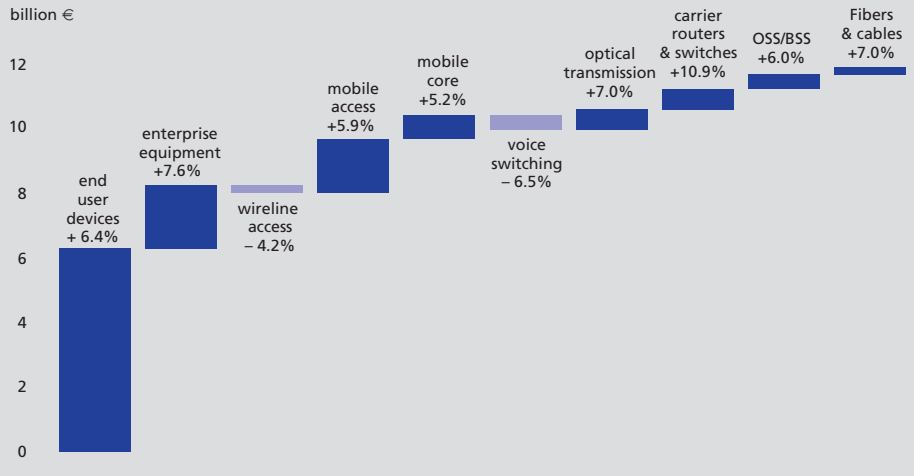
Worldwide telecommunication equipment markets by region

(billion €)	2003	2004	2005	2006	2007
Europe	49	53	57	59	57
France	6	6	6	6	6
Germany	7	7	8	8	8
Italy	6	6	6	7	6
Spain	4	4	4	5	4
United Kingdom	8	9	9	9	9
North America	41	47	51	52	57
USA	37	43	47	48	53
Asia/Pacific	62	74	78	85	89
China	18	22	22	23	24
Japan	20	24	25	26	25
Rest of the World	13	16	18	20	21
Latin America	9	10	11	12	13
Africa/Middle East	4	6	7	8	8
Total	166	189	204	216	223

Source IDATE

Markets

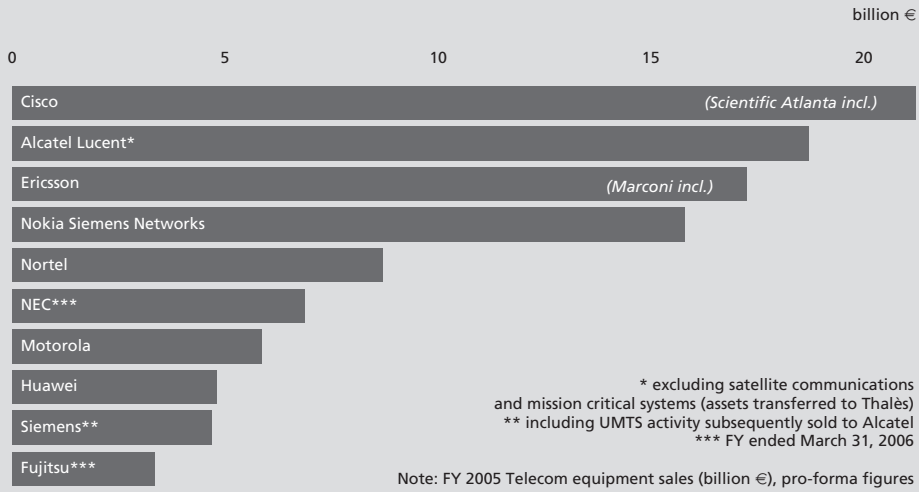
Growth of main telecom equipment market segments, 2005-2006



Source IDATE

Players

Leading world infrastructure suppliers



* excluding satellite communications and mission critical systems (assets transferred to Thalès)
** including UMTS activity subsequently sold to Alcatel
*** FY ended March 31, 2006

Note: FY 2005 Telecom equipment sales (billion €), pro-forma figures

Source IDATE

Revival confirmed

Software and IT services

The worldwide revival of software and IT services market which began in 2005 held steady, and even picked up a little steam in 2006, with average growth of 6.5%, spread out more or less evenly between the two main segments.

Stepped-up investments in application software

More and more, investment monies are being earmarked for adding new functionalities to existing platforms, and to replacing applications at the end of their lifecycle.

An increase in licence purchases, for application software in particular, was observed pretty much across the board in Western Europe – a trend that is even clearer in the United States, despite it being a more mature market. These investments concern adding functionalities to application layers but also, for certain users, replacing existing applications – a trend that will gain momentum over the course of 2006-2007 – as the average lifecycle for applications does not generally exceed 10 years.

"Utilities and systems" licence sales also rose sharply in 2006, albeit with disparities from segment to segment:

- Slowing growth for operating systems, after having stepped up parallel to the renewal of computer equipment. The market is also suffering from the impact of open source, which is weighing on growth.
- Databases too are feeling the effect of the swift rise of the open source model. Revived investments in integrated management software (IMS) and the rapid increase in the volume of data being carried should nonetheless help stimulate this market. • Security is becoming an increasingly critical component in open information systems, and now enjoying a substantial rise in sales as it is being integrated in the different IS layers.
- And, finally SOA – or service-oriented architectures – are enjoying very promising early days. Still fledgling in Europe, pilot projects in the US, particularly in the banking sector, are gaining a solid following.

Among the other segments, CRM is benefiting from a sizeable increase in demand at the tail end of companies' sales operations, while HR and BI experienced more conservative growth of licence sales in 2006, with the bulk of spending being earmarked for functionality integration projects. But HR is expected to enjoy a boost in 2007, thanks in particular to a boom in latecomers getting on board.

Facilities management still fuelling growth

Growth in the facilities management segment depends a great deal on each region's degree of maturity. In mature markets, the United States and most European markets, IT investment priorities and spending strategies appear to have evolved in 2005 and 2006, focusing once again on innovative projects rather than asset rationalisation and cost-cutting measures in the form of outsourcing contracts – despite which facilities management continues to grow at a rate of 8% to 10%.

Facilities management infrastructures are enjoying particularly high growth in Asia-Pacific countries thanks, in part, to the recent introduction of structured offers.

Offshore gaining ground

The use of offshore and low-cost IT expertise is shaping the world's IT services market, although its impact does vary from region to region. According to PAC, in the US, which pioneered the trend, between 10% and 15% of services contracts in 2006 were offshore (Mexico, Canada, India, Philippines…). North American businesses now view the offshore model as just one option among others for development, outsourcing and maintenance, in the same way as on-site services or those performed by a third-party closer to client premises. And the leading Indian service providers are now on par with the market's incumbents (EDS, IBM, Capgemini…).

While lesser in scope in Europe, the phenomenon is swiftly gaining ground: PAC estimates, for instance, that the rate of offshore service contracts for French clients could increase from 3% in 2006 to 5% in 2010.

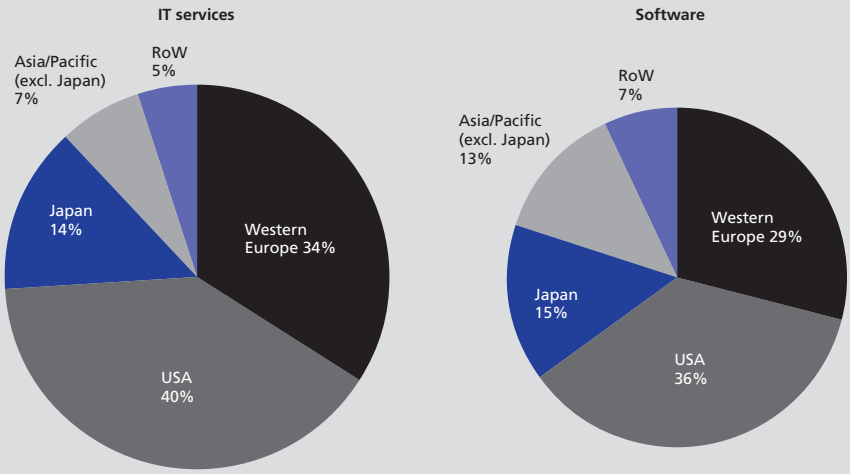
Worldwide IT services and software markets

(billion €)	2002	2003	2004	2005	2006	2007
IT Services	388	370	375	398	424	453
o/w outsourcing	133	133	138	149	161	175
IT Software	167	160	163	173	184	197
o/w application software	85	80	81	87	93	100
Total	555	531	538	571	608	649

Source PAC

Worldwide IT services and software markets

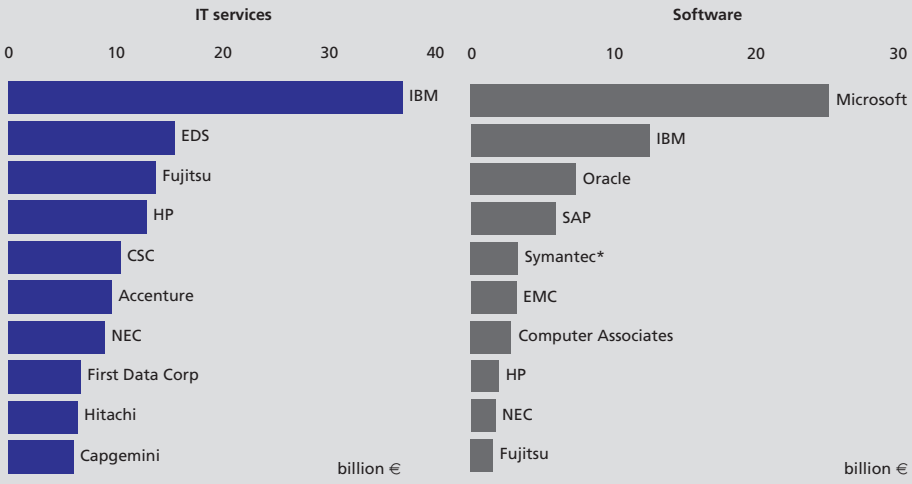
2006 regional market shares



Source PAC

Players

Leading world IT services and software companies



Source IDATE

Losing steam in 2006

Computer equipment

After an automatic increase in 2005, linked to the hardware replacement cycle (already anticipated in the US in 2004), growth slowed once again in 2006 as this replacement phase came to an end. Growth in sales volume dropped sharply in most segments even, albeit to a lesser degree, for laptops.

Laptop sales are enjoying a healthy momentum, even though they are still being outsold by desktop PCs in all of the world's market. But the increase in laptops' life-cycle could eventually hamper growth through its negative impact on the replacement market.

Still high increase in sales volume

In the server market, sales of entry-level and server blades continue to rise in both Western Europe and the US. Infrastructure virtualisation and server consolidation technologies are having a negative effect on the market's growth, particularly in the large systems segment which suffered a sharp decline in 2006. The storage market, too, continues to boast a healthy growth momentum, particularly in Europe, despite the tendency to favour disk storage systems over high-end tape ones. In all segments, however, the healthy rise in sales volume is translating into an only slight increase in value, due to heavy pressure on prices (decreases tied to technological progress and competition, and the growing trend of buying cheaper machines).

US losing weight

The United States still accounts for just over 23% of the world market, but has lost three points since 2000, and hardware orders dropped substantially in 2006. In the PC market, revenues generated by laptop sales continue to rise significantly, even though unit sales numbers are down, as desktop PCs still account for the majority of purchases. On the server side of things, the consolidation trend is still very much a reality in North American businesses, and is having a negative impact on overall growth in the IT hardware market.

European markets still struggling

Growth in Western Europe continues to be meagre (+2.7%), with a few countries such as Spain, Portugal, the Netherlands and the UK driving growth in the region, thanks to economies that are in relatively good shape, and to the development of their information systems markets. France, Scandinavia, Belgium, Austria and Germany are occupying middle ground while Italy is still sulking in the corner. On the whole, mid-market and consumer segments, which were very active in 2005 (with very aggressive marketing and sales campaigns), took a tumble in 2006.

Emerging countries making strides

Representing 37% of the market, the Asia-Pacific zone can be divided into mature markets (Japan, South Korea and Australia in particular) and developing countries. Japan is still the regional leader in terms of IT investments, but could be overtaken by China by 2010.

Asia's IT industry is expected to develop swiftly, particularly in the larger countries that are still lagging behind, and reach maturity within the next few years, albeit without experiencing the artificial growth and subsequent crisis experienced by Western countries during the last cycle (excess equipment, unfettered development, incompatible systems, and the ensuing complexities and burdens). There is no shortage of examples of successful Asia companies and, despite them still trailing behind the Western heavyweights, there is no doubt about their ability to catch up quickly.

Other emerging regions, headed by Latin America, also constitute major sources of potential growth.

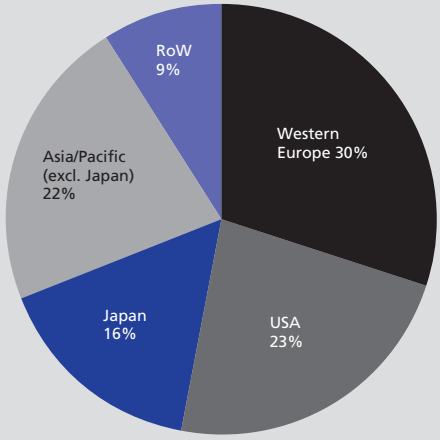
Worldwide IT equipment markets

(billion €)	2002	2003	2004	2005	2006	2007
Server systems and workstations	83	80	80	83	83	85
Desktop PCs	91	82	81	82	83	83
Portable PCs	46	46	47	51	55	59
Peripherals	63	65	66	70	73	76
Total	283	272	273	286	293	303

Source PAC

Worldwide IT equipment markets

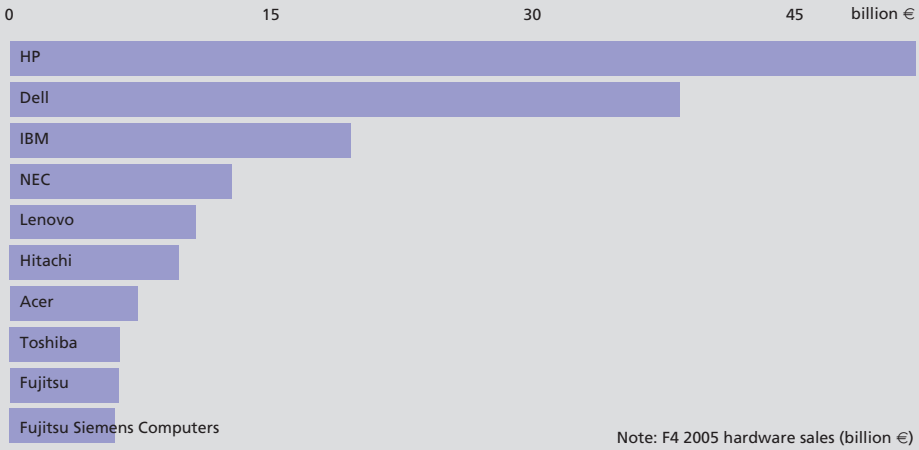
2006 regional market shares



Source PAC

US groups still at the top

Leading world equipment suppliers



Note: F4 2005 hardware sales (billion €)

Source PAC

Bouncing back

TV services

The value of the entire TV services market was estimated at 250 billion EUR in 2006, which indicates a certain revival, with growth estimated at 5.8% for the year, compared to 3.9% in 2005. This increase comes on the heels of several difficult years, with the crisis having reached its peak in 2001/2002.

Revived momentum in advanced markets

The prime beneficiaries of this rebound in 2006 were the world's two largest markets, namely the United States and Europe, which had reported mixed results in 2005.

From a more general perspective, the world's three main markets, the US, Europe and Japan, continue to dominate the landscape, accounting for 80% of worldwide TV revenues, though losing a combined 1% share of the market every year.

Pay-TV revenues are experiencing the highest rate of growth, but advertising is still the sector's financing mode of choice around the globe.

Pay-TV still on the rise…

Of the 1.1 billion households equipped with at least one television, close to 480 million of them were pay-TV subscribers in 2006. Cable remains the most popular platform for multi-channel offers in all regions. This is particularly true in Asia but also to varying degrees around the globe. Satellite is nonetheless enjoying a healthier growth momentum, both in terms of subscribers and in the area of digital TV service distribution. Satellite pay-TV subscribers are in fact growing at a faster pace than cable subscribers, while IPTV's weight in the equation remains marginal worldwide.

The most dynamic zones are:

- Asia, which is reporting a slight dip in pay-TV growth, although remaining high in terms of absolute value. The outlook is good, however, thanks to the expected development of premium offers, notably in India and China.
- Latin America and Africa-Middle East, where there is still a large margin for growth.

… along with digital TV

18% of TV households have now gone digital – a 3.3 point increase over 2005 – though most are still located in the world's largest TV markets, namely the US, Western Europe and Japan.

In some countries, particularly the UK and the US, the switch to digital is becoming an objective that is achievable in the short term

The chief driving force behind the rise of digital, satellite continues to make strides in developing markets, while the world's two largest markets in terms of TV households, namely India and China, are still dragging their heels on digitising their massive cable networks.

American companies' weight in the equation

A ranking of the world's top media companies reveals three things:

- The coexistence of different types of businesses: diversified conglomerates, the largest in terms of size and sales; public TV services and commercial TV groups which are financed by advertising, and pay-TV providers.
- American companies' weight in the equation, occupying the top ten spots in the ranks – explained by the massive size of their home market, as few North American companies have gone international, with a handful of notable exceptions such as News Corp.
- The weight of public TV services, both Japanese and in the major European markets, whose size rivals, or even surpasses, their privately-owned competitors.

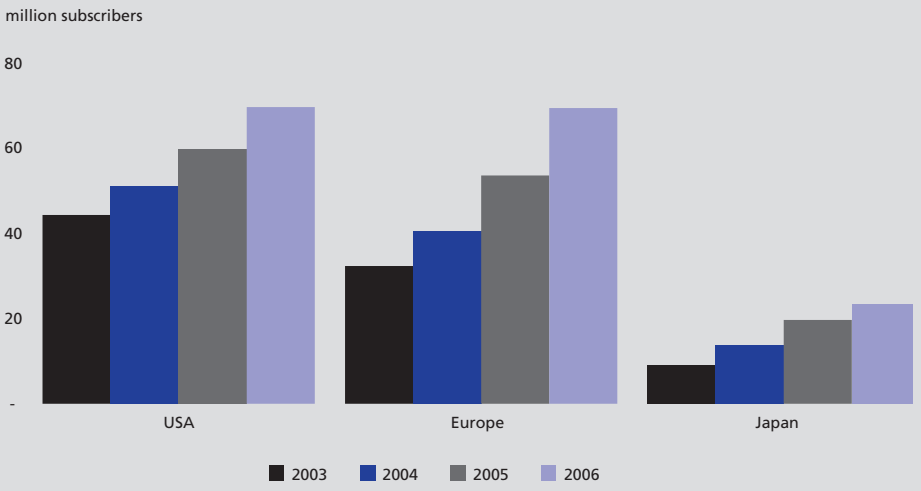
Worldwide TV services markets

(billion €)	2002	2003	2004	2005	2006	2007
North America	84	88	95	99	104	109
USA	81	85	92	96	101	106
Europe	58	60	64	67	72	76
France	8	9	9	9	10	11
Germany	11	11	11	12	12	12
Italy	6	7	8	8	9	10
Spain	4	4	4	5	5	6
United Kingdom	14	14	15	15	17	17
Asia/Pacific	41	44	48	53	56	59
China	4	5	6	7	7	8
Japan	25	26	27	29	29	31
Latin America	11	11	12	13	14	15
Africa/Middle East	3	4	4	4	4	5
Total	197	207	223	236	250	263

Source IDATE

Markets

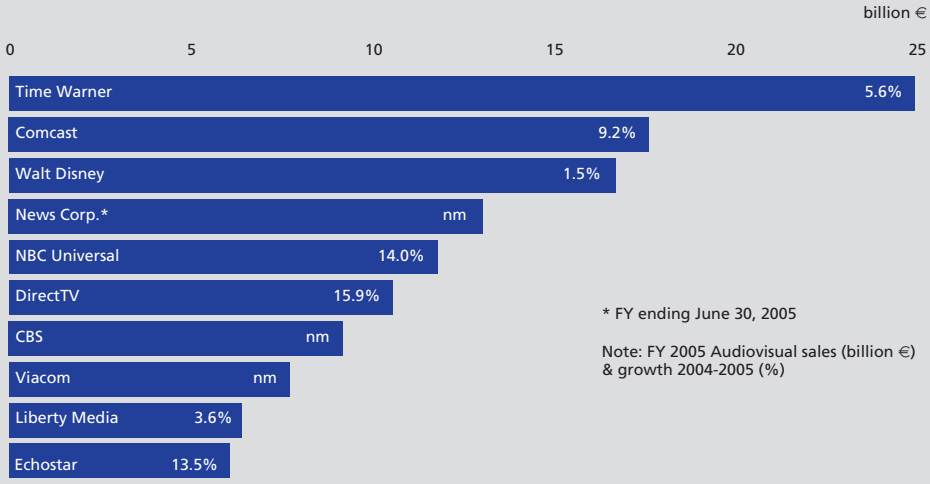
Digital TV subscribers



Source IDATE

Players

Leading world media companies



* FY ending June 30, 2005

Note: FY 2005 Audiovisual sales (billion €) & growth 2004-2005 (%)

Source IDATE

High growth still on the books

Consumer electronics

After the prosperous years 2004 and 2005 (+12% then +14% growth in value worldwide), 2006 proved that the market was still in good shape, even if the momentum is slowing.

Clear drop in all mature markets

Growth in North America dropped from +11% to +8%. Among the segments that continue to spur that market, television sales – and flat-screen TVs in particular – were up by over 15%, while video game hardware got a massive boost thanks to the release of new generation consoles late in the year.

These two segments are driving the European market as well (+57% for flat screen TVs and +38% for video game consoles), which grew by just over 9% overall, and by 18% for digital products alone. MP3 players make up the third most powerful growth driver (+17%), while sales of analogue products dropped by more than 10%. The UK is the region's largest market, accounting for 25% of its value in 2006 (14.8 billion EUR of a total 59.6 billion EUR), ahead of Germany (13.1 billion EUR, or 22%) and France (10 billion EUR, or 17%).

Growth pools in emerging markets

Over in Asia, the trend is still one of contrast between advanced markets, such as Japan where the CE market's value dropped by 5%, and developing markets such as China and India (over 20% annual growth) which remain very dynamic. Asia is also a major production area – after a setback in 2005, Japan's industry is back on track (+6.2% increase in national production in 2006) – and, especially, a major exporter. Targeting low-income markets in particular, Chinese manufacturers are also gaining ground.

From a strictly industrial standpoint, Asian firms continue to dominate the world stage, heading the ranks in the highest growth markets. In the flat screen TV segment, for instance, Japanese and South Korean companies (Samsung, Sharp, Sony, LG Electronics, Panasonic, Hitachi…) have a lock on the market while, in the video game console segment, the two Japanese heavyweights (Sony and Nintendo) are still boasting great potential, even if Microsoft did gain a slight edge in 2006 by getting a jump on the release of its rivals' new console releases.

The market is also being occupied more and more by players from related sectors, namely IT and telecommunications, as befits the two overriding trends which are transforming the consumer electronics industry: digitisation and mobility. Convergence is now manifesting itself through multi-functional devices: mobile camera-phones, Wi-Fi enabled MP3 players….

The price factor

As it is in most other DigiWorld sectors, these various trends (technological convergence, increased competition, shift to mass markets) mean growing pressure on prices. In the most dynamic sector, namely flat screen TVs, the volume of sales rose by close to 130% in 2005 and 100% in 2006, but was far from being matched by the rise in value which totalled just over 50% a year. Studies conducted on the North American market reveal that the average price of a plasma TV dropped by more than 15% in 2005 and again by close to 10% in 2006. Coupled with this is the impact of a market shift to smaller screens, which are hundreds of dollars cheaper, although HDTV sales are now on the rise.

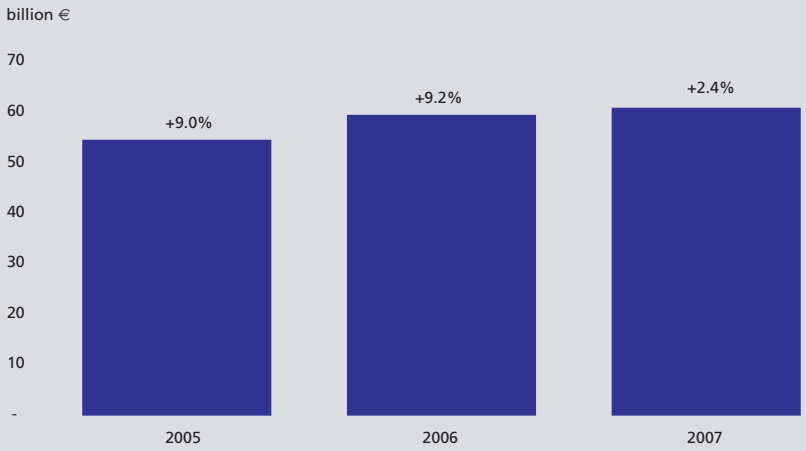
Global shipments of flat screen TVs

(million units)	2004	2005	2006	2007	2008
LCD	8.3	19.0	38.0	57.0	74.1
Plasma (PDP)	2.2	5.0	9.0	11.7	14.0
Total	10.5	24.0	47.0	68.7	88.1

Source IDATE based on multiple sources

The consumer electronics market in Western Europe

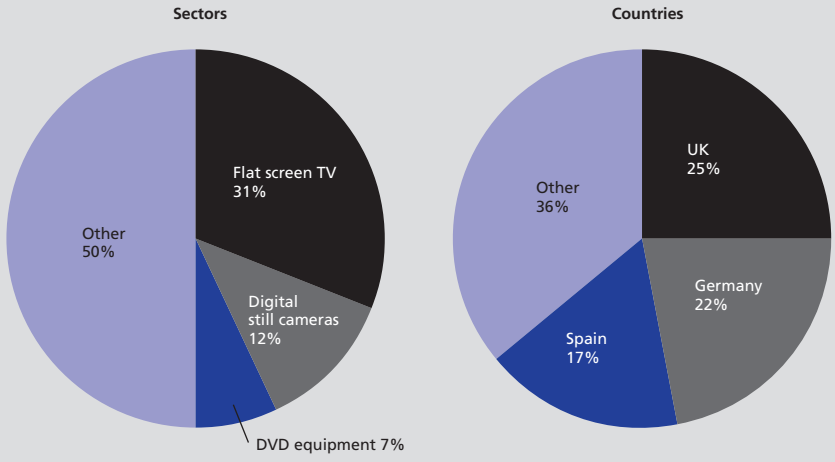
Market trends, 2005-2007



Source EITO/GfK

The consumer electronics market in Western Europe

Markets by segment and by country in 2006



Source EITO

The internet titans

With the exception of Microsoft, the internet titans are all players that came on the scene with electronic communication, search and content services, which have since gained a mass following. They have now grown into global-scale players, with cases in point that include Google, eBay, Yahoo! and MSN, while some players are applying the same recipe on a local scale, notably in the US (AOL, MySpace) and particularly in Asia (Sina, QQ, Naver, Nate/Cyworld).

The internet titans' success relies on flourishing virtuous models…

In a matter of years, the internet's heavyweights became key entities for both telecom and media players, as partners and in some case competitors, but also for investors. At a time when most markets are losing steam, they are reporting consistently stunning growth rates of close to 30% a year (+71% for Google). Their current rosy health and future prospects are making them the darlings of the stock market (PER of 30 to 40, up to 160 for Baidu, China's leading search engine).

To achieve this, with the exception of the rare direct monetisation model (QQ, Cyworld), the top internet companies operate business models based on intermediation (eBay) or, more usually, advertising. They are the prime beneficiaries of an online advertising market that is growing by close to 25% a year, sustained by the web's increasing ubiquity in homes (penetration and time spent online).

And the future is looking good for this market, thanks in part to the current imbalance between the time users spend browsing the web and the proportion of advertising budgets being allocated to it (close to 20% of time spent versus 5% of advertising budgets earmarked for the internet). The web also offers advertisers tools with greater appeal than other media in terms of interactivity, and is already the most popular medium with the younger generations. The diversification of online advertising formats, including sponsored links in recent years, has also enabled the creation of a market that is attracting new advertisers who many not be interested in the old formats.

… at the heart of thriving online technical and marketing innovation

These various developments in the arena of advertising and intermediation are nevertheless benefiting only the heavyweights, capable of attracting enough advertisers or vendors. As a result, the internet titans are developing an aggregation strategy built around a core service, offering free (or low-cost) secondary services with high appeal which allow them to maintain or even build their audience.

They are thus diversifying their offer by replicating existing services with a proven track record, and adapted to their revenue model (mass distribution, long time spent online), by emulating not only their online rivals, but in some cases services marketed by telcos (VoIP, VOD). Take-up of the services born of this diversification is often somewhat limited, due to high switching costs (identifier, community's central import with IM), or the high cost of certain services (Wi-Fi access, phone to PC calls) which cannot be offered for free given the still meagre advertising income they generate (less than 1 USD a month per active users for the largest internet companies).

The internet titans are also innovating with new products, as embodied by Web 2.0, such as sharing services, social networks, human search (for example Yahoo! Answers) and satellite imaging (such as Google Earth), either via proprietary developments or through their string of acquisitions in recent years (Yahoo!-Flickr, Google-YouTube).

In addition to reinforcing the current model, the goal of these new services is to develop new intermediation markets (PayPal, SkypeOut) and especially new advertising formats (mobile, local via maps, video, click-to-call…), which are more appealing to some advertisers (notably local). But not all of the internet giants' innovative efforts are being devoted to new services, as they are also working to develop new advertising tools delivering more streamlined segmentation and contextualisation, and gradually extending their advertising systems into radio (Google/dMarc), video games (Microsoft/Massive) and the press (Yahoo! and Google partnerships).

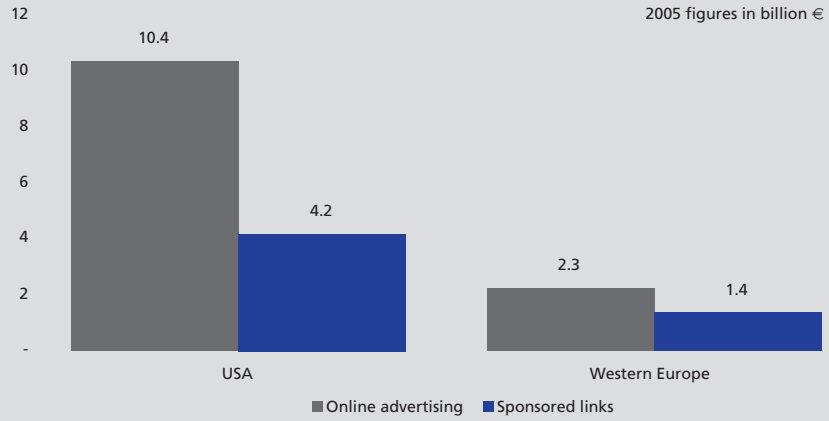
Market valuation of major internet companies (end 2006)

Internet player	Market capitalisation (billion €)	PER
Microsoft	233	23x
Google	119	53x
eBay	35	43x
Yahoo!	29	33x
Sina	1	40x

Source IDATE

Diversification of online advertising

Sponsored links are now the prime online advertising



Source IAB

Acquisitions of major internet companies

Just some of the hundreds of acquisitions in the last two years

Acquiror	Target	Activity of target
Google	YouTube	Video sharing and streaming
Yahoo!	Flickr	Photo sharing
Microsoft	Massive	Advertising inventory in video games
eBay	Skype	VoIP softphone
Google	Keyhole	Imaging satellite
Google	Blogger	Blog platform
Yahoo!	Del.icio.us	Bookmark sharing
Yahoo!	Konfabulator	Widgets
AOL	Truveo	Video search
eBay	Eachnet	Auctions in China
Yahoo!	Kelkoo	Shopping comparison
AOL	Xdrive	Online storage
Microsoft	FolderShare	Remote access and synchronisation (integration in IM)

Source IDATE

III Access

A new approach to the business of telecom operator

Growing user base without value creation

Although the world telecommunications market is growing only slightly in value, the volume of traffic and users is increasing at a steady pace, even in industrialised countries.

There were 276 million broadband customers on the planet at the end of 2006, a 29 per cent increase over 2005 and an eightfold increase in five years – with over two-thirds of these users located in mature markets. Meanwhile, the world's mobile subscriber base numbers more than 2.6 billion (+460 million in 2006) but, in this case, two-thirds of the users are located in emerging markets which are making by far the greatest contribution to growth (more than 85 per cent).

In both cases, however, this substantial increase in users is running parallel to significant pressure on prices, and on ARPU in particular. In the fixed market, with the increasingly ubiquitous flat rate and with IP enabling ever-lower costs for applications (notably telephony), broadband's pre-existing services have created a void that providers are struggling to fill – added to the irreversible demise of landline calling created by increasing use of mobiles. In developed markets, growth of the mobile user base is going by way of small spenders (being targeted by MVNOs in particular) and by promoting multi-equipment (single user with several handsets and invoices). In emerging countries, meanwhile, growth of the user base is leading inexorably to declining ARPU.

Infrastructure-controlled markets…

Having control over the infrastructure has long been one of telcos' chief assets, at a time of increasing competition over prices. Landline telcos are relying more and more on the connections they own outright or over which they have full control (unbundled access), giving them greater room to manoeuvre when designing attractive bundles, whereas operators with no infrastructure of their own are losing ground and gradually falling by the wayside (Tiscali, AOL, Tele2). Competition in the mobile market is less fierce, due to the limited number of licences awarded, but the arrival of MVNOs on the scene (particularly in northern Europe and in the US) and of new players with 3G licences (3, Yoigo, One…) is starting to stir up the pot.

…being undermined by technological progress and regulatory changes

This strategy of working to gain control over infrastructure is nonetheless coming up against certain technological developments, particularly on new access networks (FTTx, BWA, DVB-H) which are providing newcomers with increasing opportunities to bypass incumbent players.

In a number of cases, regulation too is undermining incumbents' strategies by promoting access to existing infrastructures to stimulate competition, and infrastructure sharing, notably in rural areas, to help step up the market's development. Gaining access to the incumbent's local copper loop is achieved through unbundling, a process which could be extended to ultra-broadband networks in some countries, or can even be managed by an entirely separate entity (BT Openreach). A number of regulators have also demanded that MVNOs be allowed to develop, in some cases as a prerequisite to opening up the fixed-mobile convergence market. They are also working to revive the mobile market through number portability and by awarding new 3G licences (or old licences that were never awarded).

Telecom ecosystems revamped by new approaches to products and customers

The development of technological standards around IP and digital (formats, network standards) is accelerating the 'modularisation' of the high-tech economy, thus opening

doors for new entrants. They no longer need to develop an entire solution on their own as they now have the option of simply assembling other providers' products. Along with the drop in production costs is a drop in telecom distribution costs, enabled by the proliferation of affordable access networks and excess capacity on fixed backbones.

As a result, a great many players are taking advantage of the lowered entry barriers to join the telecom fray by drawing on their respective assets (such as internet service usage, rights to content, IT expertise or distribution network).

From an industrial and competition standpoint, however, this growing market fragmentation is being countervailed by economies of scale and size which regularly trigger supply-side consolidations: generalist operators taking over specialised operators, mergers between equal or complementary operators … After a rather quiet period, mergers and acquisitions were back making headlines in 2005 and 2006. The telecom industry thus has to contend with a more fragmented competition landscape, as a host of players can now survive financially in the market by targeting potentially lucrative niche segments. These specialised players are able to promote products, in some cases non-telecom ones, and undertake distribution strategies more tailored to different market segments. This is particularly true for the long-overlooked lower end of the scale, by offering basic and/or discount services, or innovative services at the upper end of the market, itself not fully tapped. This increased segmentation is also being embraced through new consumption patterns – the trend of increasing individualisation in society having made its way to the telecom market in the form of clear divisions in habits and attitudes between the different segments of the population (such as the young and not so young, ethnicities, technophiles) and in the growing trend of personalisation (such as logos and ringtones, choice of devices or avatars)..

A necessary evolution of business models

As a result, telcos have to adapt to this new paradigm of reduced production and distribution costs. They are gradually switching to unmetered and semi-unmetered flat rate offers for voice and data, on both landline and cellular networks. At the same time, they are focusing their efforts on gradually enhancing their service bundles with new features, in some cases offered for free, in their bid to secure customer loyalty.

As these abundant offers become more commonplace, vendors are naturally required to seek out new sources of revenue, sometimes by emulating new entrants' models whose purely telecom objectives are in some cases rather cursory. These new actors' desire to forge themselves a place in the telecom sector is also giving wholesale markets a boost, particularly with MVNOs whose data requirements can be increasingly demanding (speeds, quality of service, etc.).

However, there are also opportunities for carriers beyond providing telecom access, by capitalising on their digital product distribution (content, communication services) and financial intermediation capacities. A great many vendors are indeed interested in telecom access as a platform for distributing their services – services which can also provide good sales arguments for telcos' connectivity, for example unlimited mobile data offers for applications such as e-mail and instant messaging.

Some operators also have their eye on advertising revenues, a model which other players have already exploited successfully (internet giants, media groups). So we may see proprietary developments, along with collaboration with advertising specialists and their existing systems, involving revenue sharing

on services financed by advertising and/or providing advertisers with more streamlined user profiles (consumption patterns, location). But advertising alone can only provide slim financing for telecom services.

Telcos face critical choices over future business

Having to contend with these many changes, telcos are gradually developing a new approach to their business which, up until now, has been centred on three interrelated activities: managing network infrastructures, developing products and services for end users, CRM and marketing management. The proliferation of services on offer and the sharp rise of the user base are cutting the cost of interaction between these three business areas, which can thus be exercised independently depending on the market situation. However, there need to be specialised players on hand to fill in the gaps.

Maintaining a strong relationship between these three sectors is proving all the more difficult, given that each operates according to somewhat different principles and objectives. Infrastructure generally requires massive investments over the long term, with the prime objective of operational efficiency. Product development relies on technological or marketing ingenuity, the goal being to create products with distinctive pricing or features over the medium term. Meanwhile, marketing's goal is to optimise distribution channels through usually short-term initiatives (sales rotation, promotions, targeting), generally via points of sale (in some cases electronic), a CRM system and billing capabilities.

So, telcos are faced with tough and choices over each of their traditional business areas, each one demanding a response to several key questions: Which infrastructures (network technology, fixed, mobile, backbone, local loop) to deploy? What line of product and services (telecom, non-telecom) to offer? How to develop them (proprietary, co-branded, open standard)? Which target market (end users, resellers, mass market, niche market)? And, ultimately, what should the business of telecom operator encompass?

Market being shaken up by mobile and VoIP

Fixed telephony

The number of main lines is shrinking in all mature markets…

The number of main phone lines has increased annually by an average 4% worldwide since 2002, to reach over 1.2 billion at the end of 2006. The rise in the number of phone lines in developing countries (+10% a year) has compensated for the steady decline in industrialised nations (-2% a year). The significant drop in the number of access lines in the US since 2002 is a trend that has since taken hold in all industrialised countries. This has meant a drop in traffic on landline networks which, combined with ongoing pressure on retail prices, has resulted in a decline in landline calling revenues for telcos.

This decline of landline calling is due in large part to the growing popularity of mobile services over the past ten years: in industrialised nations, more than 10% of households are now equipped only with a mobile phone. Meanwhile, in developing countries, in many cases mobile services have provided a response to telecommunications needs which, up until then, had not been met by the existing landline infrastructures.

Furthermore, the growing ubiquity of broadband, especially DSL, has also led to the cancellation of a great many subscriptions for second lines, particularly in the United States.

… but growing unevenly in developing countries…

Among developing economies, fixed telephony growth is particularly high in China (38 million additional lines in 2005, representing 90% of the net phone line increase worldwide), and holding steady in India (+4%). In both of these countries, the increase is due in part to the rise of limited-range cordless services (such as DECT and PHS).

Although it has shrunk, the disparity in teledensity between industrialised and developing countries is still substantial: an average 12 lines per 100 inhabitants in developing countries, compared to 46 lines per 100 inhabitants in industrialised countries, with equipment levels being particularly low in sub-Saharan Africa (2% on average) and in the Indian sub-continent (under 5%).

… as IP telephony is gaining ground

At the end of 2006, there were over 50 million VoIP subscribers in industrialised countries. An average 25% of all broadband subscribers use IP telephony services, compared to 12% one year earlier. With a base of 14 million VoIP subscribers as of June 2006, or close to two-thirds of all broadband subscribers, Japan has a strong lead in terms of both market size and IP telephony take-up – a lead which is due to high broadband penetration and relatively expensive landline calling tariffs.

France, too, ranks high in the VoIP market, with a base of close to 5 million subscribers in mid-2006. In the United States, the leading VoIP providers are Vonage, an independent supplier, and the cablecos. Meanwhile, in developing and in some industrialised countries, a great many governments still impose restrictions on IP telephony use to protect the incumbent carrier's monopoly, although a few, such as South Africa and Kenya, have opted to legalise VoIP.

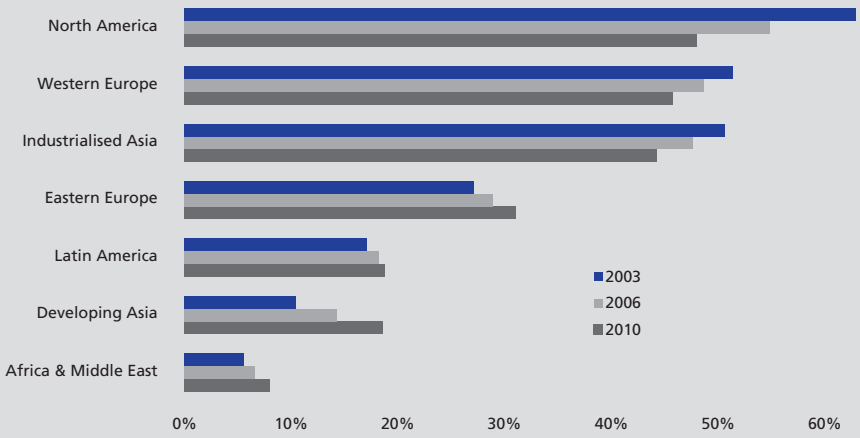
Fixed lines, worldwide

(million)	2003	2004	2005	2006	2010
Western Europe	203	200	196	193	183
France	34	34	33	33	31
Germany	40	39	39	38	36
Italy	28	27	27	26	25
Spain	18	18	18	17	16
United Kingdom	35	34	33	32	30
North America	203	198	191	182	165
USA	183	178	171	162	145
Asia/Pacific	459	518	560	596	763
China	263	312	350	380	525
Japan	60	59	55	53	45
Rest of the World	243	254	266	273	311
Central and Eastern Europe	100	102	104	106	114
Latin America	89	93	97	99	107
Africa/Middle East	54	59	65	68	91
Total	1 108	1 170	1 213	1 244	1 422

Source IDATE

Teledensity of fixed lines, by region

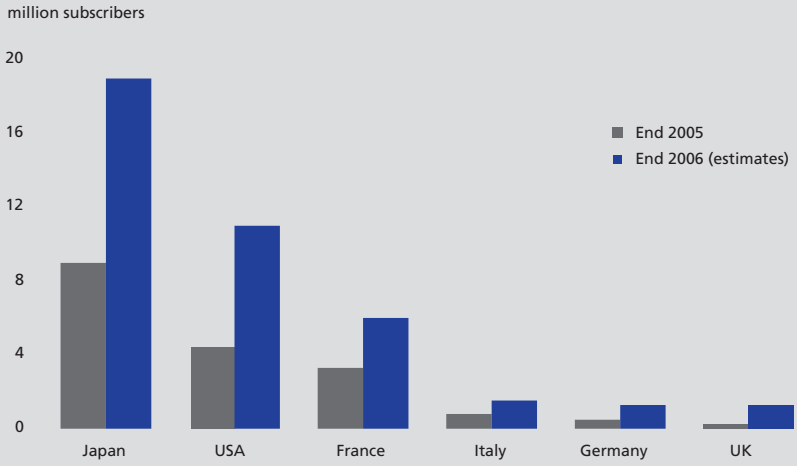
Fixed line access as % of population



Source IDATE

Main VoIP markets in industrialised countries

VoIP subscribers in selected countries



Source IDATE

Swift growth

Broadband access markets

The world's broadband user base exceeded the 200 million mark in 2005, and the market continued to grow swiftly in 2006 – estimated to reach 276 million subscribers at the end of 2006.

Broadband's growing ubiquity…

With 50 million subscribers in June 2006 (or 17% of the population), the United States is home to the world's largest broadband user base, while Asia's industrialised countries lead the way in terms of penetration, reporting an average 20% density in mid-2006. Western Europe, meanwhile, is closing the gap with the US (lagging behind in density by only 0.5 points, compared to 3.5 points at the end of 2003) and with industrialised Asian nations (3 points behind, compared to 7 at the end of 2003).

Broadband development in Europe still varies considerably from country to country. With a density close to 30%, the Netherlands and Denmark have now overtaken the long-time broadband reference country, South Korea. Outside of Northern Europe, broadband density varies between 10% and 20%.

High-speed access is also making strides in developing countries, even though the average density is still very low (less than 2%). The most outstanding progress is being made in Latin America, China, Malaysia and a great many Eastern European countries, while also developing steadily in several African and Middle Eastern nations.

… driven by DSL and pioneer forays for FTTx…

DSL has reaffirmed its role as the chief driving force behind broadband growth, even in the United States which stands out for being one of the only markets dominated by cable – a singularity explained by cable networks' exceptional coverage and the presence of heavyweights (Comcast, TWC) in the market. We are also starting to see significant FTTx rollouts in the US, spurred by the lifting of unbundling obligations.

In Europe, DSL enjoys solid dominance of all broadband markets, even in the Netherlands and the UK where cable modem long accounted for the majority of connections. In a number of countries, including France, Germany and Italy, DSL has always had solid control of the market, with competition being enabled essentially by unbundling, while a number of telcos are starting to announce ultra-broadband rollout plans.

Meanwhile, in Japan and South Korea DSL is already losing steam as more and more users switch to very high-speed FTTx/Ethernet LAN connections: in mid-2006, Japan was home to more than 6 million FTTx subscribers, accounting for 26% of all broadband connections, while DSL figures were stagnating. In South Korea, where cable has a larger share of the pie, FTTx growth is even more marked than in Japan, and DSL connections have been on a downwards slide since early 2005.

… at an increasingly affordable price

After having dropped sharply, broadband access prices have remained relatively unchanged in the major markets since 2005 but access speeds have been rising steadily, as has the number of services to choose from. If users in Asia-Pacific enjoy the lowest access prices in the world, particularly given the bitrates on offer (Japan), tariffs in Europe are very competitive, particularly in France, the Netherlands and Sweden.

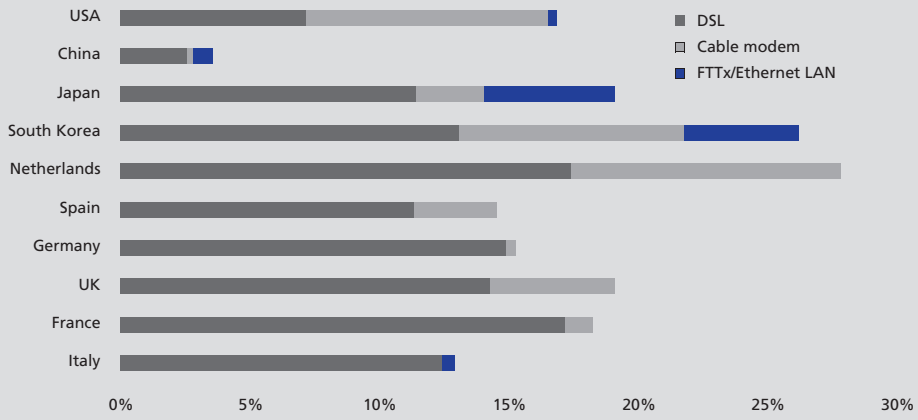
Broadband subscribers, worldwide

(million)	2003	2004	2005	2006	2010
Western Europe	24	40	58	73	111
France	4	7	9	12	18
Germany	5	7	11	13	22
Italy	2	4	6	9	14
Spain	2	3	5	7	11
United Kingdom	3	6	10	13	17
North America	31	41	51	62	101
USA	26	36	45	55	89
Asia/Pacific	43	65	87	112	220
China	12	27	41	58	123
Japan	14	19	22	27	40
Rest of the World	4	10	18	29	104
Central and Eastern Europe	1	3	7	12	31
Latin America	3	5	8	14	53
Africa/Middle East	1	2	3	4	20
Total	102	156	215	276	535

Source IDATE

Broadband equipment, worldwide

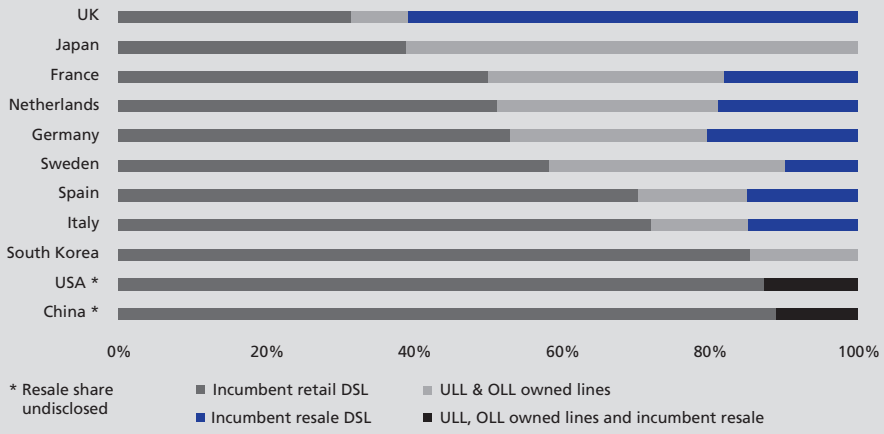
Broadband access as % of population, by technology (mid-2006)



Source IDATE

Ungrouping, the European way

DSL access by origin (%, mid-2006)



Source IDATE

Migration to 3G

Mobile services markets

Mobile subscriber numbers continue to skyrocket…

The world's mobile subscriber customers base overstepped the 2 billion mark in 2005, with growth in 2006 estimated to be over 20% once again – resulting in a worldwide base of 2.6 billion mobile subscribers customers at the end of the year, of which two-thirds are located in developing countries.

Mobile subscriber customer numbers in industrialised countries continue to rise at a steady pace (close to 10% in 2005, and 8% in 2006), despite already high penetration (an average 86% of the population at the end of 2005). However, the market's growing saturation has already meant shrinking subscriber customer growth in several countries and regions (Taiwan, Hong Kong, Singapore and Scandinavia).

Meanwhile, developing countries are enjoying swift growth, with mobile services boasting especially high rates of increase in the major emerging markets of Asia (China, India, Indonesia), Latin America (Brazil, Colombia), Europe (Russia, Ukraine, Turkey) and Africa (South Africa, Algeria, Nigeria).

… but mobile ARPU still dropping …

The drop in mobile tariffs which has accompanied the market's massive surge has led to a sizeable drop in mobile ARPU in developing markets over the past few years. In industrialised countries with a mature mobile market, mobile ARPU began to decline in 2005-2006 after holding steady from 2002 to 2004.

The drop in average revenues per user in Western Europe is due not only to the decrease in fixed to-mobile call termination tariffs, but also to the growing popularity of MVNOs' low-cost offers in Northern Europe, to operator 3's entry into several markets and, more generally, to the impact of growing competition on calling prices.

The trend of declining mobile ARPU is more longstanding and more pronounced in industrialised Asian countries and is particularly acute in Japan, even though it remains one of the highest in the world, thanks particularly to high data ARPU. The situation in the United States is somewhat different, to a degree because of the fact that the American mobile market developed much later than in Japan and Europe, so the increase in data revenues has made it possible to compensate for the drop in voice service revenues.

… as 3G takes hold, particularly in Asia

With 54 million customers in June 2006 (which 29 million in Japan and 11 million in South Korea), Asia-Pacific is home to half of the world's 3G subscribers. Over 40 per cent of mobile subscribers in Japan own a 3G handset.

In Europe, most operators have launched a 3G offer, but subscribers are switching very slowly (only 9 >per cent owned a 3G handset in mid-2006) so operators are struggling to capitalise on the new service, despite the successive rollouts of EDGE, UMTS and, most recently, HSDPA.

In the US, 3G is getting off the ground thanks to investments made by Cingular Wireless and Verizon Wireless in particular, and its development is expected to be given a further boost by the new frequency allocations that took place in autumn 2006 (notably for T-Mobile).

In developing countries, a handful of operators have made the move to 3G (for example South Africa and Morocco) but their business model appears less solid.

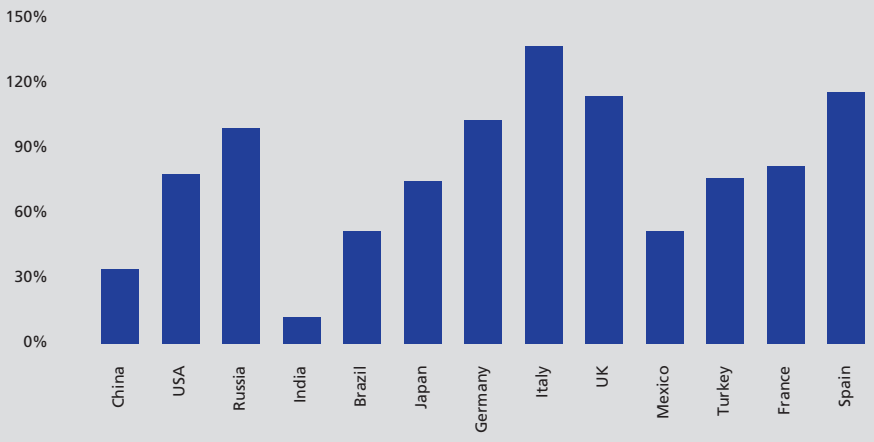
Mobile subscribers, worldwide

(million)	2003	2004	2005	2006	2010
Western Europe	336	367	404	432	478
France	40	43	46	50	60
Germany	65	71	79	85	91
Italy	57	63	72	80	90
Spain	38	39	43	47	52
United Kingdom	54	62	68	69	74
North America	172	197	225	251	325
USA	159	182	208	233	297
Asia/Pacific	552	667	816	1 041	1 774
China	269	318	374	450	770
Japan	80	86	90	96	116
Rest of the World	328	472	697	877	1 216
Central and Eastern Europe	129	189	286	337	392
Latin America	120	168	227	286	391
Africa/Middle East	79	114	185	254	433
Total	1 387	1 703	2 142	2 602	3 793

Source IDATE

Teledensity of mobiles, worldwide

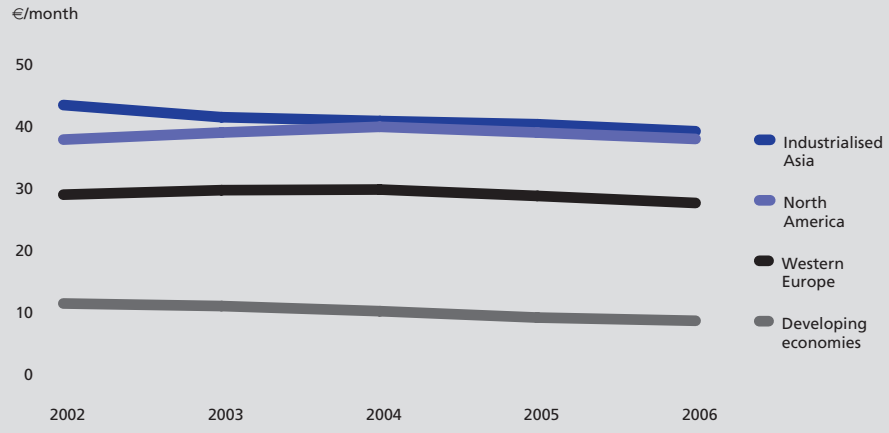
Mobile customers as % of population in major world markets



Source IDATE

Mobile operators still under strong pressure

Mobile ARPU by region



Source IDATE

Telecom services market: competition landscape

Market concentration confirmed

Local copper loop controlled by incumbent carriers…

At a time when their share of the landline calling market has been on a downward slide, incumbent carriers still enjoy very solid control of local loop access. In the United States, the RBOCs control more than 80% of main phone lines. In most European countries alternative telcos' share of lines is under 10%, although unbundling and subscription resale have enabled them to make strides in recent months. Finally, in Japan incumbent NTT is gradually losing market share, decreasing from virtually 100% at the end of 2003, to 94% at the end of 2005.

… while competition in the broadband market is developing unevenly…

In all national broadband access markets, the growth of the number of connections being marketed has been closely bound up with the inexorable rise of competition, which has nonetheless developed in very different ways. The United States, for instance, stands out for the fierce competition that still exists between cablecos and telcos. In Europe, national market structures vary depending on cable's weight in the equation, aggressiveness of the incumbent's marketing strategy, and wholesale DSL and unbundling tariff levels. Little used before 2003, unbundling has become a major part of alternative DSL providers' growth strategies, even if LLU adoption still varies considerably from country to country.

In Japan, shared access tariffs are very low (1 EUR/month), and the ability to access unbundled dark fibre for connecting to exchanges has enabled alternative operators to make great strides in the DSL market.

… and heating up in the mobile services market…

In most countries, with the notable exception of the UK, the mobile market is still structured around a small number of players, with the incumbent's mobile arm still the market leader.

In saturated markets competition is stimulated by the arrival of newcomers and, in some cases, by the growing use of number portability, which makes it easier for users to switch operators. The arrival of operator 3 in several markets triggered another round of price wars, in the same way that MVNOs have often had a direct impact on calling prices in Northern Europe. Now, landline telcos' entry in to the market with an eye on delivering fixed-mobile convergence could stir up the pot even more.

Over in Japan, it is NTT and KDDI which are vying for dominance of the 3G market, with competition expected to heat up even further following SoftBank's takeover of Vodafone's Japanese subsidiary, and the arrival of several new entrants in 2007.

… and so transforming industry structures

At a time when competition is becoming increasingly fierce and revenue growth is slowing, telcos are working to achieve critical mass by taking control of other operators. These takeovers are often part of a strategy centred around bundled services and fixed-mobile convergence.

The current wave of mergers and acquisitions which began in 2004 is altering the structure of national markets. In the United States, the mega-mergers of 2005-2006 led to a virtually full reconstruction of the former AT&T, which had been dismantled in 2004. In Japan, Softbank, which began competing with NTT in the broadband access market, has now entered the landline and mobile calling markets through its takeover of Japan Telecom and Vodafone KK.

Meanwhile, in Europe, the leading telcos are working to consolidate their positions in key markets, which has led to the takeover of a number of medium-size operators. Major restructurings have also taken place in cable markets around the globe, involving mergers between cablecos seeking to increase their footprint and their investment capacities.

Nor have emerging markets been spared the trend of consolidation and international expansion. In Latin America, over two-thirds of mobile subscribers are now Telefónica or América Móvil customers, while in Africa and, to a lesser degree, Asia we have witnessed the emergence of pan-regional operators (Vodacom, MTC, MTN, Celtel in Africa; Hutchison, SingTel, Telekom Malaysia in Asia).

Major telecom mergers and acquisitions

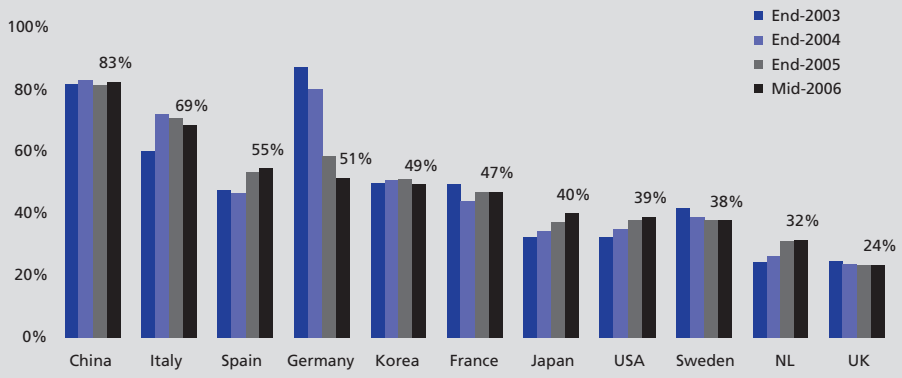
Buyer	Operator acquired	Amount (in billion €)
AT&T (USA)	BellSouth (USA)	54.0
Telefónica (Spain)	O2 (UK)	24.0
SoftBank (Japan)	Vodafone KK (Japan)	12.5
Nordic Telephone Company (USA/UK)	TDC (Denmark)	10.2
NTL (UK)	Telewest (UK)	5.0
MTN (South Africa)	Investcom (Lebanon)	4.4
Vodafone Group (UK)	Telsim (Turkey)	3.7
Sprint Nextel (USA)	Alamosa (USA)	2.7

Note: since October 2005

Source IDATE

Competition in broadband access

Share of legacy operators in broadband access retail market

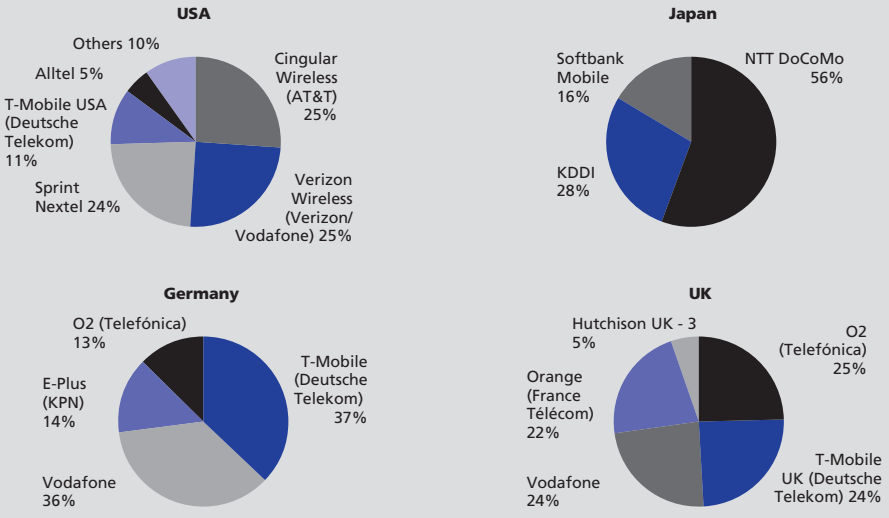


Note: Market share for China includes China Telecom and China Netcom. For the US, market share for the RBOCs is cumulated.

Source IDATE

Competition on mobile market

Market shares of mobile network operators in main industrialised countries (mid-2006)



Note: MVNOs are present in the market. Their subscriber bases are included in their host MNO's market share.

Source IDATE

Momentum growing around FTTx and WiMAX

Telecom infrastructure: new rollouts

While working to improve their existing infrastructures (EDGE, HSDPA, ADSL2+), telcos are also deploying new networks to distinguish themselves from the competition and to offer more services.

Operators banking on FTTx to deliver higher fixed network speeds…

The copper network's limitations have spurred a revived interest in ultra-broadband, and in FTTx (fibre) in particular, which is capable of delivering ever higher and symmetrical speeds that enable new services (HDTV) and simultaneous usage inside the home.

Asia is still the pioneer here, thanks to large-scale rollouts by Japan's and South Korea's incumbents and thanks to government support. In mid-2006, Japan was home to the largest FTTx user base in the world (6.4 million subscribers), followed by South Korea (2.2 million subscribers), and in both countries more users are now signing up for FTTx rather than for DSL.

The situation in the United States is being driven by the involvement of RBOCs Verizon and AT&T, both of which are banking on FTTx technologies – not not subject to unbundling obligations – to be able to better compete with the country's cablecos. As of mid-2006, there were 940,000 FTTx subscribers in the US.

In Europe, meanwhile, the situation varies a great deal from country to country, with a total of 757,000 FTTx subscribers in mid-2006, of which 92% are concentrated in four countries: Sweden, Italy, the Netherlands and Denmark. There have been very few fibre-optic rollouts in the rest of Europe, many of them having been on the initiative of local authorities. But incumbent carriers are becoming more and more involved and announcing large-scale plans (Deutsche Telekom, France Telecom), despite lingering uncertainties over future fibre unbundling regulations.

Aside from regulatory incentives, government support and certain favourable geographical conditions (high urban density), the future of FTTx depends chiefly on the ability to optimise rollout costs, and particularly civil engineering which is by far the largest cost item. As a result, several cost-cutting measures are possible, such as sharing existing infrastructures (sewers, underground lines), aerial deployments or making existing ducts available.

… and WiMAX for lower-cost mobile networks

A great many market players expect that demand for wireless internet access will begin to rise. Of course, mobile cellular technologies (UMTS, CDMA…) are already present in the market, and will continue to dominate it in the coming years. Nevertheless, several alternatives (WiMAX, Flash OFDM, I-Burst) are also taking up a position, with dedicated data transmission solutions (delivering real bitrates of 1 to 2 Mbps, both fixed and mobile) and attractive deployment costs for those with spectrum licences.

Of the newcomers, WiMAX boasts the best-developed ecosystem, switching gradually from a fixed to a mobile standard. The world's leading equipment suppliers are in fact focusing their efforts on mobile solutions, and the largest deployments being announced are based on the mobile standard (Sprint Nextel in the US and KT in South Korea).

Fixed WiMAX is used chiefly to provide broadband access in areas which are poorly served by landline solutions (rural zones in developed countries and suburban zones in emerging countries). Mobile WiMAX, which has not yet been deployed except in South Korea, is expected to be used for supplying mobile access to the web in densely-populated areas, acting as a complement or a rival to cellular networks.

WiMAX's ultimate development will depend especially on spectrum availability and on the large-scale development of an infrastructure and handset offer, notably with the technology's systematic integration in Intel platforms.

There have been very few fixed WiMAX rollouts in Europe, due in large part to the lack of available spectrum in the 2.5 GHz frequency band. The situation is expected to evolve in the coming years.

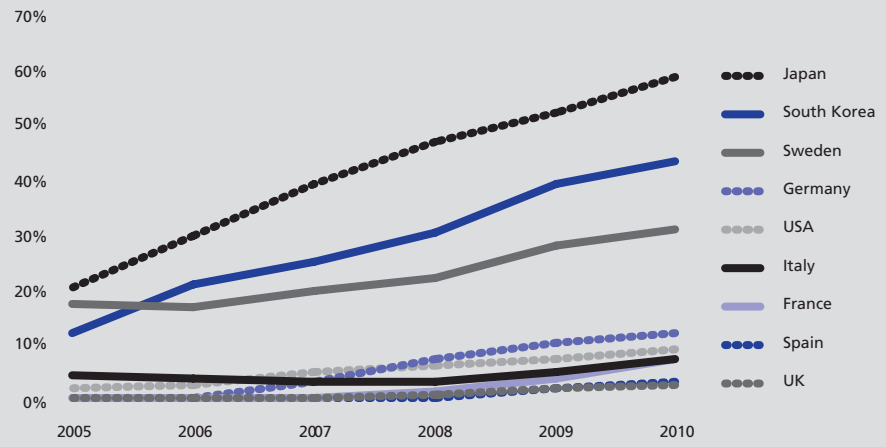
FTTx subscribers, worldwide

(thousand)		2004	2005	2006	2010
Western Europe	France	0	0.8	1	1 307
	Germany	0.2	0.4	13	2 871
	Italy	198.9	317	365	950
	Netherlands	49	60	75	226
	Spain	0	0	2	347
	Sweden	240	321	410	880
	United Kingdom	0	0	4	743
North America	USA	69	858	1 400	8 000
Asia/Pacific	South Korea	1 061	1 620	2 858	6 345
	Japan	2 432	4 640	7 798	20 509

Source IDATE

FTTx development is very uneven

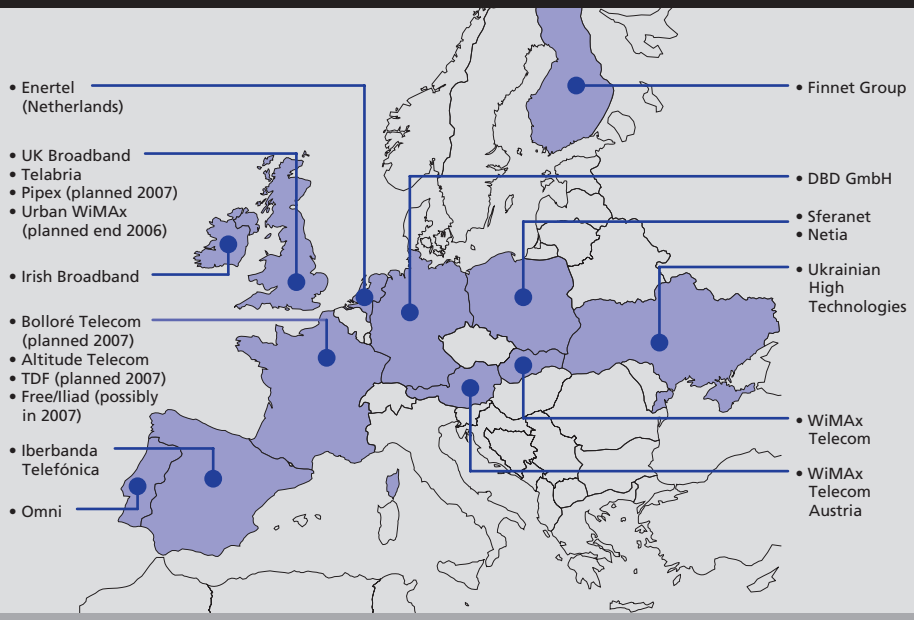
Market share of FTTx in broadband access technologies



Source IDATE

Fixed WiMAX rollouts in Europe

WiMAX operators



Source IDATE

Products and services: expanding the telecom portfolio

Bundles' growing weight in the equation

Having to contend with increasing competition, fixed and mobile telecom operators have sought new growth outlets inside the telecom industry, in their bid to offset shrinking sales in their core business area.

Bundling strategies now a foregone conclusion for fixed providers…

Relying on upgraded infrastructures (digitised cable) and new technologies (IPTV, Voice over IP) landline telcos are now in a position to market triple play bundles (telephony, internet access and TV), in many cases through a single device (box) installed in the home and generally fully specified. As a result, vendors from various backgrounds are now going head to head in the consumer market.

Service bundles have become a key element in operators' strategies, even if a variety of approaches is involved, ranging from pick and mix (FastWeb) to a single offer for all (Free). Operators are regularly enhancing their bundles with new features, sometimes offered for free, in their drive to attract new customers or secure the loyalty of existing ones and, naturally, to generate new revenues with the paid options.

Aside from the purely technological innovations involved in new services (videophony, HDTV, interactive TV, storage) and new devices (equipping the box with a PVR, Media Centre), operators are also introducing innovative pricing schemes that provide a further incentive to subscribe. As a result, a number of players are offering unlimited national fixed calls and full unbundling at no extra charge, while the most advanced among them are even offering unmetered international calling (ISPs in France, Vonage) or free VoD (Comcast).

But these strategies are not paying off systematically. While the double play appears to be gradually becoming a ubiquitous choice among consumers, the triple play is struggling to take off. TV over DSL is having to compete with already well-developed pay-TV markets (cable, satellite) and more recent free to air digital terrestrial. So the economic future of IPTV, which consumes much more bandwidth than VoIP, is still very much up in the air.

… and gradually extending into the fixed-mobile convergence market

Landline telcos are now adding mobile to the mix, to be able eventually to market a quadruple play bundle. If integrated operators are naturally in a good position thanks to their mobile subsidiaries, other fixed providers are relying on MVNO (cablecos in the US) or co-branding (Vodafone-FastWeb, UPC-One) agreements, while others are working to become integrated operators via acquisitions (SoftBbank in Japan, Orange in Spain) or by investing in unbundling (Mobistar).

We are also seeing a growing number of initiatives focused on convergent devices (UMA, SIP) that incorporate Wi-Fi, with home zone offers (reduced rates for Wi-Fi calls from the home), but the vast majority of players are focusing on fixed-mobile bundles. Without really taking on the quadruple play (with the exception of cablecos), they are concentrating on providing fixed-mobile calling offers, taking advantage of the network effect (termination savings for on-net), and more and more on a combination of fixed Internet access, in some cases with naked DSL, and mobile telephony.

A number of cellular-only operators, meanwhile, are working to provide incentives for users to switch from landline to mobile calling, offering large volume formulas (3 in the UK), unmetered calling (Bouygues Telecom) or preferential rates (same network, same community). Others, such as O2's Genion, are proving successful in reproducing the home zone approach, without the technological component. Most, however (Vodafone, O2), are gearing their energies to providing fixed-mobile bundles acting as an FVNO.

All operators are setting their sights beyond fixed-mobile access, with convergent communication (IM) and entertainment (access to content) services, as a means of differentiating themselves and, if possible, of generating added revenues thanks to increased data traffic and paid services and, possibly, advertising revenues. However, some services' implementation will not, be achievable at a reasonable cost without the deployment of new technologies, hence certain operators' growing interest in NGN and IMS.

Recent steps in building fixed-mobile network

Company	Country	Fixed network	Wireless network
Iliad	France	Free	Altitude Telecom (WiMAx)
SoftBank	Japan	Yahoo! BB	Vodafone KK
TeliaSonera	Denmark	Telia Networks	Telia Mobile (ex Orange Danemark)
Telenor	Denmark	Cibercity	Sonofon
Telenor	Sweden	B2, Glocalnet	Telenor Mobile, Vodafone Sweden
France Télécom	Belgium	Mobistar (unbundling)	Mobistar
France Télécom	Spain	Orange (ex Wanadoo)	Amena
Telefónica	United Kingdom	Be	O2
Telefónica	Germany	Telefónica Deutschland	O2
Deutsche Telekom	Austria	Tele.ring	T-Mobile

Source IDATE

Who's where in triple play

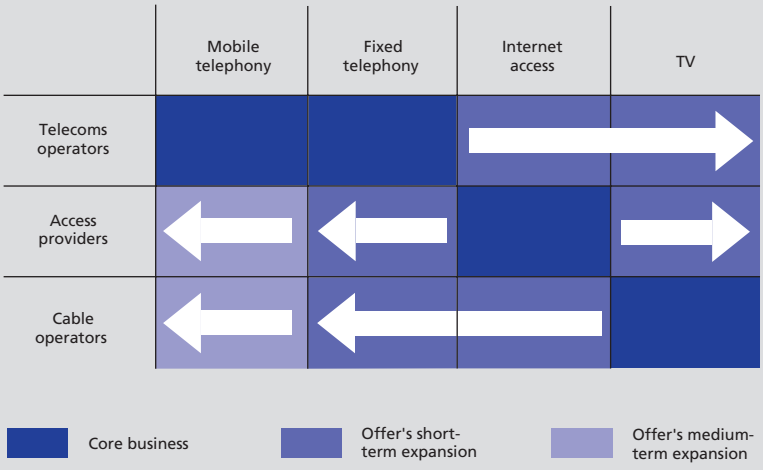
■ Available now ✳ Planned

Country	Operator	Fixed telephony	Internet access	TV
France	France Télécom	■	■	■
	Alice (Telecom Italia)	■	■	■
	Free	■	■	■
	Noos	■	■	■
	Neuf Telecom	■	■	■
Germany	Deutsche Telekom	■	■	VOD
UK	BT	■	■	VOD
	Carphone Warehouse	■	■	
	NTL UK	■	■	■
Italy	Alice (Telecom Italia)	■	■	■
	Tiscali	■	■	✳
	Fastweb	■	■	■
Spain	Telefonica	■	■	+ VOD
	Ono	■	■	■
Japan	Yahoo! BB (FTTH)	■	■	■
	NTT (FTTH)	■	■	Not directly
	KDDI	■	■ + tierce ISP	■
USA	AT&T (SBC)	■	■	■ + VOD (Dish Network)
	Verizon	■	■	■ + VOD (DirecTV or FiOS TV)
	BellSouth	■	■	■ (DirecTV)
	Qwest	■	■	■ (partnership with DirecTV)
	Comcas	■	■	■ + VOD
	Time Warner Cable	■	■	■ + VOD

Source IDATE

Value chain, services chain

Trends in player positioning in services



Source IDATE

Telecom access: prime building block for growth and sales

New products, new services: beyond telecoms…

Telcos are under pressure, both regulatory and competitive, in all traditional telecommunications markets. In their search for new sources of revenue they are now setting their sights on markets with a connection to their core business area, where the telecom component (connectivity, intermediation, devices) can allow them to promote other products and services.

Operators gradually branching out further and further afield…

As a result, telcos have been positioning themselves in other industries. To satisfy businesses' convergence needs, they are becoming increasingly involved in IT, acting more and more like integrators and software houses, taking on telecom outsourcing, IT services and even BPO – with some having taken over other firms in recent years to expand their range of expertise (Belgacom/Telindus, BT/Infonet and Syntegra, France Teleélécom/Silicomp). If most players market horizontal applications built around communication and exchange (hosting, network management, security, mail), some telcos have branched out into vertical applications, centred notably around Machine-to-Machine (Orange) and RFID (BT).

Similar trends are also gaining momentum in the residential market as telcos are beginning to make forays into the financial intermediation business via surcharged text messaging, micropayment (w-HA) and e-wallet (Felica) systems. Some have set their sights even further – a good example being NTT DoCoMo and its credit card system. Aside from longstanding holdings that offer no real synergies (Vivendi), some carriers have begun investing in the media side of things, acquiring websites (SKT/Cyworld), TV channels (Telecom Italia/La7 and MTV) or football rights (Belgacom) while others, such as France Telecom, are involved in financing films. In addition to media, telcos are positioning themselves through the specification of their devices (boxes, mobiles) and through their drive to become major players in the digital home via the home network.

…while acting as a distribution platform for other services …

These forays of telcos into the world of content production or IT services, which require very specific skills and the ability to compete with incumbent players, are still only a minor part of their business. They are geared chiefly to beefing up their presence on the distribution end of things, often a more lucrative endeavour. Telecom access has become a channel for distributing content and digital services, above all, with broadband providers' boxes delivering access to services such as VoD directly on the TV set. Meanwhile, cellular operators are designing handsets that enable access to mobile TV and to Internet services that are already popular on the fixed web (IM, mail, search engine).

The potential involved in distributing telecom products goes beyond the various products aimed at end users, and the business is likely to interest third parties as well, notably for the its advertising potential. The home pages on operators' fixed portals already display ad banners and sponsored links, while advertising is beginning to make its way to mobiles as well (Vodafone/Yahoo!, Bouygues Telecom/Microsoft, T-Mobile/Google) – an area which is expected to develop thanks to telecom products' geographical positioning capabilities when using Wi-Fi (Google/Earthlink) or cellular networks.

…taking a variety of approaches to new product development

The various approaches being taken by providers are shaping the added revenues these new services can generate. Some telcos want to remain end users' single point of reference and so are working to play a leading role in offering global solutions, in some cases fully proprietary (VOD, IM), while others are targeting these new markets only as intermediaries – leaving it up to third parties to develop global solutions built around the billing and connectivity services they supply (3 Xseries in the UK, NTT DoCoMo's i-mode).

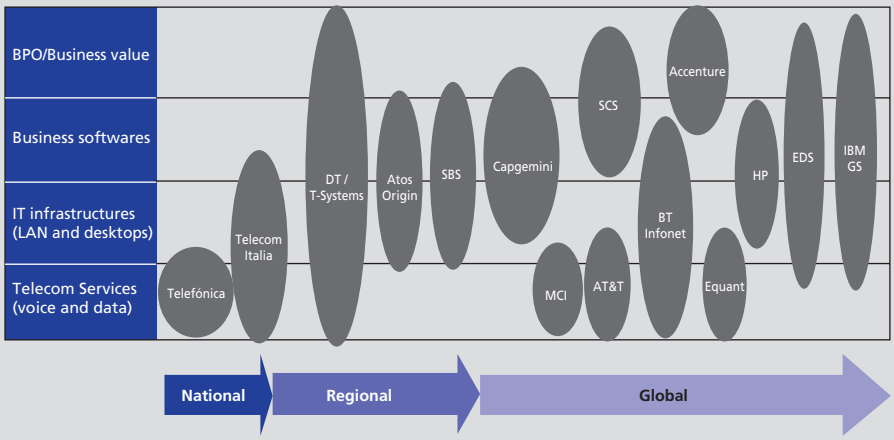
Some major deals for distributing services and content

Telco	Non-telco partner	Partnership
AT&T (formerly SBC)	Yahoo!	Portal and premium services
Orange	Microsoft	Instant messaging
Helio	MySpace	Social networking and blogs
T-Mobile	Google	Search on mobile portal
Free/Iliad	Canal	VOD and premium TV
"3"	Sling, Orb	Home PC and TV remote access
NTT DoCoMo	Sumitomo Bank	Mobile credit card service

Source IDATE

Who's who worldwide in IT outsourcing

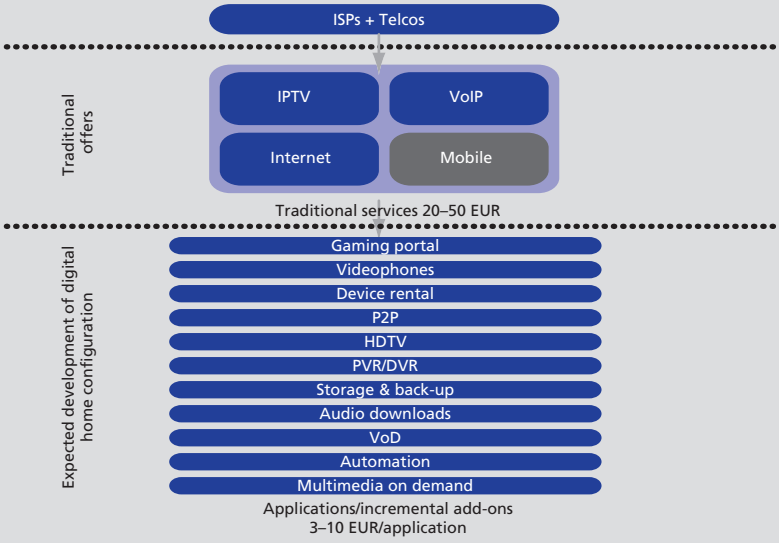
Trends viz-a-viz global giants



Source IDATE

Operators in the digital home

Box-centred strategy



Source IDATE

First forays into greater segmentation

Telecom product marketing

As the mobile telephony market is gradually nearing saturation, operators are opting for new marketing strategies. Given their cost structures, operators need to optimise use of their network, and thus start targeting underdeveloped markets.

Stunning rise of MVNOs…

To achieve this, some mobile operators have opted for alliances with MVNOs (mobile virtual network operators), in some cases under pressure from regulators, generally acting as a wholesaler (voice and data) to other providers that take charge of the marketing end. Among the telcos most open to this model are Sprint Nextel and T-Mobile UK.

Begun in 1998 with Virgin Mobile in the UK, the MVNO market is now gaining momentum in both Europe and North America, representing a customer base of 30 million in 2006, but it is still a limited phenomenon in Asia. The best developed markets are in Northern Europe (Scandinavia, Germany, Belgium) where MVNOs have forged themselves a solid foothold, thanks particularly to their low-cost strategies which are driving down prices across the board. There are now several hundred MVNOs in the market, though the future for many is still very much up in the air, as reflected by the recent disappearances of ESPN in the United States and of EasyMobile in the UK.

…many coming from other industries…

Many MVNOs come from outside the telecommunications industry. So, aside from landline telcos with an eye on fixed-mobile convergence, the bulk of them are from a wide variety of backgrounds: media, retail, low-cost specialists, banking, IT and, possibly soon, public utilities and the automotive industry, along with entirely new entrants.

All of the players are working to capitalise on their respective assets (content, distribution network, payment service, low-cost structure, customer base) and their brand to market an appealing and profitable offer. Their economic equilibrium nonetheless remains a delicate matter, given their high dependence on the wholesale minute supplier, and the sizeable operating costs (distribution, phone subsidies for post-paid customers), at a time when the handset often still plays a key role in the equation.

Over in the world of landline telephony, with the exception of mobile operators wanting to market fixed-mobile convergence offers, most virtual operators have shut up shop (for example AOL in Europe), leaving the market to unbundling specialists and cablecos. Only a handful of specialised retailers (Carphone Warehouse, Darty) are still banking on their ability to distribute DSL access, which has now become a mass market product.

…while some telcos favouring licensing agreements…

Eschewing the MVNO or FVNO route, some operators have developed sub-brands so as not to jeopardise their main brand – creating new brands, such as those built around E-Plus and BASE (Simyo, Al Yildiz) – or have opted for co-branding arrangements with a powerful partner. A case in point is Orange's alliance with channel M6, which is very popular with teens in France. This is a system that allows operators to continue to manage most of their activities, including distribution and communication, through either their existing network or alternative proprietary networks (web).

…but all targeting more streamlined segmentation

Thanks to these new forms of marketing, operators can target overlooked segments (low income, underequipped, prepaid) in the lower end of the market, either directly (licence) or indirectly (MVNO) through low-cost offers, albeit with no control over margins. They can also target important data consumption (web services such as Helio or Ten) and international traffic (ethnic communities, such as Movida and Mobisud), capitalising on better customer knowledge.

All of these strategies are part of the natural progression of a mature market whose development requires providers to better satisfy each segment's needs, as much in terms of distribution and communication as of delivering a more tailored product – as is happening in the fixed market, with examples that include TDC's no-frills DSL offers for the younger crowd (low price, online distribution, no customer support).

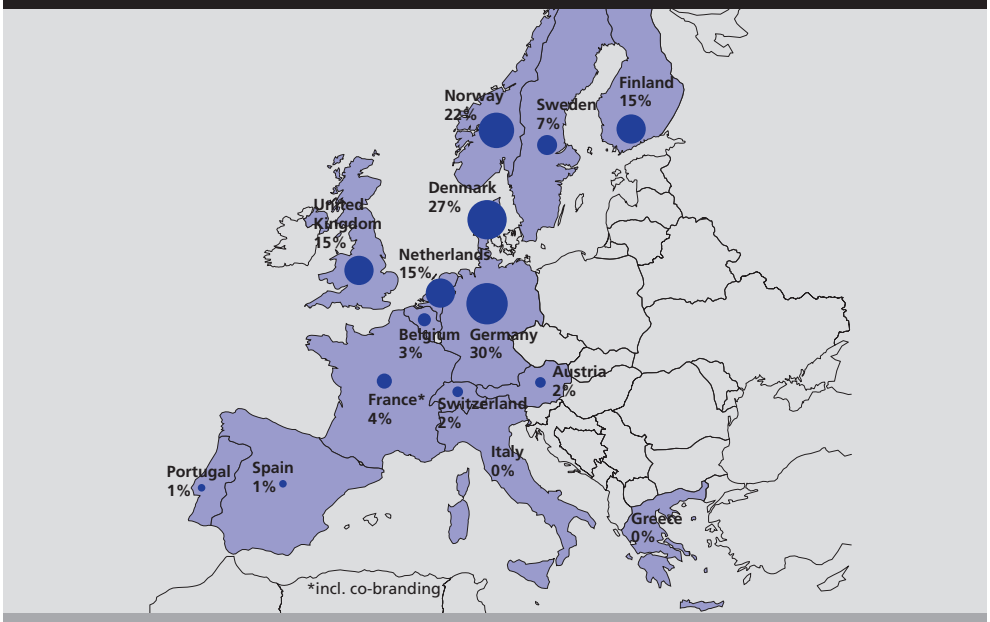
Main MVNOs not of telecom origin

Sector origination	MVNO
Media	NRJ, MTV, ESPN (giving up), Disney
Retail	Tesco, Carrefour, Auchan, 7-Eleven, Aldi, Virgin, Fnac
Low cost	Debitel, EasyMobile, Telmore, Tchibo, Yesss!
Computer/M2M	Wyless, Kore Wireless, Wireless Maingate
Newcomers	Helio (young urban), Ten (tech savvy), Firefly (kids), Movida (hispanic), Calao (african), Jitterbug (seniors)

Source IDATE

Development of MVNOs in Europe

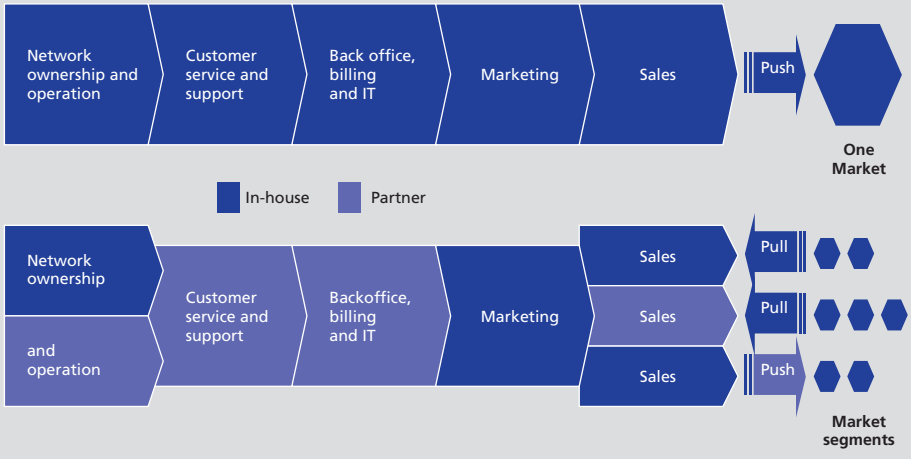
Client market share for MVNOs (mid-2006)



Source IDATE

Segmented approach to marketing

E-Plus - a strategy in practice since 2005



Source IDATE

IV Business equipment and services

A business-consumer digital divide?

Corporate networks: all IP and centralisation drive a growing array of services

Over the past few years, there has been a growing momentum in the migration from Frame Relay and ATM to IP infrastructures – spurred by the incentive of a swifter return on investment: lower-cost broadband network rollouts with xDSL, and a reduction in the number of connections thanks to the ability to share usage and applications on the same platform. Running parallel to this fixed network convergence is the increasing integration of corporate applications, first with communication tools – messaging, presence management, collaborative work tools, CRM – and, later, companies' business applications (ERP, SCM, FFA, decision-making tools).

This integration of applications around IP and service-oriented architectures (SOA) is also being accompanied by increasingly centralised information systems, with more and more businesses adopting thin client infrastructures – employing solutions that enable reduced per-workstation administrative costs, easier distant site management and a better response to nomadic workers' needs.

Together, IP integration and centralisation reinforce the strategic role played by LANs and WANs. Their performance is dictated above all by the supported applications, which depend on the company's different business areas and types of user, and so forcing a rethink of traditional QoS commitments (latency, jitter, downtime) in terms of the applications' performance. This approach underpins the new direction being taken by operators, equipment-makers and software publishers with their offering, including the disappearance of agreements between hardware manufacturers and software publishers for interfacing communication applications with ERP software packages. Progress is also being made in WAN optimisation at the router and container level – working to

reduce IP application latency. And operators are not being left behind here: all are working to increase their SLA expertise, notably through partnerships with probe designers.

VoIP: a slow transition

For the first time ever, the number of IP lines delivered in 2006 exceeded the number of switched lines, as various situations are providing the incentive to switch to VoIP: when renewing a PABX base, when renegotiating contracts with landline telcos, when installing an MPLS network, and broadband in general, when looking to reduce calling costs, when setting up new establishments or following a merger/acquisition, and when working to develop new products and services using collaborative applications. Replacing a PABX and creating new sites account for over 75% of migrations to an IP telephony solution, which explains why the overall transition is slow, hampered by the massive investments that companies need to make (with handset costs representing 40% to 50% of a project's total cost). A great many companies are therefore adopting hybrid IP/TDM gateway solutions. In the remaining cases, gaining access to new services (unified messaging, collaborative work, improved CRM, fixed-mobile integration) proves the decisive impetus. Along with this slow transition is the segmented deployment by type of establishment (new establishment, main sites, agencies, secondary sites), with installations taking place at differing paces and according to the type of user involved. A proper analysis of the workstation is crucial when deciding whether to equip staff members with classic phones, IP phones, softphones or wiphones, and when seeking to provide them with access to a collaborative work environment. This increased segmentation of technical solutions also depends on the issue of outsourcing: for example, dedicated hosting or not, IP PABX or IP Centrex. Some countries and regions have made considerable strides in this area (the United States, Scandinavia, Australia), while other countries of Continental Europe are still trailing behind somewhat.

Mobility and M2M

Mobility has now taken on a central importance for businesses: employees who need to travel often or occasionally to visit clients or their company's other offices, those who work frequently or occasionally at home. Although these practices are more common in some countries than in others, they are becoming increasingly prevalent across the board. If equipping employees with a mobile phone is increasing at a rate of less than 10% a year, laptop equipment levels are reporting double-digit growth. This trend of having more and more employees equipped with web-enabled PDAs, PCs with Wi-Fi or 3G cards, is forcing businesses to rethink their view of mobile handsets, bringing them under the heading of IT services. The use of data transmission services was originally confined to email and Intranet access but this market, pioneered by RIM and its Blackberry, is now attracting a growing number of equipment manufacturers (Nokia, HP, SonyEricsson), coupled with the fact that providing access to business applications is often enabled by their association with thin client architectures. And fixed-mobile convergence is reshuffling the deck once again: dual-mode GSM-Wi-Fi handsets and GSM's integration into PABX, and even into IP Centrex offers.

M2M represents a source of substantial gains in terms of productivity and reactivity, and a sizeable opportunity for hardware suppliers, integrators and network operators. Machine-to-machine applications made their way into a great many sectors of activity in 2006, driving them past the experimental stage and the confines of early adopters. The combination of RFID, wireless network (GPRS, UMTS, Wi-Fi…) and GPS (global positioning system) technologies opens the way to a wide range of health, supply chain man-

agement, industrial installation monitoring and fleet management applications. The transportation sector has made particularly great strides in this area, but other sectors have been making significant progress too, including production, distribution, health and local authorities. The next challenge will be to integrate thousands of data streams from the sensors directly into the company's information system over IP, and to process this information to better extract value, achieve better customer knowledge and to devise new services. For mobile operators suffering from declining SIM card revenues, the decision by some to go through an MVNO therefore seems a logical one.

One-stop shopping for SMEs?

There has been a growing consensus over the past few years that the small-medium enterprise market is a potential goldmine, or is at the very least recognised as a market long overlooked by service providers. Several trends thus came to the fore in 2006: an SME segmentation for services initially offered to consumers, such as BT's Fusion, the development of packages that include fixed lines, mobile calls and internet access. Some vendors are adding IT services to the mix, along with infrastructure and applications management, and ASP solutions. On the more radical end of the spectrum, some supplier strategies include one-stop IT and telecom solutions – which naturally gives rise to the need for in-house expertise and a network of distributors and partners. Daunted by the challenge, some operators, such as Cable & Wireless, preferred to throw in the towel and to focus instead on the multinational segment.

Targeted mergers & acquisitions

After the endless series of telco mergers and acquisitions in 2005 (AT&T and SBC, O2's takeover by Telefónica, France Telecom's acquisition of Amena, NTL's of Telewest), all of which had a corporate component, 2006 was a calmer year – with the notable exception of SBC's takeover of BellSouth, which then adopted the AT&T brand and, over in Japan, Softbank's acquisition of Vodafone KK.

IP's integration into networks has meant a shift in player positioning, either through takeovers or partnerships. Following its failed acquisition of Telindus, France Telecom went on to take control of Diwan, Neocles and Silicomp which enabled the French incumbent to expand its expertise into the areas of network integration and thin client architectures. On the flipside, faced with the ongoing woes of its IT branch, Deutsche Telekom's new management plans on selling off T-System, with Atos Origin and Capgemini rumoured to be interested in the acquisition.

Naturally, the driving-force markets such as storage (fuelled by the communications explosion and by both general and sector-specific legal obligations) has been whetting growing appetites – leading to deals whose most outstanding examples are IBM's takeover of FileNet for 1.6 billion USD, Quantum's acquisition of Adic for 770 million USD and Brocade's of McData for 713 million USD, along with more 'modest' deals, such as Emulex's takeover of Sierra Logic for 180 million USD, Exabyte's acquisition of Tandberg Data for 28 million USD, and the 38 million USD that Terrascale Technologies spent to take control of Rackable Systems.

On the publisher side of things, Oracle continues its series of takeovers, albeit at a more moderate pace (over 20 in the past two years), including the acquisition of service fulfilment solutions provider, MetaSolv Software, for 219 million.

As to integrators and software houses, of particular note is the decisive role being played by private equity firms: Amec sold Amec Spie (to help rid its debt and refocus on energy) to PAI Partners (ex-Paribas Affaires Industrielles) for EUR 1.04 billion; in May 2006, Platinum Equity sold NextiraOne to ABN Amro Capital France, while US private equity firm,

Blackstone, was on the verge of taking over Atos Origin for EUR 3.6 billion. Meanwhile, the software houses themselves continue to acquire fellow companies, albeit for lesser amounts – their investments being made largely in lower-income countries as part of their offshore development strategies. One example here is Capgemini which took over Indian firm, Kanbay, a supplier of integrated management consulting, systems development and integration, and facilities management solutions, specialised in financial services, for 1.25 billion USD.

What new services?

The challenge for businesses in the coming years appears to involve the adoption and integration of tools and practices developed in the consumer segment, as part of what is commonly referred to as Web 2.0 – namely P2P exchange, group messaging, instant messaging, RSS feeds, wikis, blogs and so on All of these facilitate communication and idea swapping inside the company, in a non-hierarchical and non-linear fashion. Naturally, they suppose the creation of different working structures that will require a period of adaptation. These tools are also likely to force a rethink of the relationship with customers and users. Although some attempts have already been made (blogs, RSS feeds, viral marketing techniques), all are still in their infancy, and a great many uncertainties remain. In this era of new services, companies like Google with a solid foothold on the internet are the most likely to come out on top.

Demand still on the rise

Fixed data services in the workplace

Market still driven by high broadband demand …

The corporate fixed data services market is still in good shape, growing by a further 6% in 2006, after an 8% increase in 2005. Growth is nevertheless expected to decline in 2007, due in large part to the growing saturation of businesses equipped with a broadband connection, albeit with healthy growth in the areas of distant site connection and services bundled with access.

At the start of 2006, close to 71% of France's small and medium enterprises (0-250 employees) were equipped with internet access, of which 81% with broadband while, in the UK, close to 84% of SMEs were equipped with internet access, 73% with broadband.

… and by lively competition bringing down prices

On the supply side, this growth has translated into stiffer competition between providers who are now offering an increasingly wide array of services, improved functionalities and more affordable prices. Thanks to unbundling, the price of DSL access (at constant bitrates) has dropped dramatically which has enabled, among other things, affordable IP VPN for businesses. This holds true not only for SMEs, which previously had little access to this type of service, but also for larger companies for the portion of their network that covers multiple smaller sites, such as agencies.

For multi-site corporations, the migration from traditional technologies (X25, Frame Relay) to IP networks has generated a decrease in average per-site expenditures, at constant bitrates. For operators, this drop in revenues has been compensated in part by a sizeable increase in the access speeds on offer, the general rule for businesses being to maintain their budget while benefiting from increasingly powerful services.

DSL still predominates but Ethernet moving up the ranks

Among the internet access technologies available, DSL is expected to maintain its domination in the coming years. However, access services based on Ethernet (over fibre optic MANs and Layer 2 VPN) constitute a market segment that is expected to enjoy even greater growth, and so boosting Ethernet's penetration considerably. An increasing number of providers are now entering the Ethernet market, thus boosting the availability and selection of this type of service and helping to bring down prices.

The road to convergence

The first forays into convergence are taking place around VoIP, which enables an enriched data service offering. This transition to IP telephony requires the implementation of access services carrying both improved service level agreements and symmetrical access. Businesses are being tempted more and more to adopt IP Centrex services, either dedicated or shared, which considerably enhance the services on offer. The switch to IP also provides an opportunity to offer additional services to complement data transfer, and voice in particular: directories, numbering plan, unified messaging, security services, etc. Another type of convergence that is driving the creation of new services is fixed-mobile convergence, which allows telcos to market solutions that include convergent services (mobile office, single fixed-mobile handset). After having tested these offers in the consumer market, telcos are gradually extending them to SMEs and large accounts.

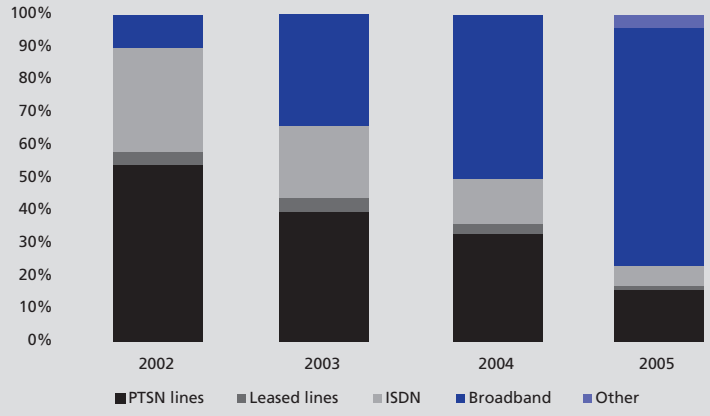
European market value of fixed data services - business segment

(billion €)	2003	2004	2005	2006	2007
France	4.6	5.2	5.5	5.4	5.6
Germany	7.5	7.8	8.1	8.8	9.3
Italy	4.0	4.3	4.8	5.4	5.8
Spain	2.7	3.0	3.3	3.5	3.6
United Kingdom	6.6	7.0	8.0	8.7	9.0
European Union	35.6	38.4	41.4	43.7	45.4
Other Europe	1.7	2.0	2.2	2.4	2.6
Total Europe	37.3	40.4	43.6	46.1	48.0
Annual growth		8.2%	7.9%	5.8%	4.1%

Source IDATE, from EITO

Internet access, by technology

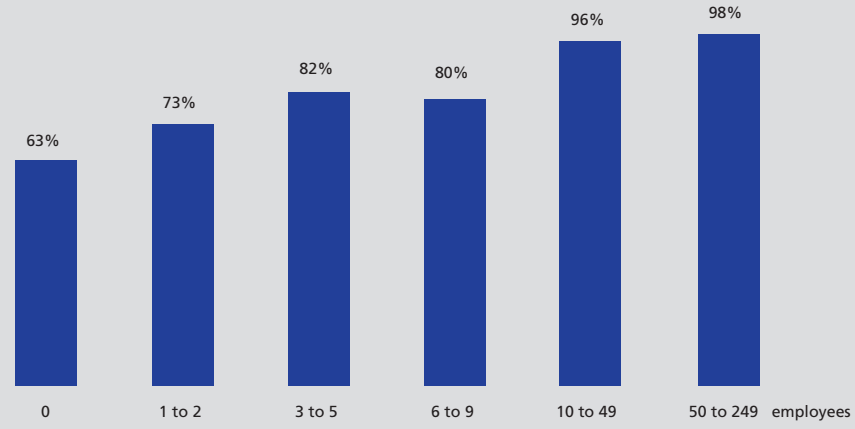
Breakdown of internet access in UK, for SMEs (0 to 250 employees), by technology



Source Ofcom Research

Internet access, by company size

Penetration of internet access in France, for SMEs (0 to 250 employees), in 2006



Source IDATE

Slow and disparate growth of mobile handset equipment

Mobile usage and equipment

There are still major gaps in equipment levels between countries, sectors of activity and different size companies. On the whole, in Europe and North America fewer than 20% of staff members in companies with over 500 employees are equipped with a mobile phone, whereas over 60% of SME staff members are equipped. These rates are higher still in certain countries, such as China (82% in companies with 0 to 50 employees).

However, there is still considerable reluctance among SMEs, particularly in Europe, to equip their employees. According to certain surveys (notably in the UK), equipment levels have actually decreased: the percentage of companies with at least one mobile phone dropped by 9 points in the UK between 2001 and 2005. In the retail sector in particular, company heads see no reason to equip their staff with a mobile handset and, in some cases, company executives and staff members use their own mobiles for business purposes. In China, the United States and Germany, in all sizes of company combined, estimates point to 24% of employees being supplied with a mobile phone by their employer, whereas 50% state that they use a mobile phone, in some cases their own, for business purposes.

Growing substitution?

While more and more households are replacing their landline phone with a mobile, the same does not hold true for businesses. The vast majority of workers equipped with a mobile phone continue to use a landline phone as well – the main reasons cited for keeping a landline connection being cost and convenience. A portion of small businesses nevertheless appear to have entirely replaced their landline by a mobile handset: a total of 10% in the United States, for instance. Surveys conducted with decision-makers indicate that this trend will pick up momentum in the coming years: 68% of Chinese firms stated their intention to replace their fixed network with mobile lines, compared to 20% in Germany and 22% in the US. The introduction of dual-mode fixed and mobile handsets, and of services of the Home Zone style, could well reshuffle the deck.

Growing use of data transmission services

While text messaging was long used chiefly by consumers, and by young consumers in particular, with the business segment's share of the mobile base remaining very small (around one in five mobile phones), SMS is now being used more and more by business people, notably those working in the corporate services market. In France, for instance, 43% of the mobiles used by companies with 0 to 5 employees make use of text messaging. The deployed base of handsets compatible with other types of data applications (email, web browsing, Intranet access) is still quite small – the life cycle of mobiles bought for business use being longer than those bought by consumers – and their take-up is still very low: fewer than 15% of employees are equipped with a mobile phone (or less than 5% of all employees in the United States, China and Germany). The laptop computer is still the device most widely used for data transmissions, well ahead of mobile phones and PDAs. 40% of companies in the UK, and 36% in France whose employees travel on a regular basis have equipped their staff members with laptops, enabled for remote access – a percentage that drops to 18% and 11%, respectively, when it comes to mobile phones.

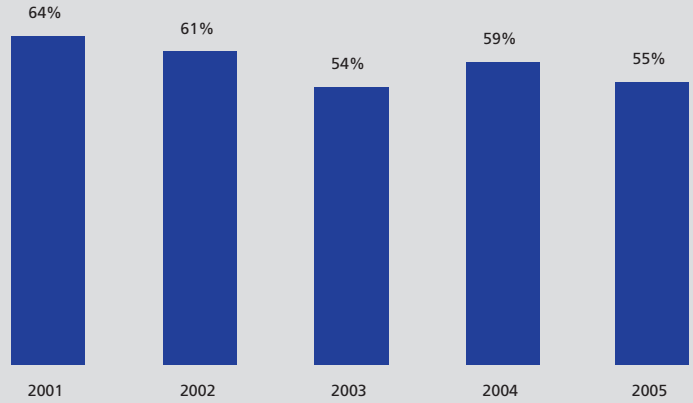
Proportion of employees using mobile phones for work by company size

Employees	1 to 49	50 to 199	200 to 499	500 to 999	1000+
China	82%	56%	36%	41%	39%
Germany	61%	27%	19%	11%	13%
USA	76%	35%	25%	21%	18%

Source Nokia

Mobile telecom equipment in companies

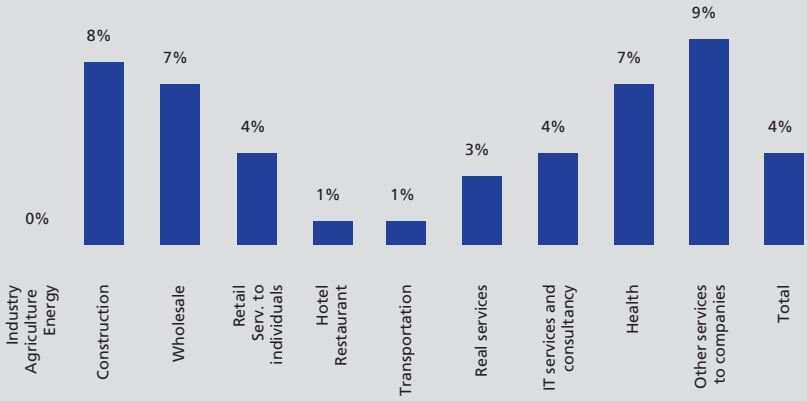
Penetration of mobile telephony in SMEs (0 to 250 employees) in UK



Source Ofcom research

Mobile telecom equipment in companies

Wireless access to internet (GPRS, UMTS, Wi-Fii) in micro-enterprises (0-5 employees) in France, en 2006



Source IDATE

VoIP and wireless drive growth

Corporate network equipment

The corporate network hardware market grew by 7% in 2005 – driven in large part by the IP telephony and WLAN segments.

IP shaping the business telephony market

The world's business telephony market rose by 6% in 2005, topping the EUR 8 billion mark. The market itself is in the midst of a transitional phase, shifting gradually from classic telephony to VoIP, which enables voice and data convergence on a single corporate network. To achieve this transition companies either acquire an IP PABX, or render their existing PABX IP-compatible by installing IP cards. The traditional PABX market is shrinking slowly, decreasing by 4% in 2005, but still managing to hold its own thanks to the rather sluggish migration to IP. Many businesses are still working to amortise their installed PABX – a process that generally takes around ten years. But IP systems have been making steady progress, reporting a 40% increase in 2005, with the equipment market's annual growth over the next five years expected to be over 20%. The market is getting a sizeable boost from new applications enabled by IP (unified messaging, click to call), and the transitional phase is likely to mean moderate but solid annual growth for the business telephony market of around 4% for the period running from 2006 to 2010.

High WLAN growth

The emerging WLAN hardware segment enjoyed a healthy 9% increase in 2005 – a particularly high growth rate when taking the parallel drop in prices of roughly 15% to 20%. In terms of volume, hub (access points and gateways) and WLAN interface card sales rose by between 20% and 30% in 2005, depending on the segment.

The high growth expected in the coming years is likely to be fuelled by WLANs' growing penetration in the SoHo/residential market, and by business equipment. This optimism must nonetheless be tempered by the fact that the trend of integrating WLAN connectivity into other gear, such as PCs and broadband access equipment, will continue to drive down prices.

Routers and switches: a mature market

Routers and switches account for roughly 60% of the corporate LAN market.

The corporate router segment grew by 7% in 2005, but this figure masks segment to segment disparities. While the market for under 1 Gbps routers is growing at a steady pace (+11% in 2005), and is a segment that accounts for roughly two-thirds of router sales, the market for over 1 Gbps routers is likely to grow at a much more moderate rate due to the segment's ongoing decline, combined with the fact that the under 1 Gbps router segment is gradually losing steam.

The switch market as a whole also grew by 7% in 2005, to reach 11.7 billion EUR, while the Ethernet switch segment is expected to increase by 4% over the course of 2006-2010, maintaining the momentum of this now mature market. A distinction can be made between two categories of wired Ethernet LAN switches: 2/3 layer switches located in the network access layer, and 4/7 layer switches which are used for specific applications. Estimates for 2005 indicate 2/3 layer switches represented 95% of the world market, or 11.1 billion USD, with 4/7 accounting for only 5% of the market, but now enjoying substantial growth. As a result, the market for the former grew by only 5% in 2005, compared to 60% for the latter.

World market for business network equipment

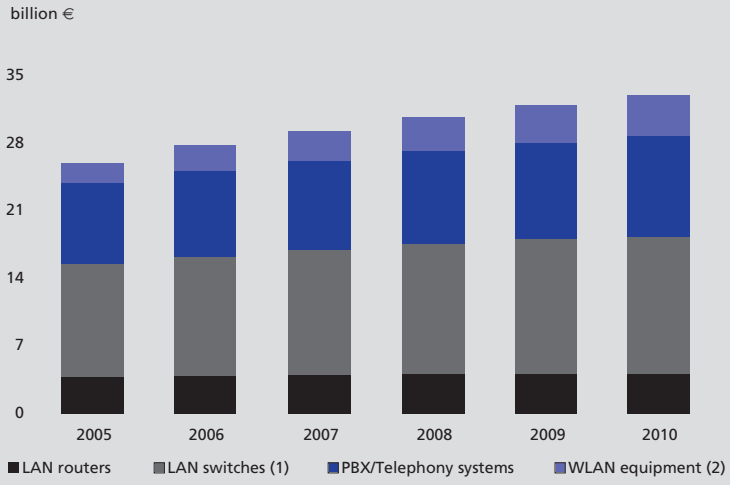
(billion €)	2005	2006	2007	2008	2009	2010
Western Europe	8.3	8.8	9.1	9.5	9.8	10.1
France	1.5	1.6	1.7	1.8	1.9	1.9
Germany	2.2	2.3	2.3	2.4	2.4	2.5
Spain	0.5	0.5	0.6	0.6	0.6	0.6
United Kingdom	1.8	1.9	2.0	2.0	2.1	2.1
North America	9.5	10.3	10.9	11.3	11.8	11.9
USA	8.8	9.6	10.1	10.6	11.0	11.1
Asia/Pacific	6.5	6.9	7.4	7.8	8.2	8.6
China	1.1	1.2	1.4	1.5	1.6	1.8
Japan	2.6	2.7	2.8	2.9	2.9	3.0
Rest of the World	1.6	1.9	1.9	2.0	2.2	2.3
Central and Eastern Europe	0.4	0.5	0.5	0.5	0.6	0.6
Latin America	0.9	1.0	1.0	1.1	1.2	1.2
Africa/Middle East	0.3	0.3	0.4	0.4	0.4	0.5
Total	25.9	27.9	29.3	30.7	32.0	32.9

Note: Wired LAN equipment (routers, switches, bridges and hubs), PBX (traditional and IP) and WLAN access points and switches.

Source IDATE

Growth of world market for business network equipment

… by equipment

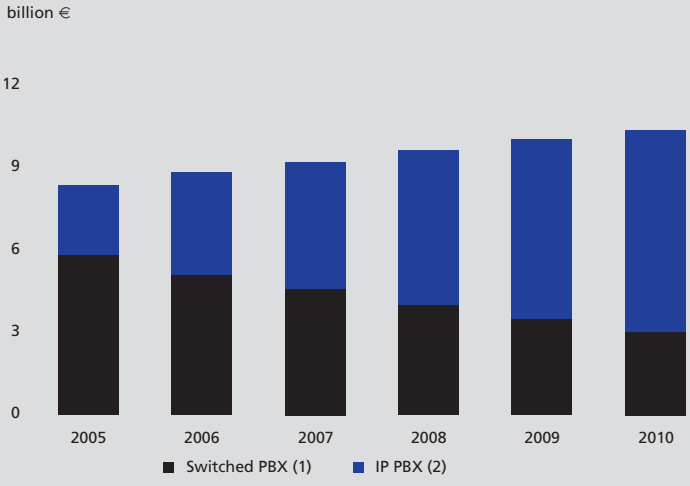


(1) switches, bridges and hubs
(2) all WLAN equipment (for companies, SoHo or consumers), including network interface cards but excluding terminals (telephone sets, PC,…)

Source IDATE

The inexorable rise of IP in businesses

World market development of business telephony and IP share



(1) includes TDM PBX and KTS
(2) includes IP telephone sets

Source IDATE

Revival confirmed

Business software

The market for business software and systems applications continued to grow in 2006, rising by 7% and expected to maintain a comparable momentum in 2007.

HRM software on a steady growth path

The human resources software market (ERP, SCM, CRM) grew by around 5% in 2006 – a continued growth that can be put down to a healthier economic climate, and increasing investments by companies working to improve their competitiveness, their corporate governance and their overall efficiency.

After having enjoyed a revival in 2005, the ERP market truly came to the fore in 2006 – a renewal that is due to large companies' increased spending, and growing sales to medium-size enterprises. ERP suppliers are better capitalising on new technologies, such as object-oriented programming and web services, enabling them to better differentiate their products, particularly in the areas of finance, human resources and purchasing.

The SCM market, too, is in good shape: businesses have begun reinvesting in supply chain applications such as planning capacity, producing higher quality data and optimising supply chain execution.

Even though the CRM market is by now semi-mature, it is expected to continue to enjoy significant growth thanks to more sector-specific implementations, such as e-government systems.

The market's healthy momentum also derives from the massive deployment of collaborative solutions, and the BPM (Business Performance Management) market's solid performance, being fuelled by a great many organisations' full revamping of their financial and fiscal processes.

Storage and security boosting the systems applications market

Demand for systems applications, which represents a market comparable to the applications market, was also in very good shape in 2006, particularly in the areas of security, storage and content management systems. At close to 10%, growth in this segment is even higher than for applications software, as companies are managing to optimise their software infrastructures.

As to data storage, investments in ensuring continuous uptime and in disaster recovery (data protection and critical applications availability) remain a major priority for large companies. Security, meanwhile, is one businesses' most pressing preoccupations, generating healthy sales for secured content management services (including virus protection), security and vulnerability management, and firewall management services – all of which are forecast to enjoy over 10% growth once again in 2007.

In addition, spending on SOA (Service-Oriented Architecture) infrastructures is also expected to shoot up, while growth in the BI (Business Intelligence) segment is expected to remain steady, thanks in large part to SMEs' growing adoption of this type of solution, to the need to extract value from the massive quantities of collected and stored data, and to the adoption of new technologies like RFID.

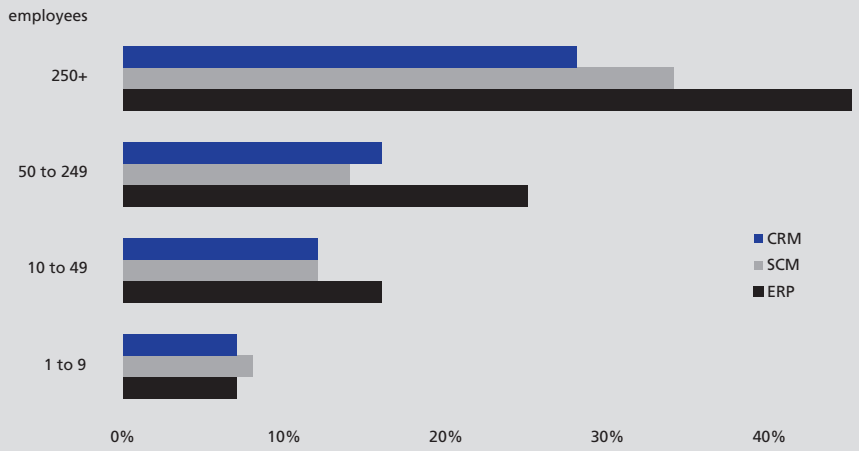
World market for business software

(billion €)	2003	2004	2005	2006	2007
Europe	64.3	67.2	70.9	75.5	80.4
EU	60.8	65.2	66.9	71.1	75.7
France	10.7	11.2	11.8	12.6	13.4
Germany	14.9	15.4	16.1	17.0	18.0
Italy	4.7	4.8	4.9	5.0	5.3
United Kingdom	13.0	13.7	14.5	15.5	16.5
Other Europe	3.5	2.0	4.0	4.4	4.8
USA	0.0	77.9	82.2	86.3	93.6
Japan	18.5	21.4	21.9	23.4	24.2
Rest of the World	17.3	16.9	17.0	19.7	21.4
Total	100.1	183.4	192.0	204.9	219.6
Annual growth		83.2%	4.7%	6.7%	7.2%

Source EITO

Use of management software systems in Europe

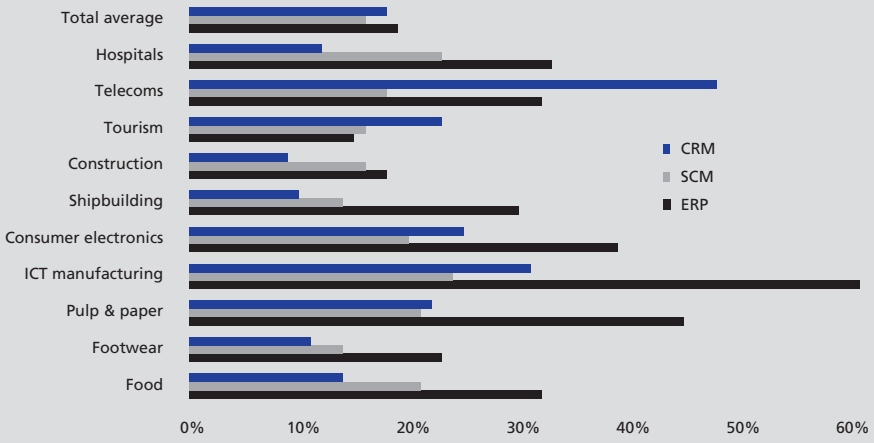
… by company size, as % of businesses, in 2006



Source e-business W@tch

Use of management software systems in Europe

… by sector, as % of businesses in 2006



Source e-business W@tch

Slight dip in the market

Outsourcing

Drop in average contract value, but growth of new contracts

The world's outsourcing market decreased for the first time ever in 2006. For contracts worth over 50 million USD alone, estimates point to a 2% drop in the total value of contracts signed in 2006, compared to 2005, and an 11% drop since 2004. This decline is due to an ongoing decrease in the average value of contracts and in their lifespan (an average 6 years in 2006, against 8 years in 1996). Service providers' overall sales shrank by 1% in 2006. Paradoxically, the number of new contracts signed in 2006 reached an all-time high – generating rolling annual sales of 7.8 billion EUR, in other words 3% more than in record-breaking 2005. This dichotomy between an overall shrinking market, and the best year ever for new contracts, comes from the number of existing contracts that have reached the end of their lifecycle – hence the signing of '2nd generation contracts' which are either renewals or agreements of a lesser scope, and carrying a lower value than their predecessors.

In fact, roughly 20% of the contracts signed in 2006 (representing close to a third of contracts' total value) were either renewals or renegotiations of existing contracts – 15% higher than the average over the past five years. Among other aspects, these 2nd generation contracts make it possible to streamline more effectively the investments amortised over the contract's lifespan. In addition, the market has matured and restructured: buyers are now taking a more selective approach to outsourcing. This shift has translated into a reduction in the scope of the agreements, more and more of which cover a single process, with contracts being awarded to the best suppliers in each field. And, finally, a growing number of companies are re-internalising a certain number of operations.

This state of affairs applies to all the world's regions.

BPO in better shape than outsourcing as a whole

Drawing a distinction between BPO (Business Process Outsourcing) and ITO (IT Outsourcing), the drop in overall growth is due to the declining health of ITO, which accounts for close to 70% of all contracts, and whose sales dropped by more than 5% last year. BPO, on the other hand, grew by around 10%, spurred by documentary management and purchasing services and particularly by financial service outsourcing (FSO) which represents a major share of new contracts. On the flipside, CRM is on a downward slide, largely because of the failure rate of projects in the past. The BPO market's growth and the ITO market's decline are linked to a certain degree: when a company outsources a growing number of processes to third parties, they no longer need the associated infrastructure, and so find themselves with fewer IT services to outsource.

Market still dominated by the same heavyweights, but Indian suppliers continue to make great strides

On the supply side, the market continues to be dominated by the Big 6 (Accenture, ACS, CSC, EDS, HP, IBM) and by Europe's Big 5 (Atos Origin, BT, Capgemini, SBS, T-System) – these 11 players combined cornering a 67% share of the total value of contracts signed in 2006. As to the remaining 33%, Indian suppliers' business continues to grow much faster than the heavyweights, and they now account for over 4% of the world's total contract value, having increased their market share by between one and two points over the past two years.

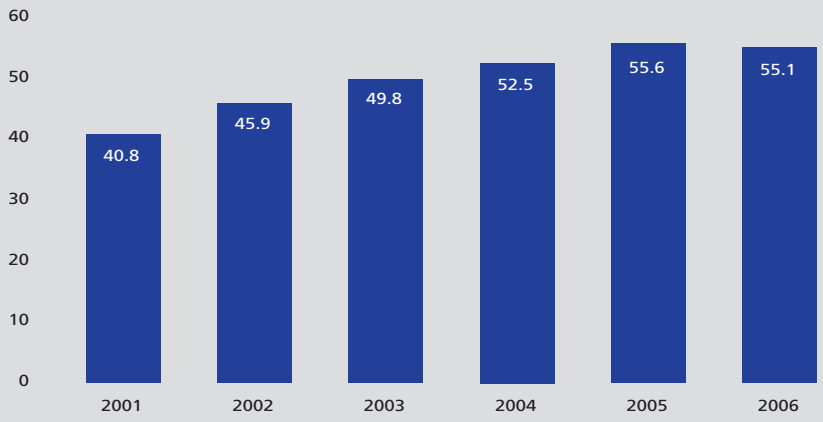
World market for outsourcing

Total value of signed contracts in 2006 (contracts over 40 billion €) (billion €)	2002	2003	2004	2005	2006
BPO	14.8	18.5	23.4	18.7	21.0
ITO	48.1	45.7	44.6	47.1	42.6
Total	62.9	64.2	68.0	65.9	63.6
Annual growth	17.9%	2.0%	6.0%	-3.2%	-3.4%

Source TPI

Cumulative worldwide annual income of outsourcing contracts

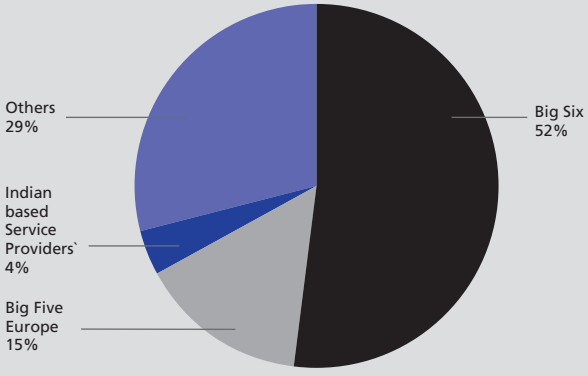
… by contracts above €40 million



Source TPI

Market share of outsourcing suppliers

… by contracts above €40 million, in 2006



Source TPI

Integrating SMEs in BtoB exchanges: Europe's new challenge

A new European challenge

The lack of reliable data on the value of inter-company trade makes it difficult to measure the sector's progression. On the whole, BtoB commerce accounts for between 70% and 90% of online trade. Based on BtoC commerce data, we estimate that BtoB transactions totalled close to 1,000 billion EUR in Europe last year, of which roughly 80 billion EUR in France.

e-business's uneven development across Europe

European enterprises' use of e-business solutions is comparable to what is found in other economically advanced countries. However, there are still sizeable disparities between sectors of activity, especially between the manufacturing and services sector, and depending on a company's size.

The e-Business Index 2006, created by the European e-business Market Watch, reveals that large companies account for the majority of e-business activities, notably in the IT services, automotive, aeronautics and pharmaceutical industries – all high-tech industries whose prime objectives generally include supply chain integration and reorganising the purchasing process.

Nevertheless, there are notable differences between the European countries surveyed: companies in Northern Europe are more inclined to use e-business applications (CRM, ERP) than their counterparts in Southern Europe. Finland and Germany have attained a high index, close to or higher than 90%. With an index of 75, France is on the lower end of the scale, behind Italy with 77, but ahead of the Czech Republic (index 68) and Hungary (index 56). These results corroborate other rankings, which also reveal that Southern Europe is lagging behind in its use of e-business solutions, particularly among SMEs.

More European companies buy online than sell online

Online procurement continues to be more widely used by European businesses (practised by 57% of the enterprises surveyed) than online sales via EDI networks or through a company website (35%). These figures confirm the results of earlier surveys, with online purchasing being commonly used by companies at different stages along the value chain, whereas certain products are ill-suited for online sales – hence the gap.

Companies located in Finland, the Netherlands and in Poland are the biggest online buyers in Europe, with more than half of them stating that they placed orders with their suppliers over the web in 2006.

As to online sales, Finland and the UK top the ranks of the ten countries surveyed, while France was in first place for the number of companies that stated they accept online orders, and whose value exceeds 5% of their annual sales.

Competitive edge depends on partners along the value chain

Having incorporated e-business solutions into their daily practices to a significant degree, large companies have by now understood all of the benefits to be had from tier 1 subcontractors being connected to their information system. Incorporating SME-SMI into big businesses' supply chain is nevertheless far from having been achieved. There is still a considerable risk in seeing tier 1 suppliers ejected from the bigger companies' value chain, unable to satisfy their demands with respect to compatible information systems.

On average, 15% of companies with fewer than 250 employees use ERP, SCM and CRM applications, enabling them to optimise management of their entire information flow, physical flows and of the interfaces needed for their production processes. This percentage increases to 30% for European companies with over 250 employees.

Companies placing orders online

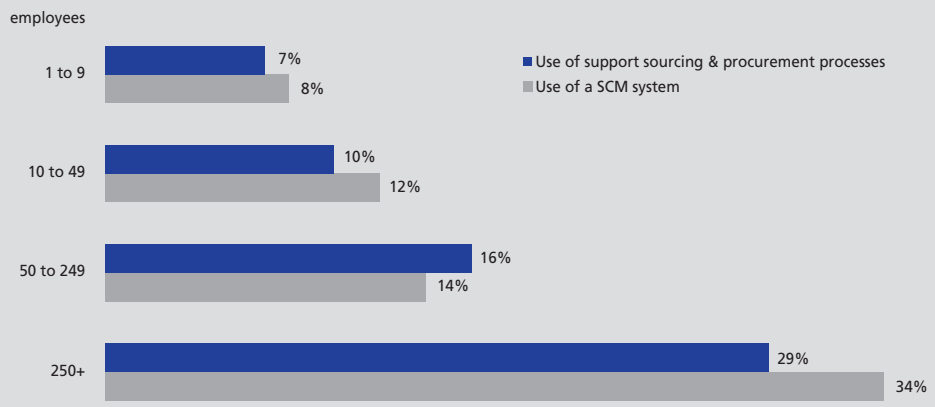
% of companies	Place orders to suppliers online		Accept orders from customers online	
	at least 5%	< 5%	at least 5%	< 5%
Czech Republic	44%	13%	24%	9%
Finland	60%	20%	35%	18%
France	41%	26%	36%	7%
Germany	42%	29%	22%	12%
Hungary	22%	25%	21%	8%
Italy	20%	24%	25%	6%
Netherlands	56%	11%	25%	8%
Poland	52%	17%	30%	10%
Spain	24%	15%	19%	5%
United Kingdom	34%	17%	35%	6%

Based on survey question: "Does your company allow customers to order goods or book services online from the website or through other computer-mediated networks?" — Base: All enterprises that use computers from the 10 sectors covered in the EU-10 (CZ, DE, ES, FR, IT, HU, NL, PL, FI, UK, N=7237 (total) — Weighting: figures for countries are weighted by employment.

Source e-Business W@tch (e-Business Survey 2006)

Delays of European SMEs in e-business integration

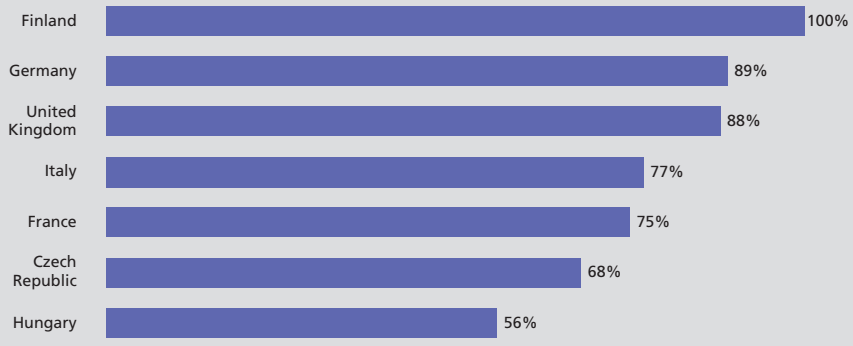
Online supply management, by business size, in 2006



Source e-Business W@tch (e-Business Survey 2006)

e-Business: disparities by geography

E-business: usage levels in selected countries, in 2006



Source e-Business W@tch (e-Business Survey 2006)

Growth still on the table

BtoC commerce

Online sales in Europe equal sales in US

Upholding the trend of previous years, consumer e-commerce sales were up once again in 2006. The first estimates out of the United States indicate retail sales of EUR 105 billion, or a 25% annual increase, according to the US Census Bureau's database statistics.

In Europe, too, online sales continue to rise, estimated to total EUR 85 billion in 2006 in Western Europe's five major markets combined (the UK, Germany, France, Spain and Italy), and equivalent to sales in the US when factoring in the rest of Western Europe. Annual growth rates for online sales in Europe are higher than in the United States, averaging around 30%, with the greatest increases found in Southern Europe (Spain and Italy).

Growing number of online shoppers

The percentage of internet users who shop online continues to grow in Europe. In the three major markets (the UK, Germany and France) more than one in two internet users shops on the web. In France, the penetration rate for online shopping in the first quarter of 2006 totalled 57%, a 10-point increase over 2005 and a higher growth rate than in the UK and Germany. Along with this increase in the number of online shoppers is an increase in the amounts being spent: with average annual e-commerce spending per shopper in France totalling EUR 940 per year, compared to EUR 1,720 in the UK and EUR 750 in Germany – with the average annual shopping basket in Europe expected to increase by more than 50% by 2010.

Three main e-commerce trends in 2006

- *Concentration of the American e-travel market*
  The consolidation trend that began in the online travel market in 2005 – with Sabre's takeover in May of the last major pure player, Lastminute.com – spilled over into 2006. Owner of the Galileo centralised booking system, Travelport announced its takeover of Worldspan. Booking platform managers (Galileo, Sabre, Amadeus) and the service provider (IAC) which own most of the online travel sites, need to cut their costs to be able to compete with alternative distribution networks, which still control over half of the travel booking market in the United States.
- *Is the era of pure players at an end, as e-commerce comes to maturity in France?*
  Traditional retailers and mail order companies are taking an increasing interest in acquiring e-commerce pioneers, and 2006 was the stage for a series of pure player takeovers in France: Expansys's acquisition of Nomatica, Alapage.com's of Top Achat and Clust, DSG International's of Pixamania, and the 3Suisse group's takeover of 2xMoinsCher.com, along with the partnership formed by Cdiscount and Germany's online discount specialist, Otto. This ongoing trend marks traditional retailers' and mail order companies' growing presence online, as internet shopping has now become a mass market phenomenon.
- *The rise of social networking creating a consumer to consumer (CtoC) trade boom*
  More than 170,000 Europeans live off the revenues they earn by selling items on eBay. This flourishing market has enabled the creation of thousands of micro mail order companies. eBay has invested over 2 million USD in MeetUp, a start-up specialised in local social networks, in addition to having shares in the popular CraigList consumer marketplace, and its own social networking brand, Kijji.

Forecast of European online retail sales, by country

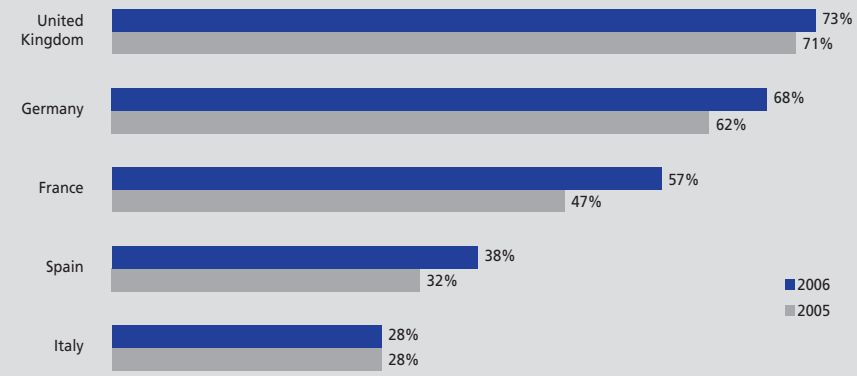
(billion €)		2006	2008	2010
Western Europe	France	12.5	21.6	34.9
	Germany	23.7	39.4	51.3
	Italy	3.8	7.6	12.5
	United Kingdom	42.7	58.7	70.0
	Rest of Europe*	18.5	35.8	47.4
	Total	104.2	170.1	224.7
North America	USA	105.7	160.0	230.0
Asia/Pacific	China	14.0	56.0	110.0
	Japan	30.0	45.0	55.0
Rest of the World	Central and Eastern Europe	16.0	25.0	40.0
	Latin America	14.0	32.0	70.0
	Africa/Middle East	8.0	14.0	24.0
Total		291.9	502.1	753.7

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

Source IDATE based on Forrester Research, 2006

Constant rise in internet users

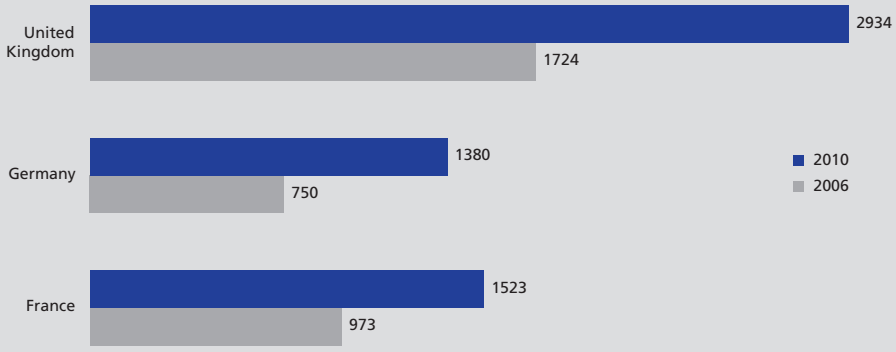
Proportion of internet users buying online



Source Mediametrie/NetRatings, August 2006

Strong rise in online spending

Annual spend of online buyers (in €)



Source eMarketer, September 2006

e-government continues to make strides in Europe

e-government in Europe

One of the European Commission's (EC) prime objectives when creating the i2010 initiative ('A European Information Society for growth and employment'), was to transform public administration through the development of online services. "E-inclusion" constitutes the prime area of focus for 2010, that is, easily accessible online services for all businesses and citizens. Another major objective is to achieve 100% availability of public online procurement procedures, and an actual usage level of 50%.

Growing quality of e-services

The Commission has set out a long-range plan for e-government's evolution in Europe, by tracking 20 basic public services that involve both individuals and businesses. On the business side, the services include employees' social services' contributions, business taxes, VAT and public procurement and, on the citizen's side are income tax, change of address, job searches, car registration and building permits. The development of these e-services is measured by two indicators: the degree of 'sophistication' of online services, and the number of services that are fully available on the internet. In the "*Stages of online sophistication in the EU*" table opposite, stages 1 to 3 correspond to the degree of sophistication (information, one-way interaction, two-way interaction); stage 4 corresponds to the transactional stage (f'ully available online').

In April 2006, e-government services in the EU reached a degree of sophistication of 75% (compared to 65% in October 2004), while full online availability of the services had reached close to 50% (compared to 40% in October 2004). These indicators progressed swiftly between the first measurement taken in 2001 and 2004, but evolved at a lesser pace in 2005-2006.

Austria tops the ranks for both indicators for the 20 services monitored – the country's e-government platform having achieved a very high level of sophistication and optimisation. Online government services in the Scandinavian countries, too, are well advanced while, among the EU's new Member States, Hungary and Slovenia have both been reporting considerable progress since 2004.

Better quality services for businesses than for citizens

As in previous years, there was still a sizeable gap in 2006 between the performance of government services for businesses (which have reached full online availability in some countries), and those offered to citizens (some of which have still not reached the one-way interaction stage). As a result, two-thirds of business services are fully available online, compared to only a third for services aimed at individual citizens. This performance gap is due to the fact that most countries want to test their e-services' capabilities before facing the challenge of opening them up to citizens.

Development of online public services in EU member states

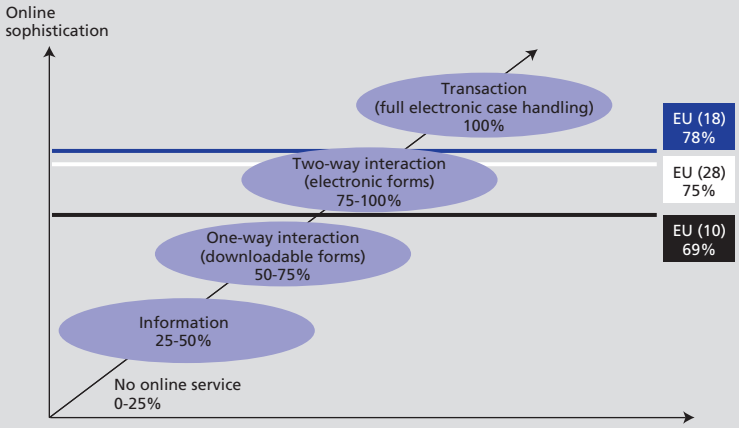
Index	Online sophistication		Full Availability online	
	Oct 04	Apr 06	Oct 04	Apr 06
Austria	87	95	72	83
Estonia	78	90	63	79
Sweden	89	90	74	74
United Kingdom	84	89	59	71
Denmark	81	85	58	63
Finland	83	85	67	61
France	74	85	50	65
Hungary	50	81	15	50
Italy	72	80	53	58
Spain	73	79	55	55
Netherlands	70	79	32	53
Belgium	67	74	35	47
Germany	66	74	47	47
Czech Republic	57	61	30	30
Poland	36	53	10	20
EU(28)*	65	75	40	48

** EU(28) countries include EU-25 plus Iceland, Norway and Switzerland*

Source European Commission, from Capgemini (2006)

From interactivity to transaction

Degrees of sophistication: online services in EU

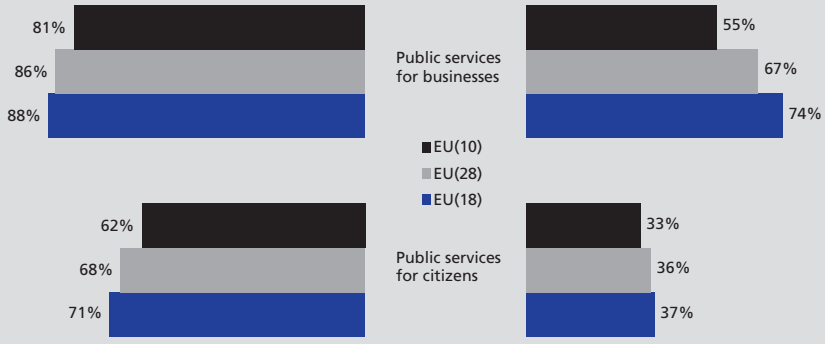


EU(28) countries include EU-25 plus Iceland, Norway and Switzerland; EU(18) include EU-15, plus Iceland, Norway and Switzerland; EU(10) include the 10 new Member States.

Source European Commission, from Capgemini (2006)

More sophisticated services to companies

Performance of public e-services, for citizens and businesses



Source European Commission, from Capgemini (2006)

V Consumer services and content

Services and content: innovation and new business models

Two key trends are likely to stand out in 2007: first, in a bit of a slump – with the global market growing by only 4.5% in 2006 – TV will be looking for new growth outlets through new distribution channels (mobile handsets, the internet) and new services (high definition, video on demand). Second, the accelerated migration of services and content to the web, spurred by the increase in time that users are spending online (roughly 40% of the time devoted to TV viewing), to the detriment of traditional media. This is thanks to the ever-growing range of content available online, with and without copyright holders' approval, and to ongoing innovation in internet services, leading to such statistics as there being close to 340 million IM users around the world in 2006, and over 100 massively multiplayer games on offer).

High definition TV, mobile TV, on-demand: time for a reality check

Although at different stages in their development, mobile TV, high definition TV and video on-demand represent three promising growth paths for television whose more mature markets are suffering a steadily decline in growth.

High definition TV is already a reality in the United States and in Japan: around 10% of households in those two countries consume HDTV services, which are delivered by four types of network: DTT, cable, satellite and, more recently, FTTx.

In Europe, on the other hand, HDTV remains almost exclusively confined to satellite pay-TV, with operators still proving reluctant in their strategies. For pay-TV operators, HD is most often used as a means of expanding their subscriber base and increasing ARPU. Commercial channels, meanwhile, are faced with a difficult financial equation: they need to shoulder the added cost of HD without being able to count on additional revenues, notably from advertisers. Furthermore, the launch of HD services is also suffering from a

lack of available programmes: HD production is weak, as broadcaster-producer relations remain ambiguous, with the former endeavouring to minimise the added cost of high definition production, and the latter asking themselves why they should commit to a more expensive production process without compensation from its beneficiary. As a result, the base of HD-ready sets is still quite small – accounting for only 5% to 8% of households in Europe's major markets at the end of 2006.

The growing number of VoD services, and of households equipped with a PVR, new generation set-top boxes and multimedia PCs nevertheless points clearly to more time-shifted TV viewing.

For cablecos in the US, VoD is key to differentiating themselves from satellite pay-TV offers. A VoD services offers a wide variety of programmes, and is broken down into different formulas (PPV, SVOD, FOD), with the subscription model now gaining ground on pay-per-view.

In Europe, there are still very few VoD services for the TV set, most being delivered over DSL and fibre optic networks. Although we are seeing more and more initiatives in this area – the Italian, French and UK markets being the frontrunners – this type of service is viewed less a means of generating significant revenues in the short term, than as a means of distinguishing oneself from the competition.

An alternative to VoD, a growing number of devices are being equipped with a hard drive capable of storing recorded TV programmes. And ISPs are developing nPVR, or networked PVR solutions, while the leading internet companies are gradually introducing online solutions for storing TV shows.

Mobile video and TV are not confined to services that use 2G/3G networks: broadcast solutions are at either the trial or deployment stage and, when integrated into the digital home, mobile can also benefit from fixed internet access.

So three main types of solution are competing in the market for video transfer and viewing on portable devices: 3G and 3G+ solutions, which are operational but are likely to come up against certain limitations in terms of the networks' capacity to broadcast TV programmes; broadcasting solutions, which are just now being rolled out but require major investments for installing networks that enable indoor reception; and data and file transfer streams over local home networks for indoor use.

Feedback on pioneer mobile TV services is encouraging, and indicates that users do want to have access to their regular TV channels on their mobile. But we are also seeing a growing number of new services that are moving the goal posts: on-demand feature films, interactive programmes using the mobile phone as the return path, and especially access to community video sites on the web.

If consumers do appear to be expressing a demand for mobile TV, its solvency is by no means a foregone conclusion, and different models are being tested:

- Flat rate subscription for mobile access to traditional broadcast TV channels;
- Making a selection of video clips or excerpts from shows available for free on-demand, to provide an incentive for 2G subscribers to switch to 3G services;
- Marketing mobile TV channels through a dedicated premium subscription, given the current meagreness of the advertising market;
- Access to online video sites included in a flat rate subscription for mobile internet access.

The same unknown weighs on all three of these new services, namely: will they constitute a profit centre, capable of attracting new subscribers and/or increasing ARPU, or will they simply be a means of cementing customer loyalty?

The digital home's (slow) emergence

The internet's pervasiveness in homes (thanks to Wi-Fi and other home network solutions), the proliferation of devices capable of recording and playing content, both fixed (microcomputers, Media Centre PCs, personal video recorders, video game consoles) and portable (multimedia players, handheld gaming consoles, mobile phones, PDAs), and ISPs' broadband access boxes, should satisfy consumers' demand for portable content and continuity of service. But because there is no integrated and ergonomic universal solution available, and given the diversity of approaches being taken (*network-centric*, *terminal-centric*, *user-centric*) by fixed and mobile telcos, software publishers, pay-TV providers, consumer electronics suppliers and internet companies, the most widely-used solutions are "home-made" ones, based on customised connectively and software solutions enabling file transcoding.

Community and user-generated content

The ever-growing volume of content available online is largely part of a broader trend of emerging community practices, as illustrated by:

- The proliferation of blogs, and their growing incorporation of video;
- User-generated content distributed on community sites;
- Swift rise in the number of personal video exchange and viewing platforms: YouTube and Daily Motion being two of the most emblematic;
- The massive popularity of social networking sites such as MySpace, Facebook and Bebo, and of sites like Friendster, Friendset and Node;
- Widespread use of P2P software and networks;
- The growing popularity of podcasts, both among consumers and major media players.

The success of massively multiplayer online gaming can also be viewed as a further illustration of the ongoing expansion of community-based activities on the net. The growing diversity of game genres on offer, and the proximity between online gaming and 3D virtual communities could well expand the market beyond its current niche.

Because of its overwhelming popularity, content exchange has now become part of media groups' and the leading internet portals' strategies, and a major battlefield (after News Corp/Fox's takeover of MySpace in 2005, 2006 was the stage for Google's acquisition of YouTube for 1.65 billion USD). The internet giants see the massive increase in available user-generated content as an opportunity to better capitalise on their search and intermediation businesses. Traditional media are working to establish their natural diversification to the web, to limit the risks of losing out on advertising dollars which are currently being invested in the press, TV and radio.

From a more general perspective, 2006 marked a turning point in the major copyright holders' view of the internet. After having sought to limit the distribution of their content online (largely in vain), media companies came to realise that implementing strict DRM systems can penalise consumers too severely and that the internet can well represent a new distribution channel for their products, particularly their back catalogues, and to appreciate the advertising potential that their sites represent. They are at last taking a more open view of things, and launching more and more services on the web.

TV 2.0

As with other types of content, video has made its way onto the web in a variety of forms: video search engines, aggregation of social networking site content, VoD services, simulcasting of traditional TV channels…

Although still in its infancy, it is likely that television's development on the internet will have an impact on traditional media. The growing availability of production and distribution tools will stir up the competition, particularly on the upstream links in TV's value-added chain, and more specifically at the TV channel operation level. Traditional channels will first feel the competition from other media, particularly the press and radio, which will add pictures to their content, before having to face competition from new entrants born of the internet.

Added to this, the internet does away with the need for intermediation to a certain degree, allowing TV programme producers and those who hold the rights to programme catalogues to access viewers directly, and so threatening channel operators' position.

That being said, traditional media still hold some major trump cards, including their unparalleled expertise in content production, and their brand name clout.

And so the question of internet TV's potential for profitability stands squarely at the fore. The business model that seems most likely to take hold is free viewing. But given that, on the one hand, the online advertising market is expected to enjoy slow but steady growth (with overall growth market expected to rise from 4.6% in 2005 to 6.4% in 2008) and, on the other, that online distribution costs are expected to decline over time, new TV 2.0 services are not likely to become profitable until the medium-long term. This could well trigger a consolidation of the most popular sites by the internet giants and traditional media heavyweights.

Any content, anytime, anywhere, any device?

The emerging digital home

Growing demand on the move

The distribution of TV offers no longer stops at the doorstep – consumers now enjoy the ability to circulate content around the home (between devices and users) and on the move (over their mobile phone or portable multimedia player). The concept of the "digital home" is built around this demand for content portability and interconnecting devices. A combination of several factors is shaping its emergence: digitised and electronically distributed content; growing number of content storage solutions; personalisation and individualisation of content consumption; content portability.

But, because of the lack of integrated and well-designed solutions, users are cobbling together "home-made" digital networking systems, based on software solutions that enable file transcoding and customised connectivity.

Heterogeneous solutions

Players from various industries are working to gain a foothold in the digital home market: consumer electronics, computing, telecommunications, internet, content, household equipment – each one promoting their own concept of the digital home:

- The Home Gateway, represented by ISPs' smart boxes and pay-TV providers' set-top boxes.
- The online approach, built around online storage and a set of connected devices.
- Equipping all of the home's devices with a single operating system, as promoted by Microsoft.
- A central storage and content distribution unit, connected to the TV set, as offered by CE (Media Adapter) and computer (Media Centre) manufacturers.
- A central base station that offers wireless interconnection to the home's equipment, under Apple's view of things.

Several factors are helping to shape the digital home's future development:

- The PC is still too sophisticated for most of them, but remains the key point of entry for content downloads;
- Content consumption is becoming an increasingly individualised affair;
- Distributed storage;
- The sustainability of online storage solutions over the medium term still remains to be proven ;
- Interoperability appears difficult to impose, whether based on a proprietary solution or through standardisation.

Emergence of the user-centric digital home

The situation will probably remain fragmented in the short term, with centralised solutions continuing to be the most common approach, involving devices (TV, PC or box) organised around ISPs' terminals. Because no single solution is moving to the forefront – due to a lack of common interface, the absence of a standard, and no consensus on the means of controlling the content – the "homemade" scenario, which requires consumers to undertake complex procedures to manage their content, is likely to continue to prevail.

The development of a base of personal multimedia terminals, combined with widespread internet connectivity (including mobile), will spur the emergence of a user-centric distributed digital home which is built around individual storage, either local or online.

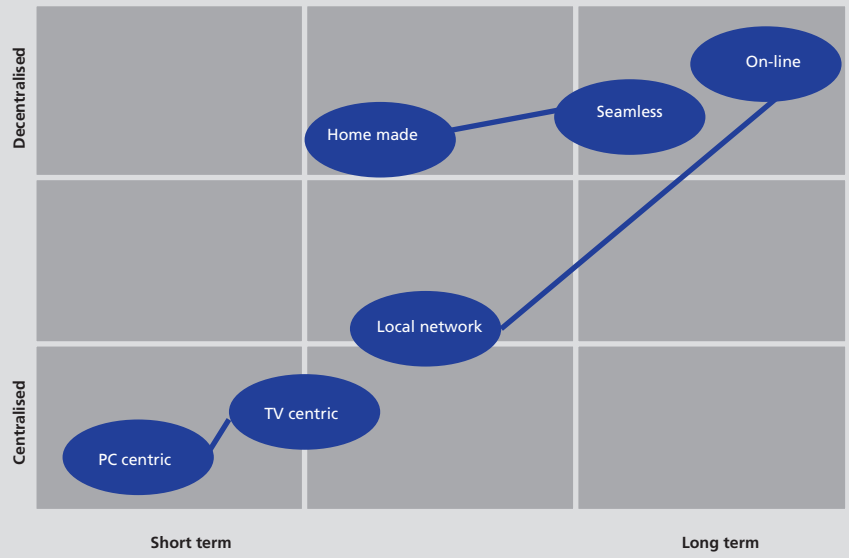
Household equipment in France

Equipment	2004	2006	Growth rate
TV-centric households			
TV	95%	95%	0%
Pay-TV	38%	40%	5%
DVD player with hard drive	4%	na	na
PVR	-	2%	-
Home video game console	29%	30%	3%
Mobile-centric households			
MP3-compatible hifi	12%	-	-
MP3 player	10%	30%	210%
Home mobile	70%	83%	19%
PDA	3%	5%	100%
PC-centric households			
PC	44%	51%	17%
Laptop PC	7%	14%	103%
Household connectivity			
Landline	85%	85%	1%
Internet	28%	39%	39%
Broadband	15%	31%	105%
Wifi	2%	9%	329%

Source IDATE

A rich diversity of approaches

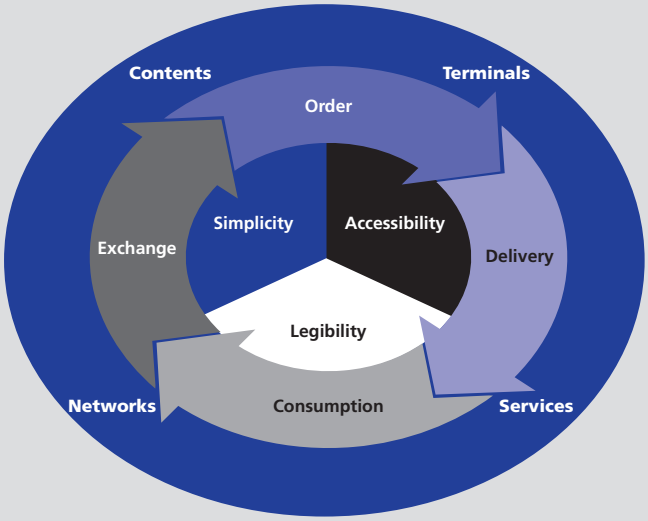
Digital home scenarios



Source IDATE

A complex environment

Digital home ecosystem



Source IDATE

Instant messaging

From the PC's killer applications …

Instant Messaging (IM) began to take hold in the late 1990s as a virtually real-time person-to-person text-based communication system. It has now become by far one of the web's most popular applications (10 billion messages a day, used by close to half of all web users, and for an average three hours a month). The youngest internet users, and teenagers especially, are the heaviest IM users, so much so that it has now become their preferred means of communication.

… to the killer hub, aggregating services

Just as IM has gone well beyond its initial role, and is becoming a multimedia hub, so have MySpace and Google Earth in much the same way. Incorporating such innovative features as presence management (buddies online), IM delivers a growing range of services that have proven very popular with users, in areas that include communication (file exchange, PC-to-PC and even PC-to-phone calls, webconferencing), personalisation (emoticons, avatars, etc.) and, increasingly, entertainment (blogs, games, videos).

IM central to internet companies' strategies …

The internet giants (MSN, Yahoo!, AOL, QQ, Nate), which have dominated this market from the start, are now capitalising on this convergent tool of IM to promote their other services (webmail, blogging, search engine, content…). It acts as a loss leader and a means of securing users' loyalty to a portal, ensuring intermediary revenues from other services. But IM also constitutes a source of direct ad revenue for its top providers, through both conventional formats (banners, pop-ups, sponsorship) and new ones (click-to-call, video ads). Meanwhile, paid services (text messaging, PC-to-phone calling, avatars) remain marginal and are struggling to develop, having to contend with a plethora of free offers, and the lack of an adapted billing system.

Instant Messaging naturally attracts new entrants both generalist portals (Google) and local community portals (Skyrock, Shanda), but the competition structure of consumer-focused IM market has evolved very little since the early days, as the systems themselves are still not interoperable. IM relies on a viral effect, driving consumers to adopt the most widely-used service, and so giving the pioneers a major first entrant advantage. Technical interoperability solutions do exist, using XMPP (Jabber) and SIMPLE, and a number of companies offer multi-protocol clients, but they are little used and offer no guarantees. It seems unlikely that full interoperability is in the cards, since it would facilitate new entrants' access to the market, although we could see bilateral agreements between the major portals, such as MSN and Yahoo!, which would enable them to gain an even tighter lock on the market.

… and to telcos', for delivering VoIP and mobility

We have begun to see a renewed interest in IM among ISPs, using either proprietary tools or those supplied by the leading portals. Most ISPs are not looking to become major IM players, but rather using it for VoIP's capabilities as a communication platform with an eye on fixed-mobile convergence. In the same vein, albeit coming at it from a different angle, IP telephony providers such as Skype, are promoting IM features more and more.

Initially popularised on PC by consumers, IM is now making its way to mobile devices as well, where its potential has yet to be fully exploited. After the failure of their proprietary applications, European operators such as 3 or Vodafone are now looking to join forces with the internet giants, capitalising on their brand name and user community to be able to achieve results comparable to what their North American counterparts have. A case in point: Orange has abandoned its IM service, opting for a co-branded solution with MSN.

Mobile IM has in fact become a major asset in operators' data strategies, enabling them to increase data traffic, which has developed very little despite their efforts, in addition to providing an incentive for heavy users to switch to unlimited data flat rates. For MVNOs in particular, it can also allow them to differentiate themselves with younger consumers.

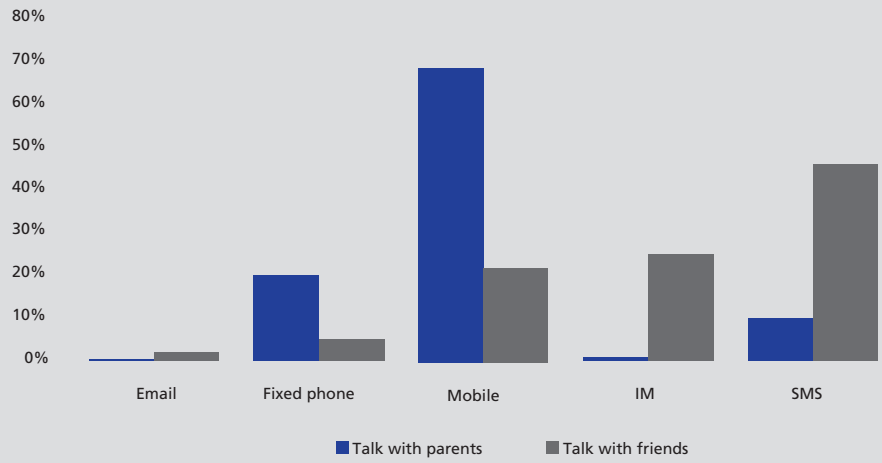
Active IM users

(million users)	2005	2006
MSN/Windows Live	181	204
Yahoo!	79	78
AOL	35	34
ICQ	30	34
Google	0	3.4
Trillian (multi-protocol)	1.2	1.3
Total (excl. double accounting)	310	339

Source ComScore Media Metrix, May 2006

IM still a social tool

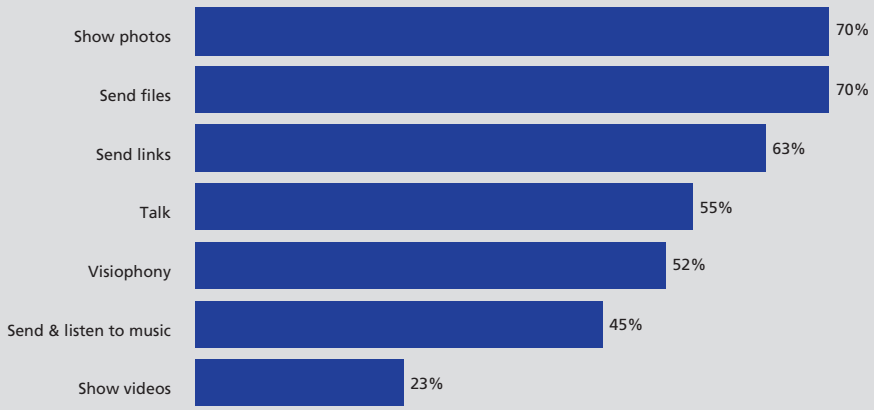
Teenagers' preferred means of communication in France, in 2006



Source IDATE, Use-IT survey 2006

IM becoming a multimedia hub

Teenagers multitasking with IM in France, in 2006



Source IDATE, Use-IT survey 2006

A more virtuous dynamic between pay-TV and free to air

HDTV: is Europe ready?

Europe's HDTV market is in its early days, but the transition to high-definition TV is well underway — and irreversible. Clear strides have been made over the past two years all along the service chain:

- The base of HD-ready TV sets is growing as equipment prices are dropping.
- Although later than planned, HD services have been launched in several European countries.
- The different distribution networks have become, or are becoming, HD-compatible although, depending on the situation, the space available for the services has yet to be confirmed.
- Technical production and broadcasting chains are largely HD-ready.

Two exogenous factors could help spur viewers' exposure to HD services: the launch of HD-compatible video game consoles in Europe in late 2006, and the availability of HD DVD players, which is expected to increase high definition content viewing. Added to this, HD versions of the Olympic Games in Beijing and of the European football championships in 2008 should give high definition a sizeable boost.

What business model?

In Europe, the HDTV market came "naturally" to be through pay-TV offers thanks to:

- A simpler business model: charging an added fee for HD,
- Premium programming, better suited to an HD-quality picture,
- A wide range of services enabling the development of hybrid offers that combine HDTV with VoD, PPV or a PVR.

Other factors, which lie more in the realm of competition, are also helping to boost take-up. Albeit diminished by the recent spate of mergers and acquisitions, competition between pay-TV platforms nonetheless remains strong, particularly now that the market is growing at a steadily decreasing pace. So HD can prove to be key in differentiating an offer, alongside which, given that IPTV is further increasing competition between networks, providers are being forced to find new ways to attract subscribers.

Although the growth prospects for HD in the pay-TV market are undeniable, they are not the way to a mass market. Unlike in the United States, where 90% of households subscribe to a pay-TV offer (of which 55% in digital), pay-TV is much less popular in Europe (30% in France, 40% in the UK), which means that much fewer European viewers are exposed to HD. Furthermore, free to air TV operators are not in the business of promoting pay-TV, but neither are they looking to deprive their viewers, most of whom currently do not have access to high-definition programming.

As a result, the launch of free to air HDTV services would be the only way to allow the majority of viewers to take advantage of this technological advance, and the transition can only come about on the initiative of the leading private and public general interest channels.

The timeline for the analogue switch-off is expected to penalise HDTV rollouts on the terrestrial network, and so give satellite the edge. Satellite could thus very well play a central part in the launch of a free to air offer, given that, unlike terrestrial networks, it has no lack of surplus broadcasting capacities and remains the most efficient in terms of per-channel transport costs. Satellite is also an ideal complement to DTT, and so could help enhance the digital terrestrial offer with HD.

In the most dynamic markets, IPTV could offer a midway solution for gradually enhancing the service, at no extra charge to viewers.

IDATE estimates that, by 2008, the market conditions needed for free to air HDTV's development could be in place in Europe's major markets, with the rollout of satellite high definition services and the introduction of an HD offer on general interest channels. The question of the added costs involved in launching an HD offer nevertheless remains, and the way in which the offer will be introduced (consortium managing the service, set-top box orders) has yet to be defined. As a result, a mass market for HD over the digital terrestrial network is not likely to see the light of day before 2010, at best.

HDTV carriage over TV broadcasting networks in Europe

Network	European standard	Max. available bitrate	"Channels" correspondance	Number of HDTV (MPEG2, 15/18 Mbps) services	Number of HDTV (MPEG4, 8 Mbps) services
Satellite	DVB-S	38 Mbps	1 transponder 36 MHz	2	5-6 (with DVBS-2 at 50 Mbps)
Terrestrial	DVB-T	24 Mbps	1 channel of 7-8 MHz, 64 QAM	1	2 + SD channels?
Cable	DVB-C	38 Mbps	1 channel of 8MHz, 64 QAM	~ 2	~ 5 (QAM 256 at 52 Mbps)
ADSL 2+		> 20 Mbps	1 channel of 2.2 MHz	~ 1	1 or even 2?

** Non exclusive, corresponds to main rollout announcements, by zone.*

Source IDATE

Pay-TV offers dominate the European market

Examples of HD marketing modes in Europe

Premiere Premiere HD Film**
Discovery HD**
Premiere HD Sport**

C More C More HD**
Canal+ Sport HD**
(in 2007)

Sky Digital Sky One HD
Artsworld HD
National Geographic HD
Discovery HD
Sky Box Office HD (PPV)
Sky Sports HD**
Sky Movies HD**
BBC HD*

* Generalist channels including HD programs

** Conditioned by the correspondant HD service subscription

CanalSat Canal+ HD**
National Geographic

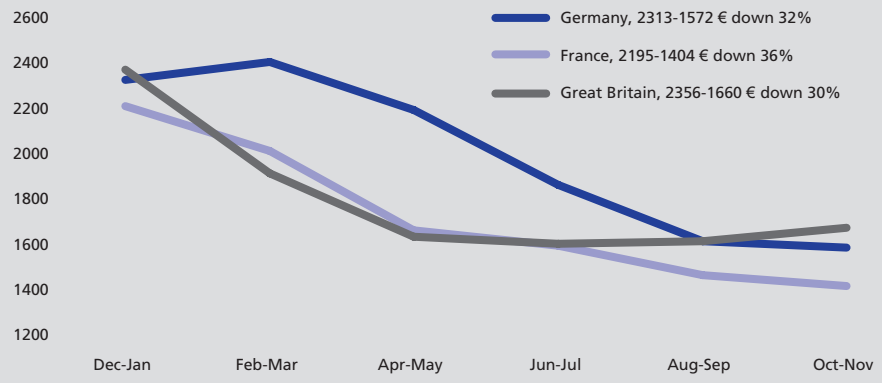
Sky Italia Sky Sport HD**
Next HD
Sky Cinema HD**
National Geographic

TPS TF1*
M6*
Arte*
Ushuaïa TV
Luxe TV
TPS Star**
TPS Home Cinema**
TPS Foot**.

Source IDATE based on operators

Steady drop in HD-ready TV set prices

Evolution of average LCD HD-ready TV prices in 2005



Source Gfk

Mobile TV: access market or content market?

How to monetise demand?

Channels for offering mobile TV and video

There are three main options for distributing mobile TV and video services:

- Unicasting, which uses the cellular network (for streaming or downloading): widely-used by operators, this option could have trouble supporting widespread use of mobile TV at an affordable cost.
- Multimedia Broadcast/Multicast Service (MBMS), which is still at the experimental stage.
- Broadcasting, a solution which uses a terrestrial and/or satellite network, at least for the downlink, and which requires a standard to be established, along with sizeable investments (particularly for indoor reception).

Furthermore, the mobile phone is gradually taking hold in the digital home as a portable player on which users can store and consume multimedia content, while fixed-mobile convergence is ushering in the possibility of connecting a mobile phone to the fixed web over Wi-Fi, and so giving users the ability to take advantage of VoIP services and to access content.

The specific nature of each solution could lead to network specialisation, depending on where the content is being consumed, and the type of content involved.

- Cellular networks for mobile VoD;
- Broadband internet access for transferring live TV broadcasts to a mobile at home;
- Dedicated live mobile TV network, particularly outside the home;
- A portable multimedia player for watching files downloaded at home, when on the move.

Emergence of new services

The development of mobile and TV services brings with it new solutions geared to satisfying consumers' demand for personalised content, interactivity, mobility and continuity of service.

Community video, which has become hugely popular on the web, is now finding its way onto mobiles. More and more content sharing sites are setting up services that let users send online videos and watch them on a mobile phone, and mobile network operators are working to create their own video communities. The ultimate stage of interactivity and programme personalisation, incorporating user-generated content into mobile VoD services, gives consumers the opportunity to become their own content publishers.

Another novelty is the advent of the mobile PVR. Operators offering feature films as part of their mobile VoD service have installed solutions to make viewing easier, such as full-length movies that can be watched either in a single go, or in parts. Users can therefore pick up their viewing where they left off, and watch the film as often as they want during the rental period. The advent of mobile PVR features paves the way for greater continuity between watching at home, on a TV set or a computer, and viewing when on the move.

What market for mobile TV in the medium term?

On the whole, the mobile TV market could be partially pre-empted by fixed access providers, and eventually be integrated into the mobile internet access market. As a result, although mobile TV and video viewing is expected to rise, the likelihood of mobile operators being able to monetise it directly is more problematic. Under the best case scenario, mobile operators' revenues, minus paybacks to content providers, are expected to represent 1% to 2% of their current income.

In the same vein, revenues for content providers would likely represent 3% to 4% of the "subscription and advertising" revenues currently earned from these operators.

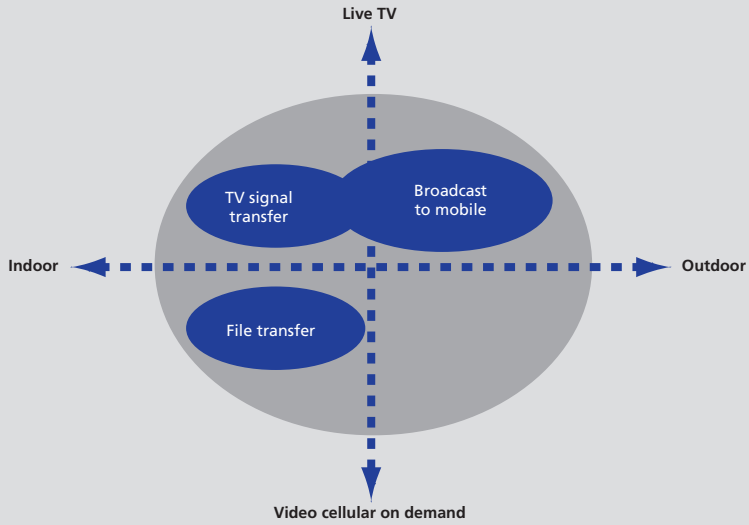
Mobile TV market

(million €)	2006	2007	2008	2009	2010
France	25	34	206	409	618
Germany	13	40	109	246	476
Italy	45	118	249	484	828
Spain	6	21	49	118	269
UK	20	65	162	346	624

Source IDATE

A complex ecosystem

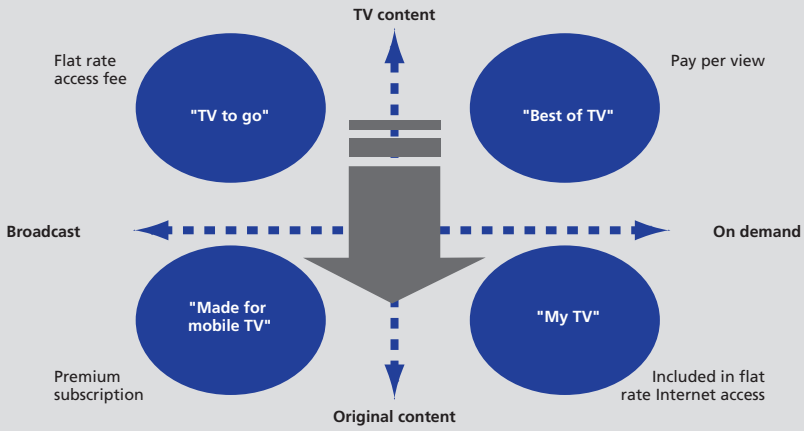
Channels for distributing to mobile devices



Source IDATE

Shift to specialised business models

Dominant pricing models for mobile TV and video



Source IDATE

Advertising: more monies being earmarked for the web

TV: facing the threat of ad investments moving to the net

The internet's growing weight in ad spending

Advertising spending in 2005 totalled roughly 320 billion EUR worldwide, all media combined. After having dipped slightly that year, the market is expected to grow at a rate of around 6% annually, starting in 2006.

Although television remains the medium of choice, with its weight in the equation holding more or less steady at around 37% of all ad spending around the globe, the internet's share of the pie just keeps on growing, at the expense of print. The internet accounted for 4.6% of total ad spending around the world in 2005, a share that is expected to increase to 6.4% in 2008, while the sums being spent on online advertising between 2005 and 2008 are estimated to grow by 65% worldwide, compared to a maximum 15% for print and radio.

The internet as a medium now plays an undeniably significant role in advertisers' strategies and, naturally, its weight in the equation tends to increase parallel to the rise of internet take-up in households, to the increase in the average amount of time users spend online, and to the growing efficiency of online tools offered to advertisers.

Growing efficiency of the internet medium

New online advertising formats have made great strides, notably video commercials which are more capable of attracting users' attention, and boast a higher rate of recall than classic banner ads. Although revenues generated by online video ads are still limited (around 2.5% of online ad revenues in 2006), they are enjoying swift growth, and could reach 1.2 billion EUR in 2009 (7% of online ad revenues).

The existence of an online ad market requires the implementation of more accurate audience measurement tools. These tools are geared to satisfying the demands of online ad buyers (advertisers, ad departments and agencies), since audience measurement is used for setting ad rates. Given the internet's singular nature, notably the ongoing evolution of advertising formats and editorial content, combined with a highly segmented offer, audience measurement is geared not only to measuring the number of visits a site gets, but also to qualifying its readers.

As a result, new advertising tools have been developed with the goal of increasing the internet's appeal to advertisers by enabling them, among other things, to measure the effectiveness of their online ad campaigns. One interesting example is French company Ipsos-ASI's adaptation of the advertising post-test methodology to the web. It involves polling a sample of internet users after an online ad campaign has run to ensure that it has been seen and understood, and to measure its impact, notably in terms of brand image. Although not yet used systematically to assess online campaigns, the practice is becoming increasingly common.

Towards "enriched" and multiplatform campaigns

Although slow to develop, using the web as a new advertising medium is rapidly picking up steam. It is a medium that enables more targeted advertising, in addition to providing a response to the growing trend of individualised consumer behaviour. It also provides advertisers with the ability to quickly adjust their campaign, and to make use of new marketing techniques (notably viral), and so the opportunity to innovate and forge closer ties with consumers.

Although TV remains the medium of choice, the internet's role as a substitute is growing, particularly with the younger generation which is spending more and more time online, and less and less of it watching TV, in addition to being more inclined to watch programmes on-demand and to skip the commercials. These new behaviour patterns constitute a sizeable challenge for advertisers, who need to incorporate new media, and particularly the web, into their campaigns if they hope to reach the young crowd and, eventually, the mass market. The broadcast TV model has nevertheless maintained its clout and credibility, particularly with respect to brand name recognition and for launching new mass market products, and so is not likely to see its power diminish in the medium term.

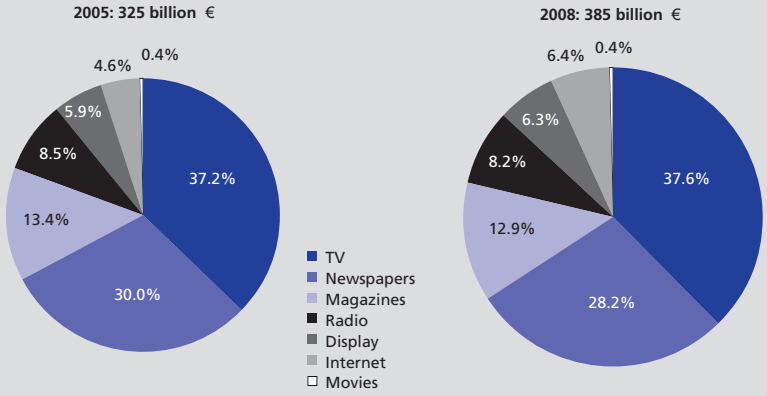
Worldwide advertising spending on the main media

(billion €)	2004	2005	2006	2007	2008
North America	135.3	139.3	146.4	152.8	160.2
Europe	84.1	86.9	90.9	95.0	99.0
Asia/Pacific	63.4	66.5	70.5	76.0	82.1
Latin America	12.5	14.6	15.8	17.2	18.6
Africa/Middle East/Rest of the world	14.6	17.2	20.0	22.4	25.2
World	309.8	324.6	343.6	363.3	385.1
Annual growth rate	7.4%	4.8%	5.9%	5.7%	6.0%

Source Zenith Optimedia

Internet's growing share of world advertising spends

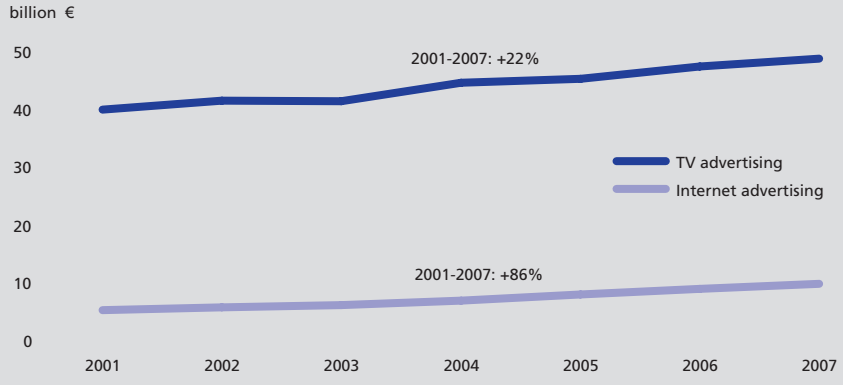
Share of worldwide advertising spending, by media, between 2005 and 2008



Source IDATE based on ZenithOptimedia

Still going strong: the TV ad model is here to stay a while yet

Growth of TV and internet ad markets in US



Source IDATE based on ZenithOptimedia

TV 2.0, rise of a universal alternative TV…

A new way of watching TV

The internet's recent history has been marked by the development of a series of trends, most notably the explosion of user-generated content, which does seem to be driving the mass media towards an era of increased personalisation. As a result, the TV industry is in the throes of a shift towards a new web-centric model: TV 2.0, operating alongside the traditional TV model.

The outstanding features of TV 2.0 are:

- The extreme diversity of the content on offer;
- The possibility for all individuals to contribute to the programme offering;
- Increased on-demand TV viewing capabilities *("what I want, when I want, where I want"*), both fixed and nomadic, thanks to the use of new devices and "personal" services.

TV 2.0 offers a "universal alternative TV" model, distributed on the web through a growing number of vlogs, video podcasts and personalised or independent Web TV platforms. It is also being spurred by online initiatives by top media groups and internet companies (broadband TV channels, simulcasts, video search engines, web reality shows…).

Furthering the trend is the implementation of Time-Shifting, Place-Shifting and Device-Shifting, pointing to the supposition that, ultimately, viewers will have full control over their TV watching.

Critical provisos

For TV 2.0 to take hold depends on a set of critical factors coming together – which no one player controls single-handed. These factors include:

- TV households' massive adoption of the concept represented by multimedia home networks;
- A significant shift in viewing time choices, notably a massive increase in the time spent watching video programmes online.
- A corollary redeployment of ad monies to the internet, capable of supporting TV 2.0's supposed revamping of the television offer;
- A choice by the internet's pure players to move beyond their current function of intermediary, to become digital video content producers and publishers, and so making the web more than just a new channel for promoting and distributing TV channels broadcast by TV channel operators.

Ultimately, however, given the size of the challenges that these hypotheses represent, TV 2.0's emergence, and particularly the likelihood of the internet becoming a serious rival for TV's traditional players, seems uncertain at best.

But a more propitious environment

The Web TV sector is nevertheless benefiting from a number of favourable trends which, over the past two years, have included:

- Users spending more and more time online, and less in front of the TV.
- Although still in its infancy, on-demand video and online TV viewing is tending to be on the rise, particularly among the younger generations who are heavily involved in the web's community building.
- An increasingly broad array of video content available online: promotional videos, old TV programmes, amateur and semi-professional productions have invaded the web, alongside catch-up TV services that let viewers watch recently aired programmes (in some cases for free).
- And, finally, the steady decrease of online digital content transport and storage costs is providing an incentive to develop new services, and enabling significant progress to be made in online video distribution technologies. In particular, P2P seems destined to become a credible means of distributing TV programmes on the net, either through file downloads or, further on down the road, real time video streaming.

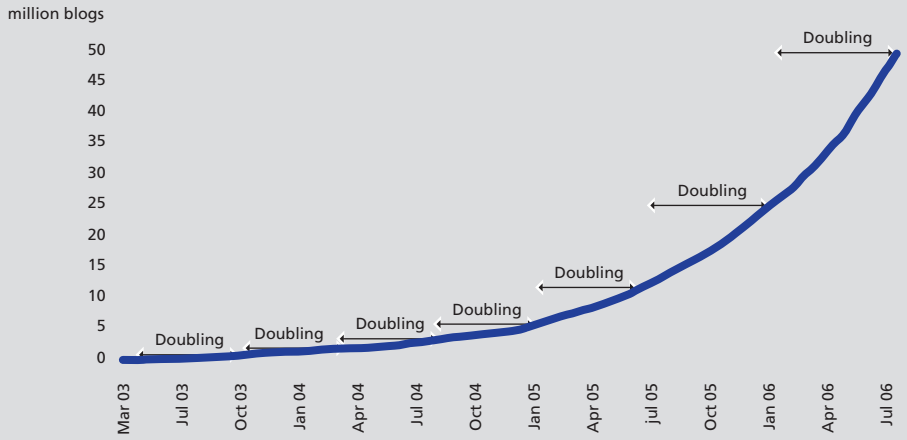
Internet TV's gradual rise

(% of Internet users who used Internet to watch TV or to listen to music at least once over the past year)	Watching TV	Listening to Music
France	48%	62%
Germany	36%	67%
Italy	35%	69%
Spain	38%	77%
UK	32%	78%

Source InSites Consulting

The user-generated content explosion

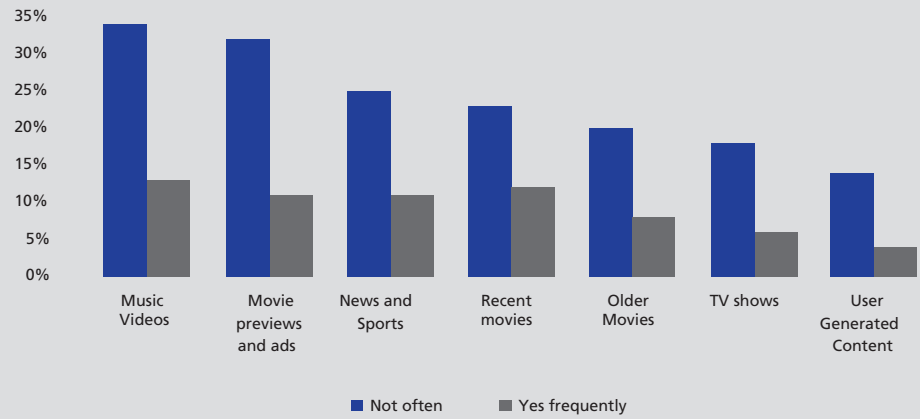
Cumulative Weblogs since 2003



Source Technorati

Music clips and banner ads are viewed most

Type of video content watched by European internet users



Source INDICARE - Digital video usage and DRM, February 2006

Web 2.0: is a new speculative bubble forming?

Advertising: the dominant Web 2.0 model

The user-centric web

Available technologies are at last giving all web users the chance to take part in shaping the internet. The use of existing technologies (P2P, open source, XML, HTML, Java, Ajax ...) is gradually enabling the democratisation of online content production and sharing, and so spurring the development of online communities.

The Web 2.0 model, which is based on this phenomenon of collaboration between a large community of users, is the mainstay of a wide array of new and very popular sites, such as Flickr (photos), Del.icio.us (bookmarks), Coudmark (collaborative anti-spam system), Wikipedia (encyclopaedia), YouTube (video) and Digg.com (where users submit articles and posts for other users to rate).

For internet users, the community nature of Web 2.0 materialises through their ability to find, organise, share and create information in a manner that it is both highly personal and widely accessible. Use of these applications relies on viral marketing, with recommendations spreading from user to user. As a result, Web 2.0 is based on the central premise whereby a service automatically improves as its user base grows – in other words the same operating principle of P2P file sharing systems (the more popular a file, the faster it is to download).

Ad revenues at the heart of the Web 2.0 business model

A growing number of companies are now working to incorporate a Web 2.0 component in their offering. Except for a handful of exceptions, such as non-profit sites (Wikipedia), online retailers (Amazon, eBay) and paid sites (LinkedIn, Viaduc), the dominant Web 2.0 business model is advertising, the key being to attract the largest possible audience. Web 2.0 sites that offer a large body of user-generated content constitute an inexhaustible source of advertising potential. The greater the social network effect, the larger the site's audience, and so the more valuable an ad on that site.

Given the growing number of sites of this nature, it is entirely legitimate to wonder whether the online advertising market is capable of sustaining them all. Although ad revenues are growing at a very healthy pace, most are still concentrated around a small group of players: the internet's two titans, Google and Yahoo!, boast a combined 40% share of the online advertising market. Because the wealth of Web 2.0 sites resides in user-generated content, the players with the largest community of users – hence the largest body of data – are the ones most likely to prove financially viable. The advertising revenues a site can generate will depend entirely on the size and segmentation of its user community.

It is also worth noting that the cost of running these sites is comparatively low (no rights acquisitions, and community-managed).

Is Web 2.0 a speculative bubble?

Web 2.0 has given rise to a new wave of takeovers, notably by major media groups and often with very high price tags: NBC took control of women's portal, ivillage, for 600 million USD, and of social network, Tribe, for 50 million USD; Google bought YouTube for 1.65 billion USD and photo sharing site, Picasa; Yahoo! acquired photo sharing site, Flickr, for 35 million USD, along with bookmarking site Del.icio.us … Aside from the desire to acquire innovative technologies, the motivation behind most of these takeovers is to capitalise on social networking sites' advertising potential, thanks to their massive user base. A prime example here is MySpace, which Google will be paying 900 million USD over the next four years for exclusive rights to its search function and advertising.

The decrease in the costs required to launch an internet start-up company (notably computers, infrastructure software, online marketing) has meant a growing number of projects financed by venture capital. A certain number of Web 2.0 start-ups are indeed created in view of a quick flip, before even establishing a viable business model.

As a result, a speculative bubble around Web 2.0 remains entirely within the realm of possibility.

Main sources of income for internet giants

Player	Advertising	Paid services (incl. mobile)	Transactions	Internet access & telcos	Other
MySpace	Close to 100%	<1%			
Google	99%				1% (business serv.)
Baidu	95%				5%
Yahoo!	87%	12%	<1%		
Sohu	66%	31%			3%
NHN (Naver)	58%	25%	8%		9%
AOL	16%			81%	3%
QQ	10%	90%			
eBay	3%		73%	<1% (Skype)	23% (PayPal)
Amazon	<1%		Close to 100%		
Meetic		100%			

Source: IDATE based on portals' financial data

The Join The Club Effect: social networking's major asset

Social networking: entry barriers and financial potential

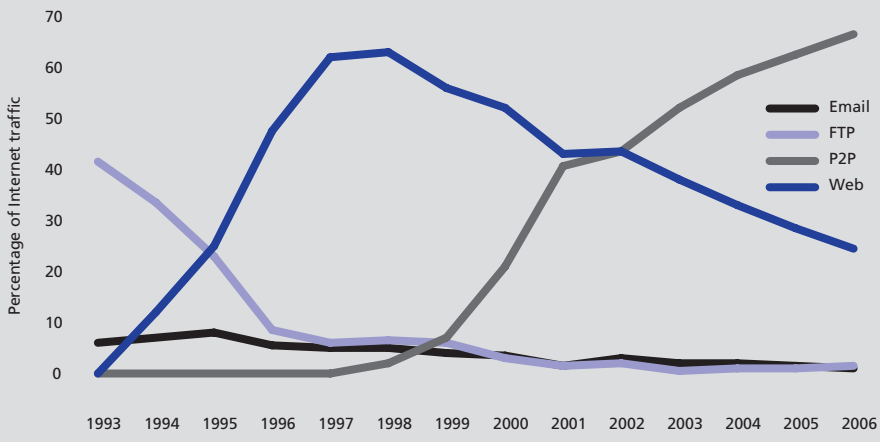
Technical barriers	Marketing barriers	Economic potential
Technology which is often very easy to implement or reproduce (cf. number of blogging platforms).	High entry barrier, due to the service's dependence on building a community: high club effect.	Low direct revenues. Indirect revenues tied to the size and segmentation of the user community. Good potential for profit thanks to very low management and especially acquisition costs (viral).

A selection of reference services: MySpace, Cyworld, Skyblog, OhMyNews, YouTube, Flickr (Yahoo!), ChinaRen (Sohu), Facebook, Habbo Hotel

Source IDATE

P2P now the internet's most widely-used protocol

Internet protocol use between 1993 and 2006



Source Cachelogic Research

Online gaming: going beyond a niche market

From *World of Warcraft* to *Second Life*

In the top three markets alone, namely the US, Japan and Europe, gaming software sales are expected to reach 24.7 billion USD by 2010, at which point MMOG software could account for more than 10% of the market's revenues. A new era for these persistent universes is being ushered in by the diversification of gameplay and genres, more specifically the mix of genres and gameplay. The majority of MMOG titles are role-playing games in a medieval or heroic fantasy universe – attracting hardcore gamers capable of spending hours honing their virtual character's experience.

Community at the heart of MMO

The MMOG gamer community is a unique media phenomenon. It plays an active role in bringing the content to life, in some cases writing the scenario while playing, has a starring role in the dynamic, and contributes more or less significantly to the game's design, primarily in the beta phase. This phenomenon is a result of the desire internet users to be actors in their digital entertainment. The players' interaction with their gaming environment is a central preoccupation, and they will experiment with the way the adventures they experience in the MMOG play out. These games have even given birth to a genre of literature which is shared on community sites, along with a host of gamer forums, and more.

An emerging ecosystem

It is Asian companies in particular that are helping business models to evolve. Initially based on subscription, they appear to be branching out into multiple variables, combining purchase and non-purchase in a retail outlet or online, monthly subscription or free, virtual goods trade, ad-based financing…

A host of transactions now take place within MMOGs: auctions, purchases, sale of virtual items, land and virtual buildings, exchanging real for virtual money… all are contributing to a new revenue stream for game vendors, who earn a commission on the transactions that take place between the players themselves or through the game's online operator.

Persistent universes beyond the game…

The success of online gamer communities is opening up prospects that go well beyond the video game. Massively multiplayer game developers have managed to forge the contours of virtual 3D universes where members of the public other than hardcore gamers can now venture.

As a result, new universes are appearing, such as the one created by *Second Life* (Linden Lab), built around the concept of a parallel world duplicated in 3D. Through their avatars, players can interact with one another following dynamic rules that mirror the real world, and which are being transposed to increasingly realistic virtual universes.

The stakes involved here thus go well beyond the issues of the gaming industry, and are becoming those of virtual societies, giving rise to sociological, social and cultural issues, along with questions concerning communication, private property, rights, identity…

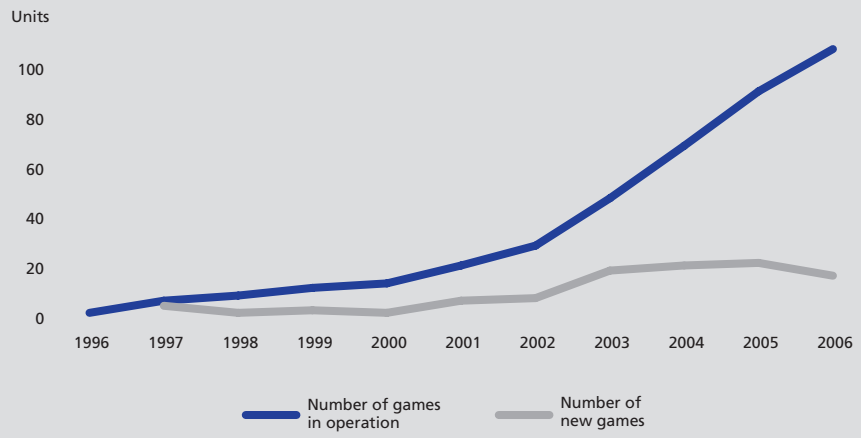
The market of the Massively Multiplayer Online Game

(million €)	2001	2002	2003	2004	2005	2006
Europe	109.5	134.3	166.4	191.7	219.6	298.6
Japan	98.2	108.6	122.5	111.3	107.1	131.1
USA	171.5	238.4	346.0	455.4	503.1	655.7
Asia/Pacific	259.2	356.8	509.8	570.9	618.3	750.5
RoW	76.6	96.3	106.6	115.4	128.3	181.6
Total	714.9	934.4	1 251.3	1 444.6	1 576.4	2 017.4

Source IDATE

More than 100 MMOGs on offer

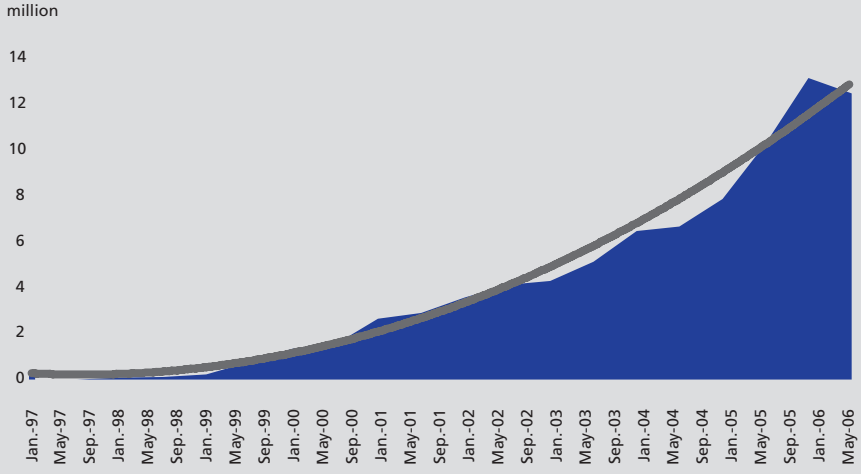
Growth of MMOGs (1996-2006)



Source IDATE

Skyrocketing gamer community

MMOG subscriber growth



Source IDATE

DigiWorld Chronicle

- Endesa has sold its remaining 5.01% stake in **Auna** – parent company of Spanish mobile operator, Amena, which was recently taken over by France Télécom – to **Deutsche Bank** for 378 million EUR.
- US investment fund, **Advent**, which in 2004 had acquired a 65% share in incumbent telco **BTC** (Bulgarian Telecommunications Co.) for 230 million EUR, has resold its stake to Icelandic investment fund **Novator**.
- In India, Malaysian operator **Maxis** and India's Reddy family have spent 1.08 billion USD to take control of **Aircel**, the country's 6th largest mobile operator, serving a base of 2.2 million customers.
- Six years after the marriage of Viacom and CBS, the group is split into two separately managed and listed companies, namely: **CBS**, which controls the traditional assets (TV, radio, publishing, display) and **Viacom**, which will control the specialty channels and film assets.
- Japanese mobile operator, **NTT DoCoMo**, will be investing 300 million USD in Philippine long distance carrier **PLDT**.
- Japan's **Matsushita**, the world's top producer of plasma flat screen TVs, will be investing 160 billion JPY (1.15 billion EUR) to build the world's largest plasma screen faceplate production plant, in Japan.
- After having taken over three design studios in 2005 to boost its presence in the console market – and new gen consoles in particular – Vivendi Universal's video game subsidiary, **Vivendi Universal Games** (VUG), announces the acquisition of **High Moon**.
- American Internet giant **AOL** acquires video search engine **Truveo.**
- Belgian network integrator **Telindus** has accepted **Belgacom's** takeover bid. Belgium's incumbent carrier owns 90.8% of its compatriot's equity at the outcome of the buyout offer.
- **Virgin** has sold its 74.15% share of **Virgin Mobile Australia** for 19 million EUR to operator **Optus**, a **Singapore Telecom** subsidiary which already controls the remaining equity.
- **Fujitsu** has announced a two-year, 120 billion JPY investments to build a plant in Japan that will produce semi-conductors for servers and consumer electronics products.
- Japan's **Sharp**, the world's leading supplier of LCD televisions, has just announced that it has earmarked 200 billion JPY to develop production of its new plant in Kameyama, which would bring the group's global production capacity to 20 million screens a year.
- French incumbent telco, **France Télécom**, has announced the launch of a pilot FTTH (GPON) project by summer 2006, which will be carried out in 6 Parisian *arrondissements* (districts), and 6 nearby towns.
- US search engine **Google** has announced the acquisition of **dMarc Broadcasting** for 102 million USD. dMarc Broadcasting has developed an advertising marketing platform aimed at radio stations.
- US telecom equipment manufacturer, **Motorola**, has taken over Swedish set-top box maker, **Kreatel**, whose client base includes Telefónica, TeliaSonera and KPN.
- Germany's **Siemens**, the United States' **General Electric** and Japan's **Mitsubishi** will be joining forces to market freight container security solutions, through a joint venture called **CommerceGuard AB**, of which GE owns 86%.
- Italian incumbent, **Telecom Italia**, has announced the full sale of Venezuela's number one mobile operator **Digitel** (1.7 million subscribers in 2005) to **Telvenco** for 354 million EUR.
- **Tele2's** parent company is said to be willing to sell off **Millicom**, a 38%-owned subsidiary that operates mobile networks in 16 developing countries. Millicom has a market worth of close to 2.5 billion EUR.
- Germany's anti-cartel office has made official its opposition to the sale of private TV channel bouquet **ProSiebenSat.1** to Axel Springer, Europe's largest written press conglomerate.
- UK mobile operator **O_2** is poised to be taken over (for 26 billion EUR) by Spanish incumbent, **Telefónica**, which has received the go-ahead from the European Commission.
- **Nokia**, **Motorola**, **Intel**, **Modeo** and **Texas Instruments** will be forming an alliance to promote the adoption of DVB-H mobile TV broadcasting technology in the US. The consortium is also geared to countering the offensive led by US equipment manufacturer, **Qualcomm,** and its own mobile TV technology, Mediaflo.
- Media group **CBS Corp.** (born of the Viacom split) and **Warner Bros** studios (part of the Time Warner stable) have announced the creation of a joint venture to launch of a new terrestrial TV network in the US, through the merger of two of their existing networks: UPN and WB.
- **Pixar's** Board of Directors has accepted **Disney's** takeover bid – a deal worth an estimated 7.4 billion USD that will consist entirely of a share swap.
- The five investment funds (the Nordic Telephone Company consortium which is made up of UK funds Apax Partners and Permira Advisors, along

with US equity groups Blackstone, Providence Equity Partners and Kohlberg Kravis Roberts) have finalised their takeover of Danish incumbent telco, **TDC**, after having spent 10 billion EUR to acquire 88.2% of shares through a public tender.

- UK telecom operator, **Vodafone**, has signed a partner network agreement with **Telekom Malaysia** for use of its brand. The agreement also involves TM's subsidiaries in Indonesia, Sri Lanka, Bangladesh and Cambodia.
- The Spanish government has nixed **Telefónica's** attempt to take control of rival **Iberbanda**, a WiMAx ISP, stating that the takeover would be detrimental to market competition.
- **Warner Bros** studios announces the launch of an online video sales service (In2Movies), operating in P2P download mode. The service will be accessible in Germany, Austria and Switzerland. Movies will be made available online on the same day as their release on DVD in the given country.

When India awakes…

Over the past several years, India's telecommunications market has been enjoying a very healthy growth momentum, and 2006 no doubt marked a real turning point in its development.

The number of mobile customers in India close to doubled over the course of the year, rising from 75 to more than 140 million, while the newly-emerging broadband market was serving a base of 3 million users at the end of the year. In both cases, it is above all the prospect of a market of one billion people which points to still considerable room for progress. This is particularly true for mobile – a market that is expected to double by 2010, with an expected penetration rate by that time of over 30% (i.e. the current mobile penetration rate in China).

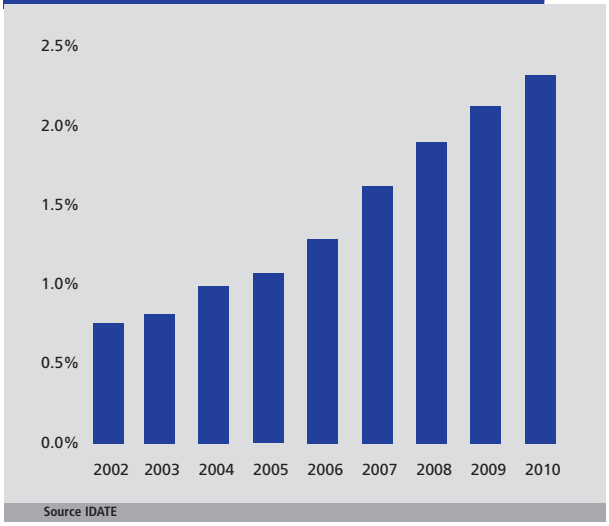
The Indian market's outlook is also being shaped by recent changes in the competition landscape. Up until 2005, although the landline market was, in theory, an open one, the cost of licences and the terms of admission put off most potential investors. The country's long distance calling market was thus populated by only three carriers: BSNL, Reliance Com and Bharti Airtel – a lack of competition that left the Indian sub-continent relatively isolated in the international market. A new law that came into effect at the start of 2006 both decreased the price of licences and altered the rules (including the possibility for non-telecom players, notably utilities, to become involved in the fixed segment) and is expected to enable new entrants to help create a more dynamic market.

In a similar vein, it was the introduction of competition in the mobile market back in 2003 that helped spur a growth momentum, while operators continue to make massive investments to be able to satisfy a demand which has still, by and large, yet to be met.

As concerns broadband, in addition to ADSL and to compensate for (or justify) the absence of LLU, competition is evolving through the development of operations based on a variety of technologies, such as Wi-Fi and WiMAX.

On the whole, the combination of an open offer (or one in the process of being opened up) and a still potentially huge demand points to exceptional growth in the Indian market in the coming years, at least in terms of customer numbers – as growth in value needs to be put into perspective, given the standard of living in the country.

India's share of the telecom services market (% of the world market)



Source IDATE

- **Nortel** and **Huawei** have signed a protocol agreement to create a joint subsidiary (with majority control for Nortel) devoted to ultra-broadband network access products, primarily DSL.
- **France Télécom** and the **Canal+** group have both sold off their 20% stake in France's number two cableco, **Ypso**, to the **Cinven** investment fund and cable company **Altice**.
- Portugal's number one economic group, **Sonae**, states that it is willing to spend 12.5 billion EUR to acquire incumbent carrier **Portugal Telecom** and its media subsidiary, PT Multimedia, through two public buyout offers.
- **DirecTV** announces that it will be unveiling a wireless broadband telecom infrastructure project, which will involve collaboration with its rival, **Dish (EchoStar)**. The operator could invest up to 1 billion USD in acquiring frequencies and a WiMAx network.
- **Nortel** will pay out 2.47 billion USD to settle two class action suits filed by its shareholders, after having admitted in April 2004 that its reported profits for the year 2000 were unreliable, due to misappropriation of funds.
- After having considered a takeover, VoIP operator and Skype competitor, **Vonage**, is now announcing its intention to launch an IPO and has filed plans with regulators to raise up to 250 million USD by going public.
- Japan's number one mobile operator, **NTT DoCoMo**, has signed an agreement with **Nippon Television Network (NTV)** and so confirming its ambitions in the mobile digital TV market, coming on the heels of its December 2005 acquisition of a 2.6% stake in Fuji TV. The operator and the country's number two TV channel will each be investing 5 billion JPY in a fund created to design TV services that can be adapted to mobile.
- Spain's **Sogecable** takes control of **Canal Satellite Digital**, renamed **Digital Plus** after the cableco bought up the remaining 14.5% share from **Warner**, for close to 109 million EUR.
- Russia's second largest mobile operator, **Vimpel Communications**, bids 5 billion USD in shares to take possession of Ukrainian operator, **Kyivstar.**
- **Microsoft** has announced the takeover of small French firm, **MotionBridge**, specialised in mobile content search technologies.
- Britain's incumbent telco, **BT**, has announced an agreement with production company, **Endemol**, for the latter to supply programmes for its future web TV channel, which is scheduled to launch in the autumn.
- IP telephony pioneer, **Skype** (which was recently taken over by US company eBay), has announced a partnership agreement with mobile operator **Hutchison 3G**, which plans on launching services later in the year in countries where it currently operates (Austria, Australia, Hong Kong, Sweden, the UK and Italy).
- **Sanyo**, the world's top producer of rechargeable batteries, creates a joint venture with **Nokia**, the globe's number one producer of mobile phones, to develop sales of third generation (3G) mobile handsets compatible with the American CDMA standard.
- Mobile operator **Vodafone** announces that it has selected **Huawei** to produce the 3G handsets that will be released under the Vodafone brand starting in September (in 21 countries for at least 5 years).
- The Irish regulator has rescinded **Smart Telecom's** UMTS licence, for lack of financial guarantees to uphold commitments made when it was awarded the licence.
- Forced to clarify its position after **Canal+** parent company **Vivendi Universal's** announced takeover last December of the **TPS** satellite pay-TV service, the **Lagardère** groups elects to acquire a 20% stake in the new company.
- The Ecis association, whose members include **IBM**, **Sun** and **Nokia**, accuses **Microsoft** of anti-trust violations, and files a complaint with the European Commission. The association is opposed to several of the Seattle giant's practices, which it claims reinforce Microsoft's existing monopolies, and extends its dominant position to several existing and targeted segments.
- Canadian firm **Research in Motion (RIM)** obtains a reprieve from the US courts, after having been threatened with suspension of service for its BlackBerry digital PDA in the US.
- French alternative operator, **neuf cegetel**, acquires a 51% share of **Efixo** (ex VoIP Technologie).

Growing number of convergent services

2006 saw a proliferation of new media initiatives. The BBC and BSkyB (UK), TPS and CanalSat (France) all launched high definition services; Echostar (USA) is marketing an HD-compatible Personal Video Recorder (PVR), and DirecTV (USA) is offering subscribers a video-on-demand (VOD) service on their PVR.

The number of online video services is also growing: BSkyB (UK) has launched "Sky On Broadband" for PCs, ITV (UK) is experimenting with a local broadband TV service, while Pro7Sat1 (Germany), Canal+ and TF1 (France) have all introduced a VOD service for PCs.

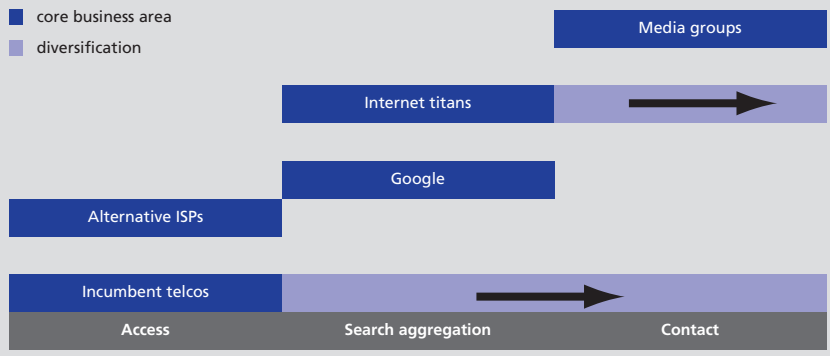
Most of the top media groups are actively involved in developing a mobile TV service as well: BSkyB (UK) is launching "Sky Mobile" >in partnership with Vodafone, Mediaset (Italy) has acquired a DTT multiplex to prepare for the launch of a mobile TV offer, while Canal+ (France) and Pro7Sat1 (Germany) have already got theirs underway. Meanwhile, in Japan, NTT DoCoMo has joined forces with Fuji TV and Nippon TV Network.

But not all of these initiatives have met with success: the MVNO launched by American sports channel ESPN, belonging to the Disney group, pulled the plug on operations after having failed to achieve its target number of customers.

These new services are also the stage for new rivalries or partnerships between network operators and content providers. Such is the case with mobile TV where television channels and mobile operators are vying for control of the offer, even if cellular operators' control over the device and its subsidisation give them a clear advantage, and so shaping the ultimate cooperation between media and telecommunications. The VoD sector, too, is blurring the longstanding boundaries between commercial and technical distribution. For telcos, securing access to VoD rights, marketed on a non-exclusive basis, often constitutes the only strategy for designing an offer that is distinct from the one offered by traditional TV operators. In the meantime, other network operators are opting to act as mere distributors of existing offer, having no desire to assemble an offer of their own.

Competition between network operators and rights holders could eventually crystallise around the bid to capture the ad revenues generated by these new services, with each party arguing that the income associated with the traffic that the services generate is rightfully theirs. But this potential conflict may never arise, as the internet giants are positioning themselves at the centre of the online services value chain, and so sinking their teeth into both traditional telecommunications and media markets.

Leading vendors' position in the online video market



Source IDATE

- French ISP, **Club Internet**, a subsidiary of Germany's T-Online, is expected to announce an ADSLTV offer in partnership with pay-TV service TPS, before the end of the quarter.
- **M6 Mobile by Orange**, a licensing agreement between the French media group and mobile operator, will give M6 subscribers access Orange's 3G network. This follows in the footsteps of the strategy of MVNO NRJ Mobile, which offers 3G services using mobile operator SFR's network.
- **AT&T's** takeover of **BellSouth**, for the sum of 89 billion USD (including a debt takeover of 22 billion USD), gives birth to a new telecom giant, managing 71 million lines in 22 of the most populated states in the US (including California, Florida, Texas and Michigan). The new AT&T will account for half of the country's fixed lines, in addition to serving some 54 million cellular customers and over 10 million ADSL subscribers. Thanks to this deal, AT&T also gains full control of **Cingular Wireless** which had been co-run by the two companies. In addition to all this, AT&T has announced massive investment plans, notably in Europe for which it has earmarked more than 8 billion USD for 2006.
- **RIM** (Research In Motion, maker of Blackberry smartphones) acquires **Ascendent Systems**, and so gets its hands on Voice Mobility Suite – a software solution based on the SIP open protocol, which is to be closely integrated into RIM's offer in a bid to expand its servers' capacity, to be able to offer Blackberry users mobile voice solutions.
- **TeliaSonera** joins the Freemove mobile alliance, whose members include **Orange**, **Telecom Italia and Deutsche Telekom**, while **Telefónica** will be pulling out, concurrent with its takeover of **O_2**.
- Spanish incumbent **Telefónica** makes an offer of 3.5 billion EUR for the remaining 7.5% of **Telefónica Moviles**. Telefónica is hereby following suit with **France Télécom**, which bought up the minority shares in **Orange** in 2003, and with **Telecom Italia** which merged with its mobile arm, **TIM**, last year.
- Internet services vendor, **Softbank**, becomes Japan's number three cellular operator, with a 16% share of the market – behind **NTT DoCoMo** (56%) and **KDDI** (24%) – thanks to the acquisition of Vodafone's entire stake in its Japanese subsidiary, **Vodafone KK** (97.7%), for 1,750 billion JPY. Before the deal can go through, as agreed, the company will have to hand back the 3G licence it was awarded in November, to then launch a new service in 2007.
- Swedish telecom equipment manufacturer **Ericsson** has bid 178 million USD to acquire US router maker, **Riverstone Networks**.
- Negotiations for **TDF's** takeover of **LDCollectivités** (a neuf cegetel subsidiary specialised in local government networks) have fallen through, with **neuf cegetel** now reporting that it plans to hold on to its subsidiary.
- Norwegian incumbent **Telenor** has agreed to sell off its 56.5% stake in Ukrainian operator **Kyivstar** to Russia's **VimpelCom** for 5 billion USD.
- **Deutsche Telekom** and **Microsoft** have signed a cooperation agreement whereby the German telco will use the Seattle giant's software platform to market an IPTV service in Germany. The service will be available on Deutsche Telekom's future VDSL network, which will connect 10 major German cities by the end of this year, and 50 by the end of next year.
- In France, private investment fund **Cinven** offers **Liberty Global** 1.25 billion EUR for control of cable company **UPC-Noos**. The goal of the new entity is to compete with **France Télécom** in the triple play segment.
- **France Télécom** publishes its wholesale telephone subscription offer for its competitors: 10.03 EUR, excluding VAT/month, compared to a retail price of 11.70 EUR, excl. VAT. The incumbent carrier stressed the fact that this new margin is comparable to the one offered by its counterparts in Italy and the UK. An even greater discount is, however, being offered by incumbents in Denmark (21%) and Norway (16%).
- **Siemens** has sold off its last remaining shares in its former subsidiary, **Infineon**, and so putting an end to its gradual withdrawal from the semi-conductor business.
- **Tecom-Dubai Investment Group** has won the 35% stake in **Tunisie Telecom** with its offer of 1.9 billion EUR, outbidding French conglomerate **Vivendi's** 1.7 billion EUR.
- **STMicroelectronics** plans to invest 500 million USD is an assembly and test plant in China. The company is currently China's third largest semi-conductor producer, reporting annual growth of 24%. Its sales in the country have been rising at a rate of 31% a year since 1999.
- Japan's number two mobile operator, **KDDI**, and private channel, **TV Asahi**, will be joining forces to develop mobile digital terrestrial TV (DTT) services. The mobile TV offer will be based on the Japanese ISDB-T standard, and will be broadcast over the terrestrial network using MPEG-4 AVC video compression. The first compatible devices, produced by **Hitachi**, **Sanyo** and **Panasonic**, are already available to Japanese consumers.
- Satellite operator **SES Global** announces the completion of its full takeover of **New Skies Satellite**, for the sum of 1.15 billion USD.

MVNO: The new deal

Appearing first in northern Europe back in 1998, the MVNO phenomenon has now taken hold across Western Europe and North America, but advancing at a much more modest pace in Asia. Numbering over 60, the United States has the largest population of MVNOs, while numbers across Asia vary widely.

Mobile virtual network operators were serving 30 million customers in Europe in mid-2006, marking a 60% increase in two years, and accounting for around 10% of the region's mobile services subscribers. The situation varies a great deal from country to country, however: aside from northern Europe, there are a considerable number of MVNOs in Germany, Belgium and the UK, fewer in France and Spain and none in Italy.

Pioneer MVNOs have had a tremendous impact on mobile markets in some countries, with some having managed to grab a substantial market share and so prove a real threat to MNOs, particularly in northern Europe where they account for the bulk of market volume. Their arrival in the market also drove down retail prices and triggered a sharp drop in ARPU, particularly on the lower end of the market.

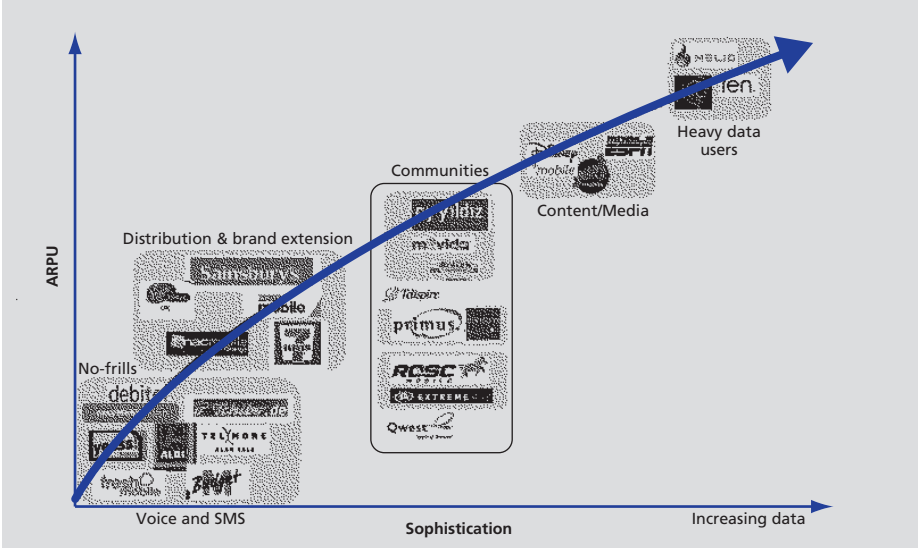
This phenomenon is a natural part of the growth trajectory in mature mobile markets, and is helping to stimulate growth in emerging ones. In some cases, MVNOs' development is being encouraged by regulators who view it as a means of stimulating competition in the mobile market. The chief enablers of their development are at once contextual, technological and regulatory.

- MVNOs' development is reflective of the need for new growth outlets in markets that are nearing or have reached saturation, such as Western Europe and North America where considerable untapped potential still remains.
- The MVNO phenomenon is also taking hold as part of the network convergence movement, and the adoption of value-added services.
- Regulation has being one of the prime enablers for virtual operators in Europe, as NRAs can impose agreements with MVNOs as a remedy to imbalanced market competition. The way that this option has been used explains the disparate rates of development for MVNOs across the European Union.

A new mobile landscape is taking shape, with generalist (chiefly MNOs) and specialised operators positioning themselves in increasingly streamlined customer segments, but which remain distinct from their original ones. As a result, MVNOs have established two distinct approaches:

- Low-cost MVNO, playing the price card at the cost of somewhat shaky profit levels;
- Niche MVNO, targeting overlooked or poorly served user segments – the real challenge being to generate ARPU with existing customers by delivering tailored-made offers.

Increasing personalisation to boost ARPU



Source IDATE

- French and American equipment manufacturers, **Alcatel** and **Lucent**, announce their merger in the form of a share swap, giving birth to the telephone equipment sector's largest company. Alcatel's shareholders – whose company is twice the size of Lucent – will control 60% of the new entity. The company will have its headquarters and operations based in Paris. The merger will cut down operating costs by an estimated 1.4 billion EUR a year. The new group represents a combined turnover of 21 billion EUR, broken down as follows: 35% in Europe, 34% in North America, 15% in Asia, 9% in Africa-The Middle East and 7% in Latin America and the Caribbean. The merger is expected to go into effect before the end of the year.
- **Verizon** announces the sale of its shares in three operators based in the Caribbean (Verizon Dominicana, Telecomunicaciones de Puerto Rico) and in Venezuela (CANTV), worth a total 3.7 billion USD.
- After months of discussions with **Virgin Mobile** shareholders, the UK's number one cableco, **NTL**, has agreed to acquire Virgin's operations in the UK for a total 962.4 million GBP. As a result, NTL will soon be in a position to offer its customers a quadruple play bundle: cable, broadband and fixed and mobile telephony services.
- In Japan, **Toshiba** has launched its high definition DVD player, in HD DVD format, and so entering into the race with rival Sony and its Blu-ray Disc standard.
- **Thales** announces that it has beefed up relations with **Alcatel**, taking over its shares in the satellite business and its energy transport solutions and services, for the sum of 2 billion EUR in shares and cash.
- Russian conglomerate, **Sistema**, acquires a 66% share of UK wholesale telecom specialist, **Wavecrest**, for 20 million GBP.
- **Tecom**, owned by the Prince of Dubai, acquires 60% of Maltese incumbent carrier, **Maltacom**, for 214 million EUR.
- Software giant **Microsoft** takes over British video game studio, **Lionhead**, as part of its bid to beef up its game publishing capacity, at a time when its Xbox 360 is getting the cold shoulder from gamers in Japan.
- Spanish incumbent, **Telefónica**, has taken control of Colombian fixed telco, **Telecom**, for 369 million USD, after having outbid Mexico's **Telmex**.
- **Red Hat** announces the acquisition of software infrastructure specialist, **JBoss**, for the sum of 350 million USD. This takeover is a means for Red Hat to boost its position in the infrastructure market by gaining expertise in applications servers.
- United Arab Emirates' carrier **Etisalat** takes operational control of Pakistani carrier, **Pakistan Telecom**, after having signed an agreement in March to acquire 26% of the telco's equity for 2.6 billion USD.
- **AU Optronics**, the world's third largest producer of LCD TV and computer screens, announces the takeover of **Quanta Display.** Worth some 2.2 billion USD, the deal marks an important step in the consolidation of Taiwan's LCD screen production industry, sparring off with two South Korean giants, **LG.Philips LCD** and **Samsung** (each with a 22% share of the world market).
- IP telephony pioneer **Skype** will be taking over California start-up, **Sonorit**, which specialises in VoIP coding.
- **Sony** and **Samsung** have announced plans to earmark 2 billion USD for the construction of a new LCD screen production plant in South Korea, in response to increasing demand for flat screen TVs.
- French start-up **Netcentrex**, an IP telephony specialist, has been taken over by Israeli firm, **Comverse** for 164 million USD in cash, plus an additional 16 million USD maximum, depending on Netcentrex's financial performance.
- American software giant, **Oracle**, has announced the acquisition, for 220 million USD in cash, of **Portal Software**, a publisher specialised in billing and revenue management software solutions for the communications and media market.
- **Microsoft** has signed agreements with three Chinese PC makers for them to pre-install legal versions of Windows on their machines.
- Canadian hardware manufacturer, **Nortel**, will be correcting its turnover figures for 2003 to 2005 by a further 350 million USD.
- Public bank, **KfW**, sells a 4.5% share of German incumbent telco, **Deutsche Telekom**, to US private investment firm, **Blackstone**, for 2.68 billion EUR. KfW thereby cuts its stake in Deutsche Telekom to 17.3%. Combined with the 15.2% that it already owns, the German State still controls 32.5% of the telco. KfW has agreed to freeze its share of equity for a year, and Blackstone has agreed not to sell its shares for two years. In addition, Blackstone is selling its stake in cableco **Kabel Baden-Württemberg** (Kabel BW, based in south-west Germany) to Swedish equity group, **EQT**.
- Brussels has finally given its conditional approval for **Deutsche Telekom's** takeover of **tele.ring** – a deal which brings the number of telcos in Austria down from five to four. In exchange, the German incumbent has agreed to sell off 10 MHz of UMTS frequency and tele.ring's other transmission sites to other mobile operators.
- In Japan, **Softbank** finalises the acquisition of the Vodafone Group's Japanese subsidiary (launched in

early 2006) and obtains an additional 1.9% share of **Vodafone KK** for 32.2 billion JPY. This brings to 99.5% its stake in this mobile operator that has a base of 15 million subscribers and a 17% share of the market.

- Spain's **Telefónica** sells its 59.9% stake in its directory and advertising subsidiary, **TPI**, to the UK's **Yell** for 1.84 billion EUR. Yell has also launched a takeover bid for the remaining shares.
- US telco, **Level3**, has taken over its counterpart, **ICG**, for 163 million USD (of which 36 million in cash). The carrier has also announced the upcoming buyout of regional provider, **TelCove**, for 1.24 billion USD (including 445 million in cash).

When the TV market switches to flat screens

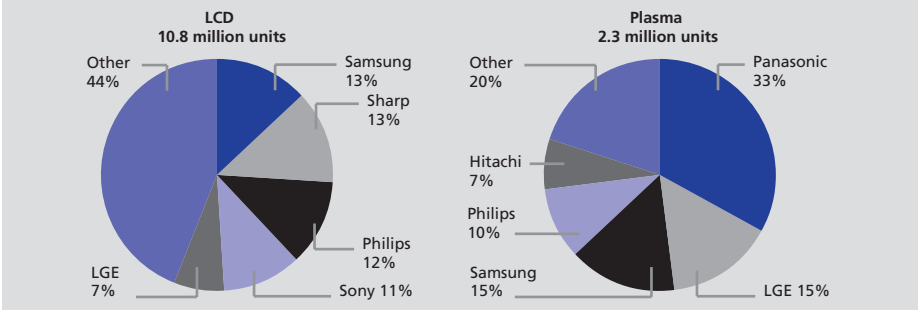
With some 50 million units shipped in 2006, flat screen TVs now represent over a quarter of television sales around the globe, in terms of volume, and over half in terms of value. This market now accounts for around 30% of the globe's consumer electronics market (excluding cordless phones and home computers). Still a niche market back in 2003, with only 4 million units sold at a very high price, flat screen TV sales have doubled every year since then, and now become a mass market thanks to a steady drop in prices (between 10% and 30% a year, for the same size screen) and to the line's expansion to include smaller sets. In advanced markets, flat screen TVs already outsell cathode ray tube ones. In the United States, for instance, more than 5.5 million flat screen TVs were sold in Q4 2006, compared to less than 4 million "classic" sets. In France, sales for the two categories were both around 2.7 million units, but forecasts for 2007 point to a 50% rise in flat screen sales (up to 4 million) and a 40% drop for cathode ray sets (down to 1.7 million).

On the technological side of things, LCD screens boast a substantial lead, reporting four times more sales than plasma screens in 2006. Aside from strictly techno-economic considerations, LCD has the advantage of being the only one to offer smaller size screens.

As to their production, it lies squarely in the hands of Asian manufacturers in Japan, South Korea, China… all making massive investments, with cases in point that include Sony and Samsung which have announced that they will be spending 2 billion USD to build a new plant in South Korea, and Taiwan's AU Optronics which is taking over its rival, Quanta Display. These suppliers are also investing in building production plants closer to their end markets, namely Europe and America (Samsung in Hungary and Slovakia, Sharp in Poland and Mexico, Matsushita/Panasonic in the Czech Republic, Mexico and Brazil, Toshiba in Poland…).

Sales are expected to continue to rise at a healthy pace: Japan's Electronics and IT Industry Association predicts that, in 2011, flat screen televisions will account for two-thirds of the 200 million sets sold worldwide.

Industry dominated by Asian suppliers (sales in 3Q 2006)



Source Display Research

- South African mobile operator, **MTN**, will be taking control of its Libyan counterpart, **Investcom**, for 5.5 billion USD. At the end of 2005, Investcom had 4.9 million customers in Africa, the Gulf region and in Europe. The takeover will increase its base to 28.1 million customers.
- **Warner Bros**, the studio belonging to the world's largest media conglomerate, **Time Warner**, has signed an agreement with **BitTorrent**, the P2P file exchange site where a great many pirated files are swapped between users, for the latter to distribute movies and TV shows on the web.
- Japanese mobile communications leader, **NTT DoCoMo**, will be launching a new online music and video download service, with a theoretical speed of 3.6 Mbps (or 10 times the current bitrate delivered by UMTS 3G networks). Its rival, **KDDI**, launched a full song download service with its CDMA EV-DO mobile handset one year ago.
- German television group, **ProsiebenSat.1**, launches two new pay-TV channels: Sat.1 Comedy and kabel eins classics.
- **AT&T** is preparing to re-enter India's telecom market through a joint venture with **Mahindra Air Services**, which will offer Internet services and national and long distance fixed calling. AT&T will own 74% of the new enterprise, baptised AT&T Global Network Services India, and will be investing 185 million INR.
- Ireland's incumbent telco, **Eircom**, which went public in 1999, has accepted an offer of 2.42 billion EUR in cash from Australian investment fund Babcock & Brown, associated with Eircom's ESOT (Employee Share Ownership Trust), with which it currently controls a 50.2% stake in the carrier.
- In the Netherlands, incumbent carrier **KPN** acquires **Enertel** from investment fund Greenfield Capital, for 10 million EUR.
- **Vodafone** has finalised its takeover of Turkish mobile telco, **Telsim**, begun in December 2005. Vodafone plans on investing 1.5 billion USD over three years to upgrade Telsim's infrastructures. The Turkish operator has a 22% share of the market, with a base of 11 million mobile subscribers.
- After the first round of trading on Wall Street, American IP telephony operator **Vonage's** share price had dropped by 12.65% (to 14.85 USD). Vonage is struggling to hold its own in a fiercely competitive VoIP market, battling it out with both Skype and cablecos' bundles.
- Italian incumbent carrier, **Telecom Italia** has sold off its Venezuelan subsidiary, **Digitel**, to **Telvenco** for some 425 million USD.
- **France Télécom** has joined the TD-SCDMA Forum, an association that promotes the Chinese 3G standard. According to its press agent, China nouvelle, France Télécom is the first foreign telco to join the forum.
- **SES Astra**, European subsidiary of the world's leading private satellite operator, **SES Global**, has increased its share in German company, **ND SatCom**, from 25.1 to 100%, for the sum of 35.6 million EUR. ND SatCom supplies satellite communication solutions, and reports a turnover of 80 million EUR (of which 70% from government contracts).
- Europe's number one media group, **Bertelsmann**, will be spending 4.5 billion EUR to buy back the 25.1% of its equity owned by Belgian holding company Groupe Bruxelles Lambert. A high price to pay, and financed in large part by a bank loan and by the sale of its music publishing business, which could well undermine the group's financial stability – the music business having generated earnings of 372 million EUR in 2005. Through this subsidiary, Bertelsmann had become the world's third largest music publisher. The sale is expected to bring in somewhere between 1.1 and 1.3 billion EUR.
- Internet portal, **Yahoo**!, and online auction site, **eBay**, have signed an advertising pact whereby Yahoo! will manage the banners displayed on eBay's webpages exclusively. The agreement also provides for a variety of interactions between the two companies' sites.
- Search engine **Google** is widening its lead over the competition by introducing video into its AdSense programme, which generated 42% of the 2.25 billion USD in ad revenues earned by Google in the first quarter of the year.
- Chinese public operator, **China Mobile**, is rumoured to be prepared to spend 5.3 billion USD to acquire Luxembourg-based **Millicom International**, which already has a base of 9 million subscribers in 16 developing countries in Africa, Asia and South America. With 265 million subscribers, China Mobile boasts the world's largest user base.
- In France, operator **neuf cegetel** has unveiled its new hybrid fixed-mobile phone, baptised *Twin*, which operates in classic GSM mode outside the home, then switches to a local Wifi network indoors by connecting to the Neuf Box. *Twin* also lets users connect to the 32,000 Wifi hotspots operated by neuf cegtel's partners.
- US semiconductor manufacturer, **AMD**, announces plans to invest 2.5 billion USD over the next three years in its production side in Dresden. Intel's leading rival, the California-based group has managed to gain a close to 20% share of the globe's microprocessor market.
- US WiMAx specialist, **Clearwire**, has announced that it plans to go public, and has applied for a listing on Nasdaq. The company is one of the largest active

WiMAx operators, with a base of 88,000 customers in the US, plus 11,500 customers in Europe, in Dublin and Brussels. A major frequency buyer, Clearwire has also taken control of several operators in Europe and in Mexico. In 2005, the company's net losses quadrupled (to 134 million USD) while earnings only doubled (to 33 million USD), three quarters of which were generated by equipment sales, and 95% inside the US.

- Online travel site, **Kayak.com**, has completed its third round of fundraising, adding 11.5 million USD from venture capital firm Accel Partners to its coffers, bringing total financing since its launch in 2004 to 30 million USD.

Ad-based and pay-TV coming together

In Europe especially, the TV market was long characterised by the coexistence of operators devoted either to commercial TV financed by advertising, or to pay-TV. But this situation is changing as a number of operators are undertaking a shift in strategy, to wit:

- British pay-TV provider BSkyB has launched a free to air satellite offer.
- French pay-TV provider Canal+ now operates a free to air channel, financed by advertising.
- Italian commercial TV company, Mediaset, has launched a pay-per-view service.
- Sweden's MTG, which was originally a pay-TV provider, is moving more and more into commercial TV thanks to deals that include the 2005 takeover of Hungarian channel, Prima TV, and of a free to air channel in Sweden in 2006.
- One of Germany's top two commercial TV companies, Pro7Sat1, launched four pay-TV channels in 2006.

SBS Broadcasting, which operates chiefly commercial TV channels in Scandinavia and in Eastern Europe, has taken over Scandinavian pay-TV provider, Canal+ Nordic.

Several factors are behind these trends:

The rise of new free to air offers

With digital terrestrial TV and IPTV, consumers are benefiting from an ever-expanding TV offer either for free or at a very low cost, which can undermine non-premium pay-TV offers, in other words those which are not made up of exclusive high value-added content like first run movies and sport. As a result, pay-TV operators may opt to switch those channels to an ad-funded business model.

Growth of multi-channel households

On the whole, the strategy of launching new commercial TV channels, or of switching pay-TV ones to a free to air model is being enabled by the growing number of consumers with access to a multi-channel offering. Free to air channels are therefore likely to reach a larger audience, and so generating more ad revenues. Nevertheless, given the large number of channels that already exist, particularly in Europe, there is no guarantee that advertising can finance the influx of new channels.

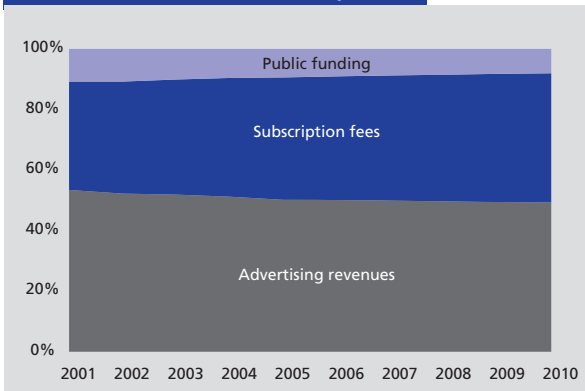
Modernisation of TV distribution

On the flipside, in some markets cable networks' digitisation has enabled the launch of new premium for pay offers, which come to complete the basic offers which are financed by advertising. The German market is a prime example of this change in direction.

More balanced risks

And, finally, the coexistence of pay-TV and advertising in both markets can help better balance the risks involved for the companies.

Growth of TV revenues around the world, by source



Source IDATE

- **France Télécom** announces that its Wanadoo, MaLigne TV and Equant businesses will all take on the Orange brand for consumer services, and the Orange Business Services brand for corporate customers. The French incumbent will keep only the Orange brand for all of its services in France (with the exception of basic phone lines) and in the UK, with the other countries where it operates to follow by the end of the year.
- Croatian telecommunications operator (**T-HT**), of which Deutsche Telekom controls 51%, has taken over private company, **Iskon Internet**, for 13.7 million EUR. The deal will increase the telco's share of the Internet market from 67% to 84%.
- **Celtel International**, a subsidiary of Kuwaiti firm MTC, has just signed an agreement for a 65% stake in **Vmobile**, one of Nigeria's mobile operators, for the sum of 1 billion USD. The operation will expand Celtel's presence in Africa to 15 countries.
- American telecom infrastructure equipment manufacturer, **ADC**, has announced the takeover of rival firm, **Andrew Corp.**, which recently expanded its mobile infrastructure division. The deal will allow ADC to double its earnings to 3.3 billion USD. ADC will control around 56% of the new company, and Andrew's the remaining 44%.
- **Motorola** acquires British publisher **TTPCom** for 193 million USD, and so forges itself a place in the mobile applications environment market.
- Canada's fourth largest cableco, **Cogeco**, has acquired Portugal's number two cable company, **Cabovisao Televisao**, for 260 million EUR, plus 205 million EUR in debt takeover. Created in 1996, Cabovisao has a base of over 600,000 subscribers, and is Portugal Telecom SGPS's leading rival.
- **China Netcom** has sold its **Asia Netcom** subsidiary for 169 million USD to UK investment firms, Ashmore Emerging Markets Liquid Investment Portfolio and Spinnaker Global Opportunity Fund.
- **Numéricâble**, France's largest cableco which is owned by Cinven in association with Altice, has signed an agreement to acquire the French market's number two player, **Noos**, which has been controlled up to now by European group, Liberty Global – in a deal worth 1.25 billion EUR. Once created, the new entity will have a base of 4.2 million pay-TV subscribers, more than 600,000 broadband subscribers, and close to 200,000 IP telephony subscribers.
- **IBM** has announced that it will be tripling its investments in India, for a total 6 billion USD over the next three years. Last year, IBM reported 510 million USD in sales in India, a 55% increase over the previous year.
- In Germany, **QSC** has announced the acquisition of a 67% share of ISP **Broadnet**.
- China's **Huawei** takes control of virtually all the assets of its compatriot, **Harbour Networks**, a network equipment specialist, but has put an end to plans for a very high-speed joint venture initiated early in the year with Canada's **Nortel**.
- Vienna's arbitration court has awarded **Deutsche Telekom** the right to acquire 48% of Polish mobile operator **PTC**, owned by **Elektrim Telekom** (ET), at book value. The Polish telco's shareholders are Vivendi, with 51%, and Elektrim with 49%.
- **France Télécom** recently unveiled its convergent offer, baptised Unik, which will become available in September 2006 – offering unmetered calls to landline phones in France and to Orange mobiles from home, and later from 17,000 Orange hotspots. Orange's target is to have 2 million Unik customers by 2008. Meanwhile, rival **Free** has announced the availability of a service that lets customers make calls with a hybrid GSM-Wifi phone (free calls inside Wifi zones in metropolitan France, and to 15 overseas destinations, excluding calls to mobiles and special numbers).
- **TeliaSonera** has taken over Spanish mobile operator, **Xfera.** The Scandinavia operator will pay minority shareholders 66.5 million USD to increase its share in Xfera from 16.55% to 76.6%. Furthermore, Spain's number four cellular operator will at last launch 3G mobile services, six years after having been awarded a UMTS licence, with plans to invest 1 billion EUR over the next five years.
- **Nokia** and **Siemens** have announced the merger of their fixed and mobile network infrastructures. The Finnish and the German manufacturers will be creating a joint venture called Nokia Siemens Networks, whose ownership will be split 50-50, but with Nokia in charge of its operational management. It will be worth some 16 billion EUR in revenues, putting it behind Cisco Systems, Alcatel Lucent and Ericsson. The new entity will control all of Nokia's network operations along with Siemens's operator equipment business.
- Telefónica subsidiary **O_2** has acquired UK ISP **Be** for 50 million GBP. Created in 2004 under the name Avatar Broadband, Be serves its 9,000 customers via ADSL and unbundling. The operator will also be marketing combined ADSL-mobile offers.
- South Korea's largest telco, **SK Telecom**, has announced the takeover of number two Chinese cellular carrier (operating GSM and CDMA networks) **China Unicom's** publicly quoted branch, for 1 billion USD in convertible bonds. At term, these bonds will be convertible to close to 900 million shares (representing a 6.67% stake) of the Chinese company.
- Dutch telco **KPN** hands over its operator wholesale business, along with 55 million USD, to its American counterpart, **iBasis**, for a 51% share of its equity.

- Video game publisher, **Electronic Arts**, has announced the takeover of US studio **Mythic Entertainment**, a massively multiplayer game specialist, for an undisclosed sum.
- Japanese telco, **KDDI**, and its UK counterpart, **BT**, have confirmed the creation of a joint venture dedicated to serving multinationals operating in Japan.
- **Univision**, number one Hispanic TV channel worldwide, and the fifth most popular channel in the US, has been sold for 13.7 billion USD, including debt, to an investment consortium made up of Madison Dearborn Partners, Providence Equity, Texas Pacific Group, Thomas H. Lee and Saban Capital. The Univision channel is watched by 98% of Spanish-speaking households in the US.
- **France Télécom**, which already controls a 40% stake in **Jordan Telecom**, is preparing to achieve a controlling share by acquiring an additional 11% for roughly 168 million EUR.

Global telecom equipment manufacturer's consolidation

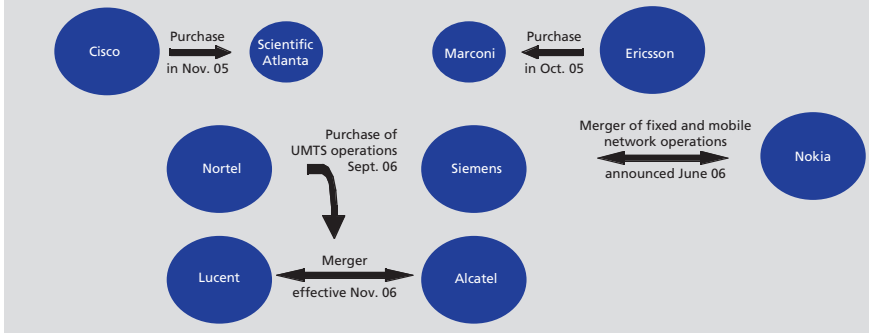
After the announced merger of Alcatel and Lucent in April 2006 and, to a lesser degree, Ericsson's takeover of Marconi and Cisco's of Scientific Atlanta in late 2005, the merger of Siemens and Nokia's network equipment businesses is a clear sign of the need for consolidation in an industry facing the challenges brought by both technological progress (particularly NGN) and growing competition (come from Chinese players). Alcatel-Lucent's incorporation of Nortel's UMTS operations in 2006 was just one more step in that direction.

Naturally, the primary consequence of these major mergers is an increasingly concentrated market, with the globe's four largest infrastructure equipment suppliers now accounting for 60% of sales, compared to less than 50% in 2004. The ranks are closing. Although Cisco is still in number one spot, Alcatel-Lucent is close on its heels, followed by Ericsson. Behind the Siemens-Nokia joint venture in fourth spot, Canada's Nortel now seems well outdistanced by the leaders.

Stuck between these heavyweights and emerging players are mid-size diversified companies (Nortel, NEC, Fujitsu, Motorola) which are now too small with respect to the new critical mass. They are faced with two distinct choices: either specialise and refocus their strategy by pulling out of segments where they are weak (a choice that led to Nortel's bargain basement sale of its UMTS business to Alcatel), or to merge with other companies to achieve the new critical mass. The competitive pressure bearing down on these companies is such that they will need to make a decision soon. In the same vein are the M&A that could begin taking place between Chinese manufacturers, such as Huawei, in a bid to beef up their presence in international markets.

This trend could also drive an accelerated consolidation of smaller suppliers, such as Adva, Ciena, Tellabs, Juniper, Foundry and Extreme which, more than ever before, are now prime targets for the big boys looking to build their market and to fill in the gaps in their product lines. To prevent this from happening, one or several of these smaller companies could attempt to form an alliance with its fellows.

Consolidation of telecom equipment makers



Source IDATE

- **France Télécom** will spend 145 million EUR to acquire 10% plus one share of Jordanian carrier, **Jordan Telecom**. The acquisition will be made through JITCO, a wholly-owned France Télécom subsidiary which has controlled 40% of Jordan Telecom since January 2000. France Télécom will also have an option on an additional 1% share of equity, worth some 14.5 million EUR.
- The Transcorp consortium, made up Nigeria's Transnational Corporation, the UK's **BT** and the United Arab Emirates' **Etisalat**, issued the winning bid to acquire 75% of Nigerian operator, **Nitel**, for 750 million USD. **Etisalat** was also awarded Egypt's third cellular licence, in partnership with the Egyptian post office, the National Bank of Egypt and the Commerce International Bank (CIB), for the sum of 2.3 billion EUR.
- Spanish incumbent carrier, **Telefónica**, has acquired a 51% stake in WiMAx operator, **Iberbanda**, for 36.5 million EUR.
- American WiMAx specialist, **Clearwire**, has raised 900 million USD from private investors, including Intel and Motorola.
- Hong Kong corporate banker, Francis Leung, has announced that he will be investing 1.2 billion USD to buy Richard Li's 23% share in telecom operator **PCCW**.
- Brussels has slapped **Microsoft** with another fine, this time for 280.5 million EUR for not having fully applied the sanctions it received in 2004 for anti-trust violations. At the heart of the dispute is the technical documentation that the Seattle firm must provide to allow its competitors' servers to communicate seamlessly with PCs operating on Windows.
- **Bell Globemedia**, of which 66% is owned by Canadian incumbent **Bell Canada**, has announced its 1.5 billion USD bid to take control of the **CHUM** network of broadcasting stations.
- Russia's number two mobile operator, **VimpelCom**, has announced the acquisition of a 51% stake in Georgian mobile operator, Mobitel, for 12.6 million USD.
- American firm **Texas Instruments**, the world's third largest producer of semiconductors, has announced plans to open a new research centre in India. The new installation will be located close to **Nokia** and **Flextronics**' mobile handset production plants, both of which are major Texas Instrument clients.
- The third GSM licence has been awarded in Mauritania to Sudanese operator, **Sudatel**. Sudatel bid 82 million EUR for the licence, compared to only 28 million EUR from the only other candidate, **France Télécom**. A 3G mobile licence was awarded to incumbent carrier **Mauritel**, and two local fixed telephony licences were issued, one each to Sudatel and France Télécom. The country is already home to two GSM operators: Mattel (51% owned by Tunisie Telecom) and Mauritel (51% owned by Maroc Telecom).
- Bosnia's Serbian parliament has approved a 65% privatisation of **Telekom Srpske**, for the estimated sum of 400 million EUR. Several European heavyweights are interested in acquiring this small operator – which has a base of around 345,000 landline subscribers and over 570,000 mobile subscribers – most notably Deutsche Telekom.
- US private equity firm, Warburg Pincus, and the pan-European Cinven Group have won the auction for Dutch cableco, **Casema**, with a joint offer of some 2.1 billion EUR. The European Commission has also given the go-ahead for Cinven (in association with Luxembourg cableco Altice) to take over cable operator **UPC France**.
- UK telephony group, **Cable & Wireless**, has made a bid of 113 million GBP in cash for Bermudian telecom group, **KeyTech**.
- Three equity funds, KKR, associated with Silver Lake, Permira, allied with TPG and Blackstone, and Bain Capital, associated with Apax and Francisco Partners, are said to be ready to pay 8 billion EUR for Dutch electronics giant **Philips's** semiconductor business.
- US carrier **Level3** sells software reseller **Spectrum** to **Insight Enterprises** 287 million USD.
- **Advanced Micro Devices** (AMD) announces the takeover of Canadian graphic processor specialist, **ATI**, for 5.4 billion USD, in a bid to better compete with its rival, Intel.
- American computer-maker, **HP**, announces the takeover of software publisher, **Mercury Interactive** for 4.5 billion USD. Once the deal has gone through, probably in Q4 2006, Hewlett-Packard's software division will be fully merged with Mercury.
- Bertelsmann's media subsidiary, **RTL Group**, is poised to take control of a 25% stake in Polish TV company, **Polsat**, in exchange for an investment estimated at between 200 and 300 million EUR.
- Morocco's NRA, Agence Nationale de Réglementation des Telecommunications (ARNT), has awarded three third generation mobile telephony licences: to **Maroc Telecom**, the incumbent carrier of which 51% is controlled by Vivendi, to **Medi Telecom**, the country's second largest carrier, and a subsidiary of Telefónica and Portugal Telecom, and to **Maroc Connect**, a Moroccan telecom service provider and ISP. The price for each 3G licence in Morocco was set at just over 32 million EUR.
- As a direct result of Brussels's veto on the merger between **Sony Music** and **BMG**, the UK's **EMI** and

America's **Warner Music** have announced that they are putting an end to any further merger plans, at least for the time being.

- American telecom equipment supplier, **Motorola**, has signed a strategic partnership agreement with China's **Huawei** devoted to UMTS mobile networks. Motorola will focus on services, facilities management and maintenance, while Huawei will supply the network gear. Together, the two companies will be opening an R&D centre in China.

Changing shape of the music businesses: mergers on hold

Although once seeming a foregone conclusion, the European Court of First Instance put a halt to the merger of recording giants, Sony Music and BMG. The world's music industry continues to be dominated by five companies: Sony, BMG, Universal Music, EMI and Warner Music – the latter two have put their merger negotiations on hold, after several years of talks.

Despite the level of concentration which has no parallel in the rest of the entertainment world, the major record labels are looking to concentration as a way to remedy the difficulties brought on by the fact of an increasingly internet-driven music market. They hope to thus be better equipped to address a globalised markets and to achieve economies of scale in terms of structure and marketing.

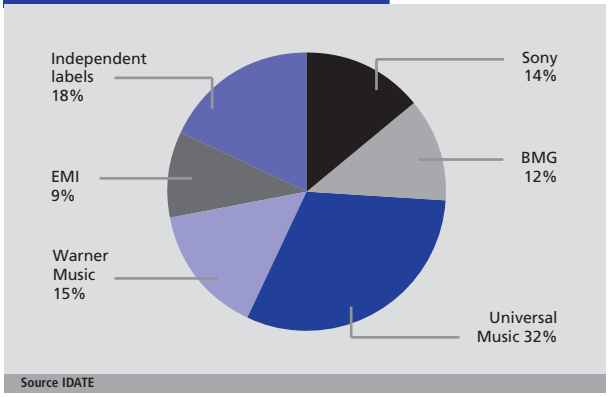
If online music sales now account for around 10% of labels' revenues – the biggest seller being ringtones for mobile phones – they are struggling to compensate for the stagnation and even decline of CD sales, de to piracy, competition from other cultural products such as CDs, and no doubt from the wealth of online radio stations.

After having sought to control the dissemination of their music on the web through stiffer legal and technical measures – going so far as to impede the market's growth by supporting the implementation of closed DRM systems that severely limited consumers' choice – the majors are now adopting a more proactive stance. They are offering a growing number of versions of their products and working to take advantage of the internet, seeking out new artists (showcased on dedicated communities) and taking advantage of the low cost of online distribution (with some works now available only on the web). And new pricing models are beginning to appear which include rental and flat rate access to music, rather than classic unit sales.

Above all, some have come to recognise that it is only by offering a high quality service that they will be able to counter the trend among users of getting music for free, which has caused such an upheaval in the industry – by offering better quality products than what is currently available for download on P2P or user-generated content sites.

Despite all of this, the music industry's ability to make a successful transition to the electronic world is by no means a certainty, particularly given the degree to which obtaining music for free has become a commonplace among the under 25 set, well used to unlimited broadband and P2P.

Labels' share of the world music market in 2005



Source IDATE

- **Telenor** has won the bid for **Mobi 63**, one of Serbia's two mobile operators. The Norwegian incumbent carrier has agreed to spend 1.5 billion EUR to take control of Mobi 63 and its 2.1 million active customers, which translated into a 45% share of the Serbian market in 2005, behind MTS, a subsidiary of incumbent carrier Telekom Srbija.
- American giants, **Time Warner** and **Comcast**, have finalised the takeover of cable operator **Adelphia Communications**, after having announced the joint acquisition back in April 2005. The transaction is worth an estimated 17 billion USD, and will endow cableco Comcast with an additional 1.7 million subscribers, for a total 23.3 million nationwide. In the meantime, rival Time Warner Cable (of which Adelphia now owns 16%) will pick up an additional 3.3 million subscribers, increasing its base to around 14.4 million.
- Private equity firm, Warburg Pincus, and Cinven have announced their acquisition of number two Dutch cableco, **Essent Kabelcom**, from gas and electricity distributor Essent for 2.6 billion EUR, having outbid Liberty Global. Following the takeover of Casema then of Multikabel, the duo now controls 3.3 million cable customers, or 53% of the Dutch market.
- US cellular operator **Sprint Nextel** has announced that it would be investing up to 3 billion USD in building a WiMAx network. More specifically, it plans on spending 1 billion USD next year, and between 1.5 and 2 billion USD in 2008. For its suppliers, the operator has chosen **Motorola** and South Korean giant, **Samsung**, along with **Intel** for the microprocessors.
- **Tiscali** has announced the takeover of **Video Networks**, a UK media and VoD operator. Tiscali already has a base of 1.2 million ADSL customers in the UK, and the deal will bring in an additional 350,000 double play subscribers (ADSL and telephony) and 220,000 unbundled customers.
- German incumbent **Deutsche Telekom's T-Online Venture Fund Invests** acquires a 10% stake in Swiss online payment specialist, **Click&Buy**.
- Time Warner's Internet arm, **AOL**, has announced the takeover of IM application specialist, **Userplane**.
- Swedish carrier **Tele2**, which had previously acquired an 82.4% stake in its Dutch counterpart, **Versatel**, will be merging the latter with its operational subsidiaries.
- UK cableco, **NTL**, is negotiating its buyout by a group of British investment funds: KKR, Blackstone, Providence and Cinven. The transaction will total 16 billion EUR, of which 9.3 billion EUR in debt takeover. In the past year, NTL has taken over fellow UK cableco, **Telewest**, for 4.6 billion EUR, and MVNO **Virgin Mobile** for 1.4 billion EUR – this latter enabling it to roll out a quadruple play bundle.
- US carrier **Verizon** is negotiating the sale of its local network (1.6 million phone lines) in three states – New Hampshire, Maine and Vermont – for an estimated 2 to 3 billion USD.
- After having put its hands on Webify, then on assets management solutions provider MRO Software, for 740 million USD, in addition to content management specialist **FileNet**, for 1.6 billion USD, **IBM** has announced the takeover of US security solutions provider, **Internet Security Systems** (ISS) for 1.3 billion USD. This latest acquisition is part of the company's strategy of beefing up its software business.
- **Ericsson** announces a contract worth some 1 billion USD with Indian mobile operator, **Bharti Airtel**. The contract provides for the expansion and upgrade of the operator's GSM-GPRS network, along with other services over a three-year period. Ericsson also plans to undertake the upgrade using a solution that paves the way for an all-IP network.
- Belgium's incumbent telco, **Belgacom**, now has full control of its **Proximus** mobile subsidiary which, with a base of more than 4.25 million customers mid-2006, is the country's largest cellular operator, after laying down 2 billion EUR for the remaining 25% owned by Vodafone.
- American telco, **Global Crossing**, takes control of its UK counterpart, **Fibernet** for 96.1 million USD in cash. Fibernet owns a fibre optic network in the UK and in Germany (Frankfurt).
- The Australian government is selling off over a third of its stake (51.8%) in incumbent carrier, **Telstra**.
- **Belgacom** has announced an agreement to sell 5.8% of **neuf cegetel** to French mobile operator **SFR**, which thereby increases its stake from 34.9% to 40.7%. In May, SFR had bought a 7% share in neuf cegetel from Telecom Italia and Crédit Suisse. The deal is worth 187 million EUR, putting neuf cegetel's total value at 3.2 billion EUR.
- **EADS** and **Siemens** have won the bid over Vodafone and the Deutsche Telekom-Motorola duo to build a Tetra mobile corporate network for German security forces. The contract for EADS is worth 1 billion EUR.
- Japan's largest cableco, **Jupiter Telecommunications Co.** (J-Com), has announced that it will be investing 47 billion JPY to take control of number three operator, **Cable**

West, of which it already owns 8.6%. J-Com will acquire the 56% stake controlled by Matsushita and Kosaido's 9%, adding a little over 350,000 subscribers to its current 2.2 million, and expanding to over six times the size of the country's second largest cableco, Japan Cablenet.

- The Polish government has announced that it is getting ready to sell 4% of Polish carrier, **TPSA**.
- Based on negotiated commitments, the French government gives the **Canal+**-**TPS** merger the green light.

New channels, new services: incumbent telcos fight back

The multiplication of networks distributing multi-channel TV services (cable, satellite, ADSL, DTT) is broadening the medium's competition landscape, and enabling new entrants to join the fray. To maintain their audience share, and so their share of the advertising market, public and private incumbent players need to add new channels to their offers, generally specialty ones, which will be able to compensate for their flagship channels' steady loss of viewers.

As a result, we witnessed a series of new channel launches in 2006, in France (FranceTélévisions, TF1), in the UK (BSkyB), in Scandinavia (MTG), in Germany (ProSiebenSat1) and in the US (News Corp.). In France, TF1's acquisition of a stake in AB Group in late 2006 was part of the company's bid to expand its portfolio of channels.

Nor is incumbent operators' strategy confined only to increasing their presence in multi-channel offerings. They also need to contend with the threat to their ad revenues due to the growing appeal of the internet, which is draining their audience and so, ultimately, their ad revenues, in addition to giving birth to new rivals.

Unlike the major record labels, media groups appeared to have taken stock much earlier on of the consequences of digitised content, individualised TV viewing, and the growing popularity of social networking and user-generated content sites. They have taken a proactive approach to investing in new media, including online VoD sites, the takeover or launch of user-generated content sites, the incorporation of user-generated content into their TV programmes, along with a relatively open attitude to mobile phone services.

Media groups' organisational charts are changing as well, revealing a structure geared more towards a multi-platform approach, rather than parallel management of their programmes' different distribution channels.

In the medium-long term, the top TV operators will capitalise on their name brand clout to build portals that provide content that can be accessed on any device, and over any network.

TV advertising revenues around the world, by zone/country

(billion €)	2002	2003	2004	2005	2006(e)	2010(f)
North America	46.5	48.6	50.6	51.2	53.4	60.3
USA	45.1	47.0	49.0	49.5	51.7	58.1
Europe	24.0	25.5	28.0	28.5	31.3	41.0
France	2.9	3.0	3.2	3.4	3.6	4.4
Germany	4.0	3.8	3.9	3.9	4.0	4.3
United Kingdom	5.1	4.9	5.4	4.7	5.5	6.2
Asia Pacific	24.2	24.9	26.2	28.5	29.9	36.3
China	2.3	2.6	3.0	3.5	3.8	5.1
Japan	14.4	14.2	14.3	15.4	16.0	18.7
Latin America	6.2	6.4	7.4	8.2	8.6	10.4
Africa Middle East	1.7	1.8	1.9	2.2	2.3	2.7
Total	102.8	107.1	114.1	118.6	125.5	150.8

(e) estimates - (f) forecasts

Source: IDATE

- **News Corp**., owner of the Fox television network, launches MyNetworkTV.
- French manufacturer, **Alcatel**, takes control of its Canadian counterpart, **Nortel**, for 320 million USD, and so increasing its share of the UMTS 3G mobile production segment from 6% to 14%.
- Investment funds, Texas Pacific Group and Hellman & Friedman, take over US specialised software maker, **Intergraph**, for 1.3 billion USD.
- The **Alcatel-Lucent** merger gets the green light from the two companies' shareholders.
- American software publisher, **Sybase**, pays 400 million USD in cash to acquire mobile message routing specialist (SMS, MMS, IM), **Mobile 365**.
- TV channel, **ProSieben**, acquires a 30% stake in **MyVideo**, a German video sharing site that launched in April, with an option on the remaining 70%. MyVideo, which hosts some 60,000 videos, also operates versions in French, Spanish and Polish.
- Vivendi subsidiary, **Universal Music**, announces the takeover of Bertelsmann's **BMG Music Publishing** for 1.63 billion EUR. Still subject to competition authorities' approval, should the deal go through it will bring Universal Music's share of the music publishing market to 25%, ahead of EMI (17%) and Warner Chappell (16%).
- **Free** announces the future construction of an Ethernet FTTH (fibre to the home) network in France – with the ISP investing 1 billion EUR over six years. The service will launch in early 2007, with subscriptions priced the same as current ADSL flat rates (29.99 EUR a month).
- **News Corp.** acquires a 51% share of **Jamba**, a VeriSign subsidiary based in Germany that produces ringtones for mobiles, for 187.5 million USD. Jamba will merge with Mobizzo, another of News Corp's mobile content publishers and, together, they will market content via a third News Corp property, MySpace.
- **BT** folds its Italian subsidiaries, **Albacom** and **Altanet**, into the BT Italia Spa brand. The new entity is expected to generate a turnover of 900 million EUR, with a staff of 1,400 and a base of 250,000 clients, over a network measuring 12,000 km.
- Marco Tronchetti Provera will be stepping down as **Telecom Italia's** president, shortly after having announced a controversial plan to split the group, focus on broadband and work to alleviate the carrier's massive debt (41.3 billion EUR as of 30 June 2006). Provera's successor, Guido Rossi, has committed to upholding this plan, and possibly to selling off the incumbent's mobile arm, **TIM.** Pursuing its acquisitions policy in the broadband market, Telecom Italia has announced the takeover of **AOL's** ISP in Germany for 675 million EUR.
- The Netherlands' incumbent carrier, **KPN**, takes control of Italian ISP **Tiscali's** Dutch subsidiary for 255 million EUR, and so adding 276,000 ADSL customers to its base, along with 126,000 telephony customers.
- **Freescale**, the world's tenth largest semiconductor maker, and a former division of Motorola, has accepted to withdraw its market listing and be taken over by an investment consortium led by Blackstone, for 17.6 billion USD.
- US micro-computer giant, **Dell**, is equipping itself with a new computer production plant in Poland, representing an investment of just over 250 million EUR (including an indirect investment of 53 million EUR from local partners and suppliers), geared to meeting the growing demand in Eastern European markets.
- Radio frequency auctions in the US have brought in 13.9 billion USD. **T-Mobile USA** (Deutsche Telecom) acquired 120 licences for 4.2 billion USD, **Verizon Wireless** 13 licences (2.8 billion USD) and the **Cox Time Warner/Comcast/Sprint Nextel** joint venture, 138 licences (2.37 billion USD).
- **Neuf cegetel** takes over **AOL France** for 288 million EUR and so gains control of its Internet access business, which has a base of 513,000 ADSL and 430,000 narrowband subscribers. At the same time, neuf cegetel has signed a five-year contract with AOL to manage its Internet portal (content supply, ad management).
- The Dutch government has announced the signature of an agreement to sell off its remaining 8% share of incumbent carrier, **KPN**, for 1.7 billion EUR.
- **MTV Networks**, subsidiary of US media group, Viacom, will be taking control of musical video game publisher, **Harmonix Music System**, for 175 million EUR.
- Investment funds, Apax and TPG, have put number three Greek mobile operator, **TIM Hellas**, up for sale, with a price tag of 4 billion EUR – after having bought it for 1.4 billion EUR one year ago.
- **IBM** has created a new division (staff of 7,000) called Integrated Communications Services, dedicated to communication networks that combine voice, data and video.
- **China Telecom** is negotiating a foreign investment partnership. The telco reports that it is in preliminary talks with five potential investors: France Télécom, NTT DoCoMo, Deutsche Telekom, Verizon and Singapore Telecom. In the country, Vodafone has already invested in China Mobile, Telefónica in China Netcom, and South Korea's SK Telecom in China Unicom.

- After having taken over Siemens's mobile phone business in 2005, Taiwan's **BenQ** announces that it will be closing down its German subsidiary. BenQ-Siemens has managed to corner an only 3.2% share of the market, well below the targeted 10%. BenQ will also be shutting down mobile phone production in its plants in Taiwan and Mexico by the end of the year.

Mergers in the pay-TV sector

Mergers between pay-TV providers continue. In the cable sector, Comcast and Time Warner each took a share of cableco Adelphia (USA); France's top two cable companies, Noos and NC-Numéricable, have now merged, as have Telewest and NTL in the UK. In Japan, the country's top cableco, Jupiter Telecommunications, has taken over the market's number three player, CableWest.

A similar trend is shaping the satellite pay-TV market, with examples that include Echostar's acquisition of part of Voom's assets (USA), and the merger underway in France between CanalSatellite and TPS.

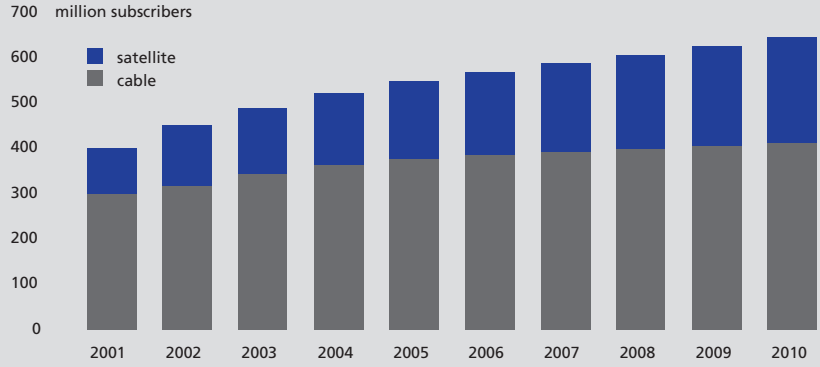
There are several reasons behind the pay-TV sector's growing concentration. First, only the most powerful companies can make the investments needed to upgrade their networks. Furthermore, the bigger the TV service distribution company, the more weight it will have when negotiating with channels. And, finally, economies of scale can be achieved for promotions, when buying hardware (network, STBs) and services (leasing satellite capacity), and when managing subscribers.

In Europe, these mergers are a response, first and foremost, to economic imperatives. Cable has been unable to stay in the black in a lasting way, and no national market appears capable of sustaining two competing satellite pay-TV providers.

The merger of pay-TV operators is also due to nascent rivalries with telcos whose triple play bundles are proving popular with consumers, and many are offering the TV component at a low cost as an incentive to subscribe to their broadband access service. Added to this, at least in Europe, telecom operators' capitalisation is in much better shape than TV companies' – which only adds to the latter's concern that telcos will eventually start outbidding them for the rights to their biggest draw programmes.

This concentration will no doubt soon come to an end, however. Given the sector's current level of concentration it seems unlikely, at least in the near future, that competition authorities will allow the number of pay-TV providers to shrink much further.

Cable and satellite subscribers around the world



Source IDATE

- French mobile operator, **SFR**, has taken over **Tele2 France's** Internet access (roughly 300,000 ADSL customers) and landline telephony (3 million customers) businesses, but not its MVNO – in a 350 million EUR cash deal.
- Currently undergoing a complete financial restructuring, French video game publisher, **Infogrames**, continues to sell off its assets. Through its US subsidiary, Atari (51% control), the company has sold one of its main development studios, **Shiny**, to American firm, **Foundation 9 Entertainment**.
- Several operations in the broadcasting sector have contributed to furthering the market's consolidation, prior to the transition to digital broadcasting. American corporation, **Crown Castle International**, moves into top spot by taking control of its rival, **Global Signal**, for 4.6 billion EUR. France's **TDF** has also changed its shareholder structure, with US investment firm, Texas Pacific Group, and its French counterpart, AXA Private Equity, acquiring, respectively, a 42% and 18% stake in the company's equity. And, finally, US investment fund, Blackstone, has announced that its is pondering the future of its controlling share of **Global Tower Partners**, acquired in 2005.
- Italian manufacturer Pirelli has finalised its acquisition of a 9.54% share of Olimpia (the holding company that controls 18% of **Telecom Italia)**, from banks Unicredit and Banca Intesa for close to 1.2 billion EUR – bringing Pirelli's share up to 80%, the remaining 20% being owned by the Benetton family.
- **Deutsche Telekom** will be investing up to 2.1 billion EUR over three years in a 3G cellular network in the US, with plans to launch the service by the end of the year, and to have completed its rollout by 2008.
- The Dolan family, which owns 22.5% of **Cablevision**, has announced its takeover bid for the remaining shares, putting the US cableco's worth at 7.9 billion USD.
- With its acquisition of **YouTube**, a start-up that allows web users to exchange videos online, **Google** becomes the Internet's video leader – at the cost of 1.65 billion USD in shares.
- Italian incumbent carrier, **Telecom Italia**, has finalised its withdrawal from Brazil's landline market by transferring its 38% stake in Solpart, **Brasil Telecom's** majority shareholder, to a new company called Brasilco. While waiting for the sale to become final, the incumbent has satisfied the demands of the local regulator who ruled that there was a conflict of interest as Telecom Italia was already present in Brazil's mobile market via TIM, and so competing with Brasil Telecom's mobile network.
- Indian telco, **BSNL**, has pre-selected **Ericsson**, **Siemens and Nokia** for two contracts worth a total 5 billion USD, while rejecting offers from **Motorola** and **ZTE**.
- The US anti-trust authority (FTC) has approved the terms of the 67 billion USD merger between telcos **AT&T** and **BellSouth**. But the deal still needs to get the green light from the FCC, which has postponed its decision.
- **France Télécom** has announced that it has finalised the sale of its 54% stake in **PagesJaunes** (Yellow Pages) to investment fund, Kohlberg Kravis Roberts (KKR), in a deal worth 3.312 billion EUR.
- **Philips Electronics** announces plans to transfer its remaining mobile phone operations to **China Electronics Corporation** (CEC).
- Japanese cellular operator, **KDDI**, will be taking over **Tepco's** optical fibre network for 115 billion JPY, through a share swap.
- US telco, **Level 3**, has announced the takeover of its counterpart, **Broadwing Corp.**, for 1.4 billion USD in cash and shares. Broadwing owns an all optical network, and supplies data, voice and video solutions to large corporations. This is the sixth acquisition in less than a year for Level 3, which has spent a total 3.8 billion USD.
- Citing fiscal reasons, American carrier, **Verizon**, has elected to spin off its directory business rather than sell it.
- **Iliad**, parent company of French ISP, **Free**, has announced the takeover of Parisian fibre to the home (FTTH) specialist, **Citéfibre**
- Sweden's **Tele2**, has acquired a 49% stake in fellow Swedish operator, **Spring Mobil**, for an estimated 150 million SEK, with the option of gaining full control in early 2009. Spring Mobile holds one of Sweden's four GSM licences, and Tele2 will be able to use some of its frequencies.
- American firm, **Oracle**, has announced plans to take over California-based, **Metasolv Software**, specialised in professional media and communication software, for 219 million USD.
- Mobile operator **3UK**, a Hutchison Whampoa subsidiary, has acquired 95 shops from its rival **O_2**, a Telefónica subsidiary.
- **Neuf cegetel**, one of France Télécom's main competitors in the French market, has launched a successful IPO. The operation allowed the telco to raise 818 million EUR, distributed between an increase in equity (216 million) and the sale of existing assets (602 million).
- The world's two satellite operators, **SES Global** and **Eutelsat**, have announced the creation of a 50-50 joint venture, geared to building a satellite infrastructure for broadcasting media content and data to mobiles and vehicles. The company will begin operations with an initial investment of 130 million EUR.

The search engine empire: Google buys YouTube

Buy buying the YouTube video sharing site for 1.65 billion USD, Google has confirmed intermediation's role at the core of its business model. The internet's great success stories (which include Google, Yahoo!, eBay and Meetic) all offer a Search, Find, Obtain trio that relies on indexing of pages, products and people, and putting customers and products, or people in contact with one another… thanks to a search engine.

Although portals and search engines are all working to set up paid services, they are still very much anchored in a traffic generation model that allows them to monetise their audience through advertising, and particularly through sponsored links that allow online services to enjoy greater exposure.

Nevertheless, if its takeover of YouTube does endow Google with an added flow of traffic, and so more ad revenues, a number of uncertainties remain:

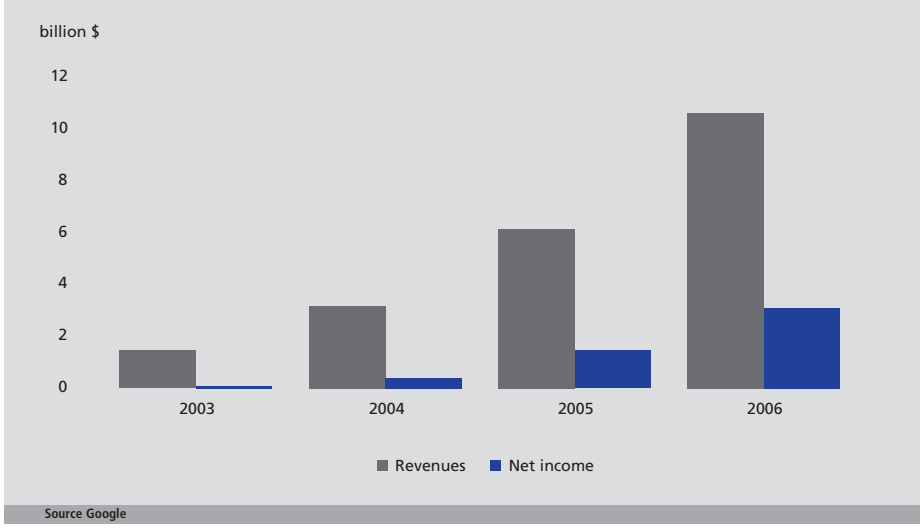
Storing user-generated videos requires a sizeable investment, shouldered by YouTube, and which will grow as access speeds increase and so spur demand for the distribution of better quality videos. Ad revenues' ability to cover these costs remains to proven.

In its role as a combined personal and multimedia device, the mobile phone appears as a natural target for YouTube's expansion, for both accessing and uploading videos. But the way that this potential expansion will take shape depends entirely on cellular operators' mobile internet access strategies.

And, above all, YouTube is gradually setting itself up as a distributor of copyrighted content, even though (for now) the quality of the videos is far from rivalling the quality of TV programmes available on DVD, or even on P2P networks. Users upload TV programmes to YouTube which have either been recorded off their set or copied off a DVD, without the copyright holders' consent. While rights holders could benefit from the ability to promote their programmes on YouTube, most are concerned that this unauthorised dissemination of their products is diminishing their value with respect to TV channels, without even earning them a share of YouTube's ad revenues. To get a jump on potential law suits, YouTube is developing a content filtering technique that allows them to identify copyrighted material.

In any event, Google's takeover of YouTube has forced the competition to react – each now developing their own user-generated offers: Microsoft with Windows Live Space and Yahoo! with Yahoo! 360°.

Google's sales and net profits



Source Google

- French consumer electronics giant, **Thomson**, has announced that it is cutting its stake in Hong Kong's **TCL Multimedia** from 29.3% to 19.3%.
- French video game publisher, **Infogrames Entertainment**, has announced the sale of its in-house studio, **Atari Melbourne House**, to Australian firm **Krome Studios**.
- The disqualification of Greek operator **Cosmote** and Romania's **SNR** from obtaining a UMTS licence in Romania was upheld on appeal. Licences have been awarded to **Telemobil** and to cable operator **RCS&RDS**.
- Satellite operator **Globalstar** has raised 127 million USD from its IPO on Nasdaq.
- Greek telco **OTE** has sold 90% of Armenian telecom carrier, **Armentel**, to Russia's **Vimpelcom** for 342 million EUR, plus 40 million EUR in debt takeover. OTE had acquired this stake in 1998 for 120 million EUR.
- Algerian incumbent, **Algérie Télécom**, has announced that it will be opening up to outside investors in Q1 2007, citing France Télécom, BT and Telefónica as potential shareholders.
- Italian corporation, Pirelli, has depreciated its share of **Telecom Italia** by 2.11 billion EUR, forcing it to report net losses of 1.41 billion EUR for the first nine months of the year. Pirelli owns 80% of Olimpia, the holding company that controls 18% of Telecom Italia.
- Mobile operators **Orange** and **Vodafone** have signed an agreement to share the cost of deploying their 3G networks in rural areas in Spain.
- Saudi construction company, Saudi Oger, wants to raise 1.25 billion USD by launching an IPO for its telecom division on the Dubai and London stock exchanges. The operation values Oger Telecom at 5.7 billion USD. Shareholders include Telecom Italia (10%) and Jordan's Arab Bank. **Oger Telecom** owns 55% of Türk Telekom, 75% of South African mobile operator Cell C and 95% of Cyberia, an ISP with operations in Saudi Arabia, Lebanon and Jordan.
- Financier Francis Leung has sold 8% of Hong Kong operator **PCCW** to **Telefónica** for 415 million USD, plus 12% to a foundation controlled by billionaire Li KaShing for 625 million USD. The Spanish telco will combine its 8% with China Netcom's 20% stake in PCCW.
- In France, the Caisse des Dépôts has spent 9.6 million EUR, to acquire 20% of WiMAx operator **HDRR**.
- The European Commissioner for Information Society has stated her support for an independent European Telecom Authority. At the same time, the European Competitive Telecommunications Association, ECTA, is pressing the Commissioner to demand that incumbent carriers implement a functional separation of their operations.
- British mobile operator, **3**, owned by Hong Kong conglomerate **Hutchison Whampoa**, has unveiled a new offer that allows its subscribers to make calls over **Skype** and to access **Google**, **Yahoo!** and **Microsoft** instant messaging.
- The **Lagardère** group has taken over the **Sportfive** sports rights from investment fund Advent (65%) and the **RTL Group** (25%), for roughly 865 million EUR.
- British incumbent **BT** has sold its satellite TV broadcasting business (present in France and elsewhere) to Australian company **Arqiva** for 25 million GBP. BT has also taken over ISP **PlusNet** for 67 million GBP in cash.
- In Austria, mobile operator **One** is up for sale. It is currently owned by **France Télécom** (17.45%), **E.On** (50.1%), **Telenor** (17.45%) and **TDC** (15%), the last three all looking to sell their shares. The sale is expected to be finalised some time in early 2007.
- **BSkyB** acquires 17.9% of **ITV**, a deal which led to ITV's rejection of the offer made by cableco **NTL** (which valued the company at 4.7 billion GBP).
- In the United States, cableco **Comcast** (24 million subscribers) has secured an agreement with **Disney** to broadcast the series and movies produced by the company's channels (ABC, ESPN...) and studios (Disney, Miramax and Touchstone) on-demand. Comcast will pay 1 billion EUR a year to make these programmes available to subscribers.
- **Swisscom** has announced that it is in talks with **Vodafone** to acquire the UK operator's 25% stake in **Swisscom Mobile**, which has received the go-ahead for the deal from Switzerland's federal council. This 25% stake had been sold for 2.5 billion EUR in 2001. Vodafone has recently pulled out of Sweden, Japan and Belgium.
- In France, telecoms regulator ARCEP has indicated that it has received several responses to its call for potential candidates for the country's possible fourth 3G mobile licence, including ones from ISP **Free** and cable operator **Noos Numéricâble**.
- Private equity funds Lehman, Mid Europa and Al Bateen spend 1.2 billion EUR to take control of operator, **Ceske Radiokomunikace**, whose holdings include a 39.2% stake in Deutsche Telekom's Czech mobile subsidiary.
- Operator **P&T Luxembourg** announces the construction of a pan-European network measuring 3,000 km, connecting Paris, Strasbourg, Brussels, Frankfurt, London and Amsterdam.
- **Telekom Austria** and Serbian incumbent, **Telekom Srbije**, have tabled offers for a 65% stake in

Bosnian carrier, **Telekom Srpske** – for which a starting price of 400 million EUR had been set.

- Videos on the popular **YouTube** site will be accessible for a limited time to American mobile operator **Verizon Wireless's** subscribers. This marks the first deal of its kind aimed at distributing YouTube videos on mobile phones.
- US equipment manufacturer, **3Com**, takes full control of its Asian joint-venture created in 2003 with China's **Huawei**, by buying the remaining 49% stake for 882 million USD. Huawei, which accounts for 17% of 3Com's sales, has agreed not to compete with its former subsidiary for 18 months.
- **Alcatel** and **Lucent** finalise their merger.

Satellite: what growth outlets?

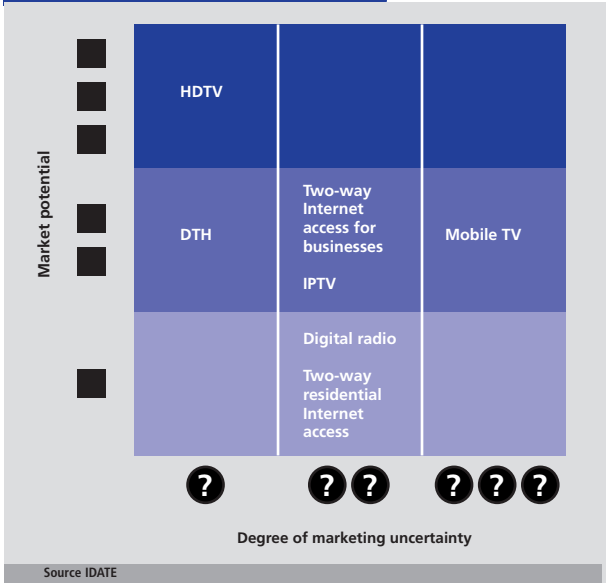
In the commercial services market, satellite operators have been faced with a situation of excess capacity for several years now, which is more or less extreme depending on the geographical zone and frequency band in question (an average, between 30% and 60% of satellite transponders are idle). This situation is expected to last for several years to come, in view of upcoming launches, and demand for satellite capacity is not likely to begin to exceed available capacity until some time around 2015.

As a result, satellite operators need to explore new potential growth outlets: high definition TV, digital radio, mobile TV, internet services, DTH and geographical positioning are all applications capable of generating a significant demand for satellite capacity. Although operators can, theoretically, position themselves in all of these markets, not all offer the same prospects.

- Over the next few years, satellite will likely remain a major player in TV distribution, but this market has more or less reached its maturity, and there is little room for newcomers.
- HDTV represents a major source of opportunity for satellite operators.
- Growth of the mobile TV market will automatically lead to the construction of new, dedicated high-power satellites, but major uncertainties remain over when the new offers will be actually launched.
- The business model associated with a digital satellite radio service aimed chiefly at vehicles appears a risky one for satellite operators.
- The one-way internet access market has little chance of significant growth, having to contend with the swift and steady deployment of wireline broadband solutions, and with new two-way satellite access offers which are themselves competing with more popular technologies.
- The more nascent mobile internet connectivity market could enjoy substantial growth in the coming years, but will remain a niche market.
- Given the systems' sophistication and increasing reliability, the GPS market will undoubtedly continue to grow, but it is not an easy market to penetrate.

All in all, then, although there are real prospects for growth, a major shift in strategy for operators with no solid foothold will be a much trickier affair.

Most attractive markets for satellite operators



Source IDATE

- In early January 2007, cable operator **Noos-Numéricâble** will be launching a very high-speed Internet access offer (100 Mbps) over fibre optic network (FTTB). Services will first be opened in Paris and Strasbourg, then later expanded to towns with over 100,000 inhabitants. The cableco also hopes to be awarded France's fourth 3G licence.
- The largest pan-European cable provider, **Liberty Global** has sold its Belgian subsidiary to **Telenet** for 187 million EUR, and remains Telenet's leading shareholder with a 28% stake.
- Italian energy company, **Enel**, sells its 26.1% stake in Weather Investments, the holding company that owns **Wind** and 50% of **Orascom**, for 1.96 billion EUR, to Egyptian businessman, Naguid Sawiris.
- **TeliaSonera** has launched "**Yoigo**", Spain's fourth mobile operator. The new 3G network currently covers only 25% of the population (Madrid, Barcelona and six other cities), but the operator will be able to provide nationwide coverage using **Vodafone España's** 2G network, thanks to a roaming agreement.
- Telecom equipment supplier **Alcatel-Lucent** sells its Transport, Security and Space businesses to electronics and aerospace giant, **Thales**, for 800 million EUR. In exchange, Alcatel-Lucent increases its stake in Thales from 10% to 20.95%.
- French media company, **TF1**, beefs up its position in the DTT (digital terrestrial TV) market by announcing the acquisition of a 33.5% share of the **AB Group** for 230 million EUR.
- France's **Caisse des Dépôts and Consignations** acquires a 25.5% stake in **Eutelsat Communications**, which is controlled by **Eurazeo**, for 862.7 million EUR.
- Five operators have bid on **Hutchison Telecommunications International's** Indian GSM operator, **Hutchison Essar**: the UK's **Vodafone**, Malaysia's **Maxis**, India's **Essar**, Egypt's **Orascom** in alliance with **Qatar Telecom**, and India's **Reliance**, tabling offers ranging from 13.5 billion to 17 billion USD.
- **France Télécom** announces the launch of the first phase of its fibre optic network rollout in 2007, with a target of covering between 150,000 and 200,000 subscribers by the end of 2008. The French incumbent plans on spending 270 million EUR on its new network over the next two years, with the aim of covering one million customers.
- UK satellite pay-TV provider, **BSkyB**, which recently entered the Internet access market, announces the takeover of the **365 Media** online sports and betting sites, for 154 million EUR, giving it access to 9 million monthly users.
- **Swisscom** acquires the remaining 25% of **Swisscom Mobile** from **Vodafone**, for 2.66 billion EUR.
- Finding itself outdone by rival **Alibaba** and its **Taobao** site, online auction giant **eBay** will be creating a joint venture with Chinese firm, **Tom Online**. eBay will be investing 40 million USD to gain a 49% stake in Tom Online, which reports a base of 75 million regular users – the remaining 51% being controlled by Hong Kong magnate, **Li Ka-Shing**.
- Media heavyweight, Rupert Murdoch has signed an agreement with **Liberty Media** for the sale of a 16.3% stake in **News Corp.** (valued at 11 billion USD). In exchange, Murdoch will give Liberty Media a 38.5% share in **DirectTV** – the number one satellite pay-TV provider in the US – along with three regional sports channels and 550 million USD in cash.
- Indian firm, **Reliance**, has earmarked 1.5 billion USD for a global undersea cable network spanning 50,000 km, baptised "Flag NGN". It will be composed of four cables running between India and Hong Kong, South Africa and Kenya, Greece and Lebanon, and California and China.
- Portugal's competition authority has approved **Sonaecom's** takeover bid for **Portugal Telecom (PT)** – in a 1.1 billion EUR cash deal – with the proviso that it must sell either PT's landline network or its cable network.
- Canadian telecom equipment maker, **Nortel**, has signed a five-year, 2 billion USD contract with American cellular operator, **Verizon Wireless**, for its CDMA2000 3G network.
- Swedish telecom equipment maker, **Ericsson**, has taken control of US router supplier, **Redback**, for 2.1 billion USD.
- **Nintendo's** new home console, the Wii, arrives in Europe after having sold over a million units in the United States and Japan.
- The **FCC** has given the go-ahead for a new franchise system (negotiations for agreements to launch TV services with local governments, and no longer on a city-by-city basis), in a bid to facilitate US telcos' entry into the cable TV market.
- The European Parliament has ratified a new version of the **Television without Frontiers** Directive, now called the **Audiovisual Media Services** Directive, extended to include "non-linear" services such as video on demand, and implementing more flexible advertising rules.

FTTx rollouts: when and why?

Broadband's massive success around the globe (over 210 million subscribers at the end of 2005) was achieved through a combination of competition policies and operators' investments in upgrading copper phone loops and cable networks, and through the launch of an array of innovative services (shared by portals and internet companies on the one hand, and by telcos' and cablecos' triple play bundles on the other).

The access speeds delivered by DSL and cable technologies have increased considerably over the past five years, going from a typical connection of 512 kbps to close to 20 Mbps. But the limitations of current infrastructures are starting to be felt, both with respect to peak performances and the population's eligibility for the highest bitrates on offer (limits of DSL's range).

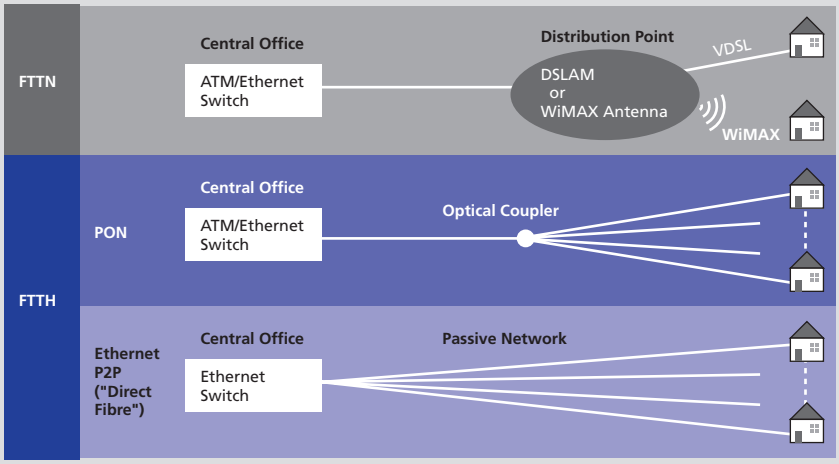
As a result, there has been a revival in interest for large-scale rollouts of networks based fully (FTTH) or partially (FTTN) on optical technologies capable of delivering very high-speed (VHS) connections, i.e. well beyond the limits of DSL (20Mbps).

A look at current FTTx deployments reveals the diversity of initiatives being taken in the main geographical zones, with rollout costs (which vary depending on the technologies used, the population density in the zone being covered, the mode for accessing passive infrastructures…) and the regulatory framework (open access or not to fibre networks) being the key factors in operators' current positioning.

As it stands, very few applications or services can single-handedly justify the need for speeds of over 20 Mbps, but vendors are all looking to the future as a rise in demand will no doubt soon be spurred both in the consumer market – by simultaneous consumption (several users in the same household), the multiplication of applications delivered by telcos' service boxes and the proliferation of multimedia devices (digital cameras and camcorders, HDTV, DVR, webcams, MP3 players…) – and in the business market by the growing ubiquity of workstations connected to the web, and so driving the use of higher speed offers and the development of increasingly bandwidth hungry business applications.

Several rollout scenarios are possible which, depending on several criteria and on the country involved, will lead to fibre optic coverage of between 20% to 80% of households by 2015.

Main FTTx technical configurations



Source IDATE

Country profiles

France

Markets

(billion €)	2003	2004	2005	2006
Telecom services	33.0	33.8	34.7	35.4
Fixed telephony	12.7	12.0	11.5	11.0
Internet & data	4.9	5.0	5.4	5.8
Mobile services	15.4	16.8	17.8	18.6
Telecom equipment	-	-	6.3	6.4
Terminals	-	-	2.1	2.2
Enterprise equipment	-	-	1.5	1.6
Network equipment	-	-	2.6	2.6
TV services	8.5	9.0	9.3	10.0
Subscription	4.0	4.1	4.2	4.7
Public funding	1.5	1.6	1.7	1.7
Advertising	3.0	3.2	3.4	3.6

Subscribers

(million)	2003	2004	2005	2006
Fixed access lines	33.9	33.6	33.1	32.2
as a % of inhabitants	56.3%	55.6%	54.6%	52.9%
Cellular customers	40.4	43.1	46.5	50.0
as a % of inhabitants	67.1%	71.4%	76.6%	82.1%
Broadband subscribers	3.7	6.8	9.4	12.0
as a % of inhabitants	6.1%	11.2%	15.6%	19.7%
Multichannel TV homes	8.5	9.1	10.5	14.1
as a % of TV homes	36.0%	38.4%	40.3%	46.2%
Digital TV homes	5.0	5.6	7.3	11.3
as a % of TV homes	21.1%	23.7%	30.8%	46.8%

Macro-economic data

	2003	2004	2005	2006
Population (million inhabitants)	60.2	60.4	60.7	60.9
GDP (billion €)	1 586.7	1 645.9	1 696.8	–

Germany

Markets

(billion €)	2003	2004	2005	2006
Telecom services	49.4	51.5	52.6	52.6
Fixed telephony	17.8	18.2	18.6	17.8
Internet & data	7.8	7.9	8.1	8.4
Mobile services	23.7	25.4	25.9	26.4
Telecom equipment	-	-	7.7	7.9
Terminals	-	-	2.8	2.9
Enterprise equipment	-	-	2.2	2.3
Network equipment	-	-	2.7	2.7
TV services	11.3	11.5	12.1	12.3
Subscription	3.4	3.5	3.6	3.6
Public funding	4.1	4.1	4.6	4.7
Advertising	3.8	3.9	3.9	4.0

Subscribers

(million)	2003	2004	2005	2006
Fixed access lines	54.2	54.4	54.2	53.5
as a % of inhabitants	65.8%	66.0%	65.8%	64.9%
Cellular customers	64.8	71.3	79.2	85.0
as a % of inhabitants	78.6%	86.5%	96.1%	103.2%
Broadband subscribers	4.6	6.9	11.0	12.7
as a % of inhabitants	5.6%	8.3%	13.3%	15.4%
Multichannel TV homes	35.4	36.0	36.6	37.0
as a % of TV homes	93.9%	94.2%	94.5%	94.8%
Digital TV homes	4.7	5.8	7.2	8.2
as a % of TV homes	12.7%	15.4%	19.2%	21.9%

Macro-economic data

	2003	2004	2005	2006
Population (million inhabitants)	82.4	82.4	82.4	82.4
GDP (billion €)	2163.4	2215.7	2245.5	-

Italy

Markets

(billion €)	2003	2004	2005	2006
Telecom services	30.5	32.4	33.7	34.5
Fixed telephony	9.8	9.6	9.1	8.6
Internet & data	3.1	4.0	4.6	5.2
Mobile services	17.5	18.9	20.1	20.7
Telecom equipment	-	-	6.5	6.6
Terminals	-	-	2.6	2.6
Enterprise equipment	-	-	0.8	0.8
Network equipment	-	-	3.1	3.1
TV services	6.7	7.6	8.2	9.3
Subscription	1.2	1.6	2.0	2.4
Public funding	1.5	1.6	1.5	1.5
Advertising	4.0	4.4	4.7	5.4

Subscribers

(million)	2003	2004	2005	2006
Fixed access lines	27.5	27.1	26.6	26.0
as a % of inhabitants	47.4%	46.7%	45.8%	44.8%
Cellular customers	56.6	62.7	71.5	80.0
as a % of inhabitants	97.7%	107.9%	123.1%	137.6%
Broadband subscribers	2.5	4.8	6.8	9.0
as a % of inhabitants	4.3%	8.2%	11.8%	15.5%
Multichannel TV homes	5.1	7.2	9.9	11.7
as a % of TV homes	23.0%	26.3%	28.7%	32.1%
Digital TV homes	3.4	5.5	8.4	10.2
as a % of TV homes	15.2%	24.6%	37.2%	44.9%

Macro-economic data

	2003	2004	2005	2006
Population (million inhabitants)	58.0	58.1	58.1	58.1
GDP (billion €)	1 300.9	1 351.3	1 385.5	-

Spain

Markets

(billion €)	2003	2004	2005	2006
Telecom services	19.2	21.2	23.4	24.7
Fixed telephony	6.4	6.5	6.6	6.6
Internet & data	2.6	2.9	3.4	3.7
Mobile services	10.2	11.7	13.4	14.4
Telecom equipment	-	-	4.3	4.6
Terminals	-	-	2.0	2.0
Enterprise equipment	-	-	0.5	0.5
Network equipment	-	-	1.9	2.1
TV services	4.0	4.2	4.5	5.1
Subscription	1.5	1.3	1.4	1.6
Public funding	0.1	0.1	0.1	0.1
Advertising	2.4	2.8	3.1	3.4

Subscribers

(million)	2003	2004	2005	2006
Fixed access lines	19.8	20.0	19.7	19.5
as a % of inhabitants	45.5%	45.8%	45.2%	44.7%
Cellular customers	37.5	39.2	43.1	47.0
as a % of inhabitants	86.1%	89.9%	98.7%	107.4%
Broadband subscribers	2.3	3.5	5.1	6.7
as a % of inhabitants	5.2%	7.9%	11.6%	15.3%
Multichannel TV homes	3.5	3.8	5.7	7.1
as a % of TV homes	24.4%	26.2%	31.5%	35.6%
Digital TV homes	2.2	2.4	4.1	5.8
as a % of TV homes	15.9%	17.1%	29.4%	41.0%

Macro-economic data

	2003	2004	2005	2006
Population (million inhabitants)	43.6	43.6	43.7	43.8
GDP (billion €)	780.6	837.6	902.7	-

United Kingdom

Markets

(billion €)	2003	2004	2005	2006
Telecom services	38.6	40.4	41.2	41.6
Fixed telephony	14.0	13.2	12.3	11.5
Internet & data	6.7	7.2	7.4	7.7
Mobile services	17.9	20.0	21.5	22.3
Telecom equipment	-	-	9.0	9.4
Terminals	-	-	3.1	3.2
Enterprise equipment	-	-	1.8	2.0
Network equipment	-	-	4.1	4.2
TV services	14.0	15.4	15.3	16.7
Subscription	4.9	5.5	6.0	6.4
Public funding	4.2	4.6	4.6	4.8
Advertising	4.9	5.4	4.7	5.5

Subscribers

(million)	2003	2004	2005	2006
Fixed access lines	34.6	34.0	32.3	31.5
as a % of inhabitants	57.6%	56.4%	53.5%	52.0%
Cellular customers	54.5	62.1	67.8	69.2
as a % of inhabitants	90.7%	103.1%	112.1%	114.2%
Broadband subscribers	3.1	6.2	9.9	12.6
as a % of inhabitants	5.1%	10.4%	16.3%	20.9%
Multichannel TV homes	13.4	15.7	18.3	21.4
as a % of TV homes	40.7%	42.3%	44.6%	48.4%
Digital TV homes	12.4	14.9	17.6	21.0
as a % of TV homes	48.2%	57.6%	67.3%	79.5%

Macro-economic data

	2003	2004	2005	2006
Population (million inhabitants)	60.1	60.3	60.4	60.6
GDP (billion €)	1 616.9	1 702.4	1 767.6	-

United States

Markets

(billlion €)	2003	2004	2005	2006
Telecom services	222.2	227.5	234.5	239.9
Fixed telephony	100.1	91.9	87.2	81.6
Internet & data	51.6	53.5	56.0	58.3
Mobile services	70.5	82.1	91.3	100.0
Telecom equipment	-	-	46.5	48.0
Terminals	-	-	19.8	21.0
Enterprise equipment	-	-	8.8	9.5
Network equipment	-	-	17.9	17.5
TV services	85.4	91.8	96.0	100.9
Subscription	38.0	42.3	46.0	48.8
Public funding	0.4	0.4	0.4	0.4
Advertising	47.0	49.0	49.5	51.7

Subscribers

(million)	2003	2004	2005	2006
Fixed access lines	183.0	177.9	170.7	162.0
as a % of inhabitants	63.0%	60.7%	57.7%	54.3%
Cellular customers	158.7	182.1	207.9	232.8
as a % of inhabitants	54.7%	62.2%	70.3%	78.0%
Broadband subscribers	79.1	80.0	84.9	84.0
as a % of inhabitants	27.2%	27.3%	28.7%	28.1%
Multichannel TV homes	96.4	99.4	104.9	109.1
as a % of TV homes	88.5%	89.3%	91.5%	93.1%
Digital TV homes	44.5	51.2	60.0	69.9
as a % of TV homes	41.1%	46.7%	54.4%	63.1%

Macro-economic data

	2003	2004	2005	2006
Population (million inhabitants)	290.3	293.0	295.7	298.4
GDP (billion €)	8848.3	9436.0	9436.0	-

China

Markets

(billion €)	2003	2004	2005	2006
Telecom services	49.2	55.2	60.6	66.9
Fixed telephony	20.5	22.5	23.2	23.0
Internet & data	3.5	4.2	5.2	6.2
Mobile services	25.2	28.5	32.2	37.6
Telecom equipment	-	-	21.7	23.0
Terminals	-	-	11.6	12.3
Enterprise equipment	-	-	1.1	1.2
Network equipment	-	-	9.0	9.6
TV services	5.1	5.7	6.6	7.1
Subscription	2.5	2.7	3.1	3.4
Public funding	-	-	-	-
Advertising	2.6	3.0	3.5	3.8

Subscribers

(million)	2003	2004	2005	2006
Fixed access lines	262.7	311.8	350.0	375.0
as a % of inhabitants	20.5%	24.3%	27.3%	29.2%
Cellular customers	268.6	317.6	374.4	450.0
as a % of inhabitants	20.9%	24.7%	29.2%	35.0%
Broadband subscribers	12.1	26.7	41.4	58.0
as a % of inhabitants	0.9%	2.1%	3.2%	4.5%
Multichannel TV homes	131.0	144.0	152.1	157.3
as a % of TV homes	39.7%	42.6%	44.6%	44.4%
Digital TV homes	0.3	0.7	3.7	7.2
as a % of TV homes	0.1%	0.2%	1.1%	2.0%

Macro-economic data

	2003	2004	2005	2006
Population (million inhabitants)	1 284.3	1 284.3	1 284.3	1 284.3
GDP (billion €)	1 194.5	1 572.8	1 789.1	-

India

Markets

(billlion €)	2003	2004	2005	2006
Telecom services	8.3	10.8	12.3	15.6
Fixed telephony	6.0	7.0	6.9	6.8
Internet & data	0.7	0.9	1.2	1.5
Mobile services	1.6	3.0	4.3	7.3
Telecom equipment	-	-	7.3	10.0
Terminals	-	-	3.1	5.0
Enterprise equipment	-	-	1.0	1.1
Network equipment	-	-	3.2	3.9
TV services	2.4	2.9	3.6	3.8
Subscription	1.9	2.3	2.6	2.8
Public funding	0.0	0.0	0.0	0.0
Advertising	0.5	0.6	1.0	1.0

Subscribers

(million)	2003	2004	2005	2006
Fixed access lines	42.1	44.9	48.8	51.8
as a % of inhabitants	4.0%	4.2%	4.5%	4.7%
Cellular customers	28.4	48.0	75.9	142.0
as a % of inhabitants	2.7%	4.5%	7.0%	13.0%
Broadband subscribers	0.0	0.2	0.9	3.2
as a % of inhabitants	0.0%	0.0%	0.1%	0.3%
Multichannel TV homes	52.1	58.8	62.7	66.9
as a % of TV homes	62.8%	69.2%	72.1%	73.1%
Digital TV homes	0.0	0.2	0.7	2.7
as a % of TV homes	0.0%	0.3%	0.8%	3.0%

Macro-economic data

	2003	2004	2005	2006
Population (million inhabitants)	1 049.7	1 065.1	1 080.3	1 095.4
GDP (billion €)	503.3	566.2	643.5	-

Japan

Markets

(billion €)	2003	2004	2005	2006
Telecom services	108.1	109.6	110.6	109.4
Fixed telephony	43.7	42.8	41.8	39.4
Internet & data	7.5	7.9	8.4	9.4
Mobile services	56.9	58.9	60.4	60.6
Telecom equipment	-	-	25.2	25.9
Terminals	-	-	12.7	12.3
Enterprise equipment	-	-	2.6	2.8
Network equipment	-	-	9.9	10.8
TV services	25.6	26.6	28.5	29.4
Subscription	6.5	7.4	8.3	8.5
Public funding	4.9	4.9	4.8	4.9
Advertising	14.2	14.3	15.4	16.0

Subscribers

(million)	2003	2004	2005	2006
Fixed access lines	60.0	58.8	54.8	54.0
as a % of inhabitants	47.2%	46.1%	43.0%	42.3%
Cellular customers	79.8	85.5	90.2	95.6
as a % of inhabitants	62.7%	67.1%	70.8%	75.0%
Broadband subscribers	13.7	18.6	22.4	27.0
as a % of inhabitants	10.7%	14.6%	17.6%	21.2%
Multichannel TV homes	35.6	40.6	47.0	48.6
as a % of TV homes	73.3%	77.8%	83.0%	84.6%
Digital TV homes	9.0	13.9	19.8	23.3
as a % of TV homes	18.7%	28.9%	41.1%	48.1%

Macro-economic data

	2003	2004	2005	2006
Population (million inhabitants)	127.2	127.3	127.4	127.5
GDP (billion €)	3631.7	3685.3	3665.7	-

South Korea

Markets

(billlion €)	2003	2004	2005	2006
TTelecom services	19.5	20.6	21.6	21.8
Fixed telephony	4.0	3.9	3.9	3.8
Internet & data	5.2	5.4	5.7	5.8
Mobile services	10.4	11.2	12.0	12.3
Telecom equipment	-	-	6.5	6.8
Terminals	-	-	3.6	3.5
Enterprise equipment	-	-	1.0	1.1
Network equipment	-	-	2.0	2.3
TV services	-	-	-	-
Subscription	-	-	-	-
Public funding	-	-	-	-
Advertising	-	-	-	-

Subscribers

(million)	2003	2004	2005	2006
Fixed access lines	22.9	22.5	22.4	22.4
as a % of inhabitants	47.5%	46.4%	46.0%	46.0%
Cellular customers	33.6	36.6	38.3	40.1
as a % of inhabitants	69.7%	75.6%	78.8%	82.0%
Broadband subscribers	11.2	11.9	12.2	12.5
as a % of inhabitants	23.2%	24.6%	25.0%	25.6%
Multichannel TV homes	-	-	-	-
as a % of TV homes	-	-	-	-
Digital TV homes	-	-	-	-
as a % of TV homes	-	-	-	-

Macro-economic data

	2003	2004	2005	2006
Population (million inhabitants)	48.2	48.4	48.6	48.8
GDP (billion €)	569.0	611.2	633.3	-

Glossary

2G	2nd (cellular) Generation
3G	3rd (cellular) Generation
4G	4th (cellular) Generation
ADSL	Asymetrical Digital Subscriber Line
ARPU	Average Revenue Per User
ASP	Application Service Provider
ATM	Asynchronous Transfer Mode
BI	Business Intelligence
BPM	Business Process Management
BPO	Business Process Outsourcing
BtoB	Business to Business
BtoC	Business to Consumer
BWA	Broadband Wireless Access
CDMA	Code Division Multiple Access
CDMA EV DO	Code Division Multiple Access Evolution-Data Optimized
CE	Consumer Electronics
CRM	Consumer Relationship Management
CtoC	Consumer to Consumer
DECT	Digital Enhanced (former European) Cordless Telecommunications
DRM	Digital Rights Management
DSL	Digital Subscriber Line
DTTV	Digital Terrestrial Television
DVD	Digital Video Disc
EDGE	Enhanced Data rates for GSM Evolution
EDI	Electronic Data Interchange
ERP	Enterprise Resource Planning
FFA	Field Force Automation
FFTH	Fiber To The Home
Flash OFDM	Flash - Orthogonal Frequency-Division Multiplexing
FOD	Free on Demand
FSO	Financial Services Outsourcing
FTTB	Fiber To The Building
FTTx	Fiber To The x (Home, Building, Premises, Curb)
FVNO	Fixed Virtual Network Operator
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
IM	Instant Messaging
IMS	IP Multimedia Subsystem
IMS	Integrated Management Software
IP	Internet Protocol
IPTV	Internet Protocol Television
ISDN	Integrated Services Digital Network
ISP	Internet Service Provider
ITO	Information Technology Outsourcing
LAN	Local Area Network
LCD	Liquid Crystal Display
M2M	Machine to Machine
MBMS	Multimedia Broadcast Multicast Service
MMO	Massive Multiplayer Online
MMOG	Massive Multiplayer Online Game
MNO	Mobile Network Operator
MP3	MPEG Audio Layer 3
MPLS	Multi Protocol Label Switching
MVNO	Mobile Virtual Network Operator
NGN	Next Generation Network
nPVR	near Personal Video Recorder
P2P	Peer to Peer
PABX	Private Automatic Branch Exchange
PBX	Private Branch Exchange
PC	Personal Computer
PDA	Personal Digital Assistant
PER	Price Earning Ratio
PHS	Personal Handyphone System
PPV	Pay Per View
PSTN	Public Switched Telephone Network
PVR	Personal Video Recorder
RBOC	Regional Bell Operating Company
RFID	Radio Frequency Identification
RSS	Really Simple Syndication ou Rich Site Summary
SCM	Supply Chain Management
SFO	Search-Find-Obtain
SIM	Subscriber Identity Module
SIP	Session Initiation Protocol
SLA	Site-Level Aggregator
SMEs	Small and Medium Enterprises
SMIs	Small and Medium Industries
SMS	Short Message Service
SOA	Service Oriented Architecture
SoHo	Small offices Home offices
SVOD	Subscription Video On Demand
TDM	Time Division Multiplex
TV	Television/TV set
UHF	Ultra high frequency
UMA	Unlicensed Mobile Access
UMTS	Universal Mobile Telecommunication System
VAT	Value-added Tax
VDSL	Very High Speed Digital Subscriber Line
VHF	Very high frequency
VOD	Video On Demand
VoIP	Voice over IP
VPN	Virtual Private Network
WAN	Wide Area Network
WCDMA	Wideband Code Division Multiple Access
WDM	Wavelength-division multiplexing
WiBro	Wireless Broadband
Wifi	Wireless Fidelity
WiMax	Worldwide interoperability for Microwave Access
WLAN	Wireless Local Area Network
xDSL	x Digital Subscriber Line
XML	Extensible Markup Language
XMPP	Extensible Messaging and Presence Protocol

Index

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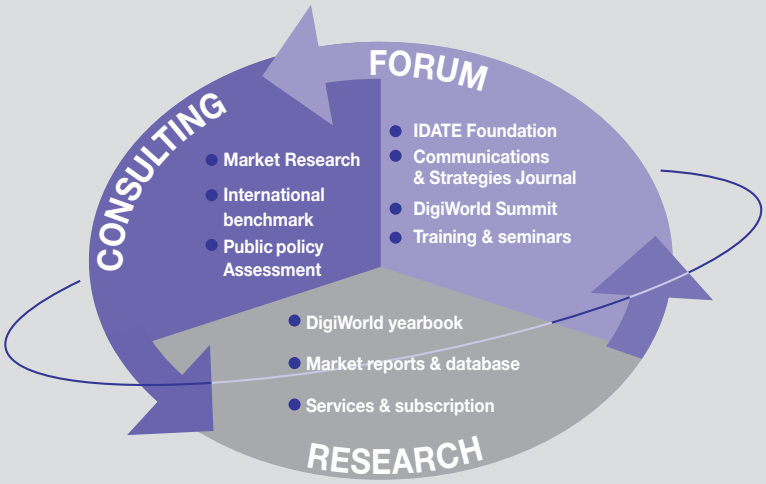

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Contact : Sophie Nigon
tél : +33(0)4 67 14 44 16 – email : s.nigon@idate.org