Future outlooks from 2008's lessons

This time round, the crisis has not been caused by excessive exuberance in the Internet and mobile sectors. DigiWorld markets are nevertheless affected by the financial and economic downturn, albeit not all to the same extent. Applications and services based on recurring revenue seem to be faring better than hardware markets and services that depend directly on advertising expenditures except for the top Internet players preserved by the sector's dynamics. Added to the crisis are cyclical effects in some segments such as Europe's telecom services market which, despite maintaining healthy margins, is on the lookout for new growth outlets.

The DigiWorld will emerge from this recession considerably altered. Mergers have largely been frozen for now, yet technical innovation, the development of new services, the search for new business models and radical changes in user behaviour patterns have apparently not been put on hold.

What better argument for including digital industries in economic stimulus packages?

This 9th edition of the DigiWorld Yearbook provides data on the different markets that make up the digital world, rarely assembled in a single volume, combined with analyses from IDATE's experts and an examination of the major events of the year gone by.

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DigiWorld Yearbook 2009

The digital world's challenges

- telecom
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DigiWorld Programme

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

The DigiWorld Programme was created several years ago with the goal of supporting those initiatives launched by the Institute that seek to make concrete IDATE's core objective of being a European forum for debate and exchange of corporate experience. IDATE has thus been instrumental in enabling international discussions between the industry's key players through its annual DigiWorld programme, supported by its members representing the sector's most prominent companies:

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

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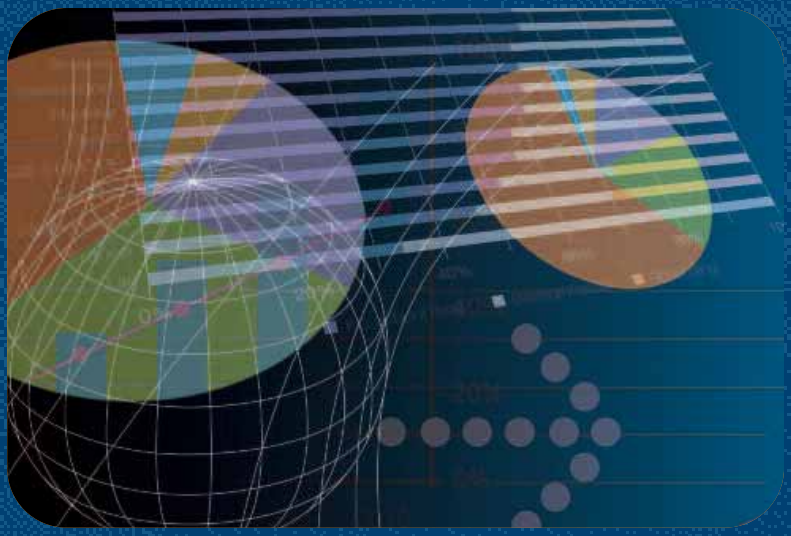

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Foreword

Francis Lorentz, Chairman, IDATE

Every crisis constitutes both a threat and an opportunity. The threat this time around is one of the most severe that we have seen since the Second World War. But it also opens up the possibility of reshuffling the deck and inventing new growth models.

The digital world seems rather well prepared to weather the storm ahead, even if it cannot escape certain consequences of this situation that is weighing as much on consumer purchasing power as on business financing and growth. For several months now, we have been seeing a growing number of bad signs in the digital world: the global mobile phone market, which has been one of the most dynamic markets up until now, has taken a downwards turn; ad-funded models are threatened by advertisers' tightened budgets; investors are turning away from start-ups and concentrating instead on businesses that are already profitable.

This crisis could be a long one. It will lead to adjustments and possibly upheavals which, in addition to better control over companies from the financial sector, could give rise to new balances between the desire for short-term financial or budgetary gains and the need for long-term investments, between free market and regulation, between individualism and solidarity. The technologies, services and businesses of the digital world will likely be among the prime beneficiaries of the restructuring that is getting underway, and of the recovery when it comes.

The healthy momentum of Web 2.0 is proof of technologies' capacity to spur economic and social change. Social networking, mass individualisation, the self- and interactive expression of the blogosphere, collective creativity… all are having a profound influence on behaviour, consumption habits, working habits and business models. The role that the Internet played in the presidential election in the US and the success of Barack Obama provided a dazzling illustration of the changes at work.

These changes will only get bigger and faster, spurred by a major technological leap forward, following through on those that brought us big computers, mini-computers, PCs and Internet-ready PCs. This new cycle will pervade the entire digital universe and combine mobile access to the Net with the exponential increase in the power and efficiency of computing tools via cloud computing.

Thanks to the performance delivered by 3G, 3.5G and soon 4G, the mobile Internet opens up an unlimited arena of new uses that incorporate images, location-based applications and social networking. The mobile phone is becoming a multimedia device that's cheaper, faster and easier to use than a micro-computer, and that you can carry it around in your pocket. It offers billions of users around the globe interactive access to a stunning array of information, services and connections.

At the same time, cloud computing, which Google, Amazon and others have put into place, makes it possible to harness the processing and storage capabilities of innumerable computers and their peripherals on a planetary scale. Combined with the development of search tools and online applications, what is taking shape is an extreme concentration of storage, data and knowledge exploitation capabilities, ushering us into the petabyte age. As foreshadowed by the recent project launched by the NSF, interconnecting 16,000 computers to simulate the human brain, this new stage leads to an astonishingly more effective use of the global informational capital and to the development of radically new tools and methods for mastering the complexity. The Internet of things, or M2M, will no doubt constitute an additional element in this new stage of the game, even if standardisa-

tion issues and consumer reluctance could hamper its development in some areas.

One of the major features of this new cycle is that it is consumer driven: consumer traffic on the Web exceeded business traffic in 2008 and predictions are that, by 2010, individual users will account for 70% of the digital universe.

This growing dependence on consumers does create an added vulnerability, but it is also a major asset – and this for at least three reasons. First, because the global market for first-time equipment is far from saturated, with emerging markets still constituting huge growth pools. Second, in the more mature markets, having access to communications and the services delivered by the Web is now perceived as a priority. Proof of this can be found in the lack of elasticity with respect to income: in France, for instance, the population as a whole spends an average 8% of their income on digital products and services, while those who earn under €15,000 spend 17%. Last but not least, digital world consumers are becoming producers more and more – making active and independent contributions to the ebb and flow, to the Internet's dynamic and to the exponential growth of interacting streams. This is particularly true of "digital natives", those generations who have grown up with the Internet as a natural way of accessing knowledge, a preferred means of socialising and an unparalleled playground. Images are at the heart of everything they do, thanks to improved definition and the ability to access these images from any device, whether mobile and not. These consumer-producers of content are highly demanding and highly creative, continually dreaming up new applications and contributing to the ongoing stream of new ideas, services and business models. Even if it cannot all be monetised, this momentum is nevertheless contributing to the roughly 60% annual increase in traffic on these networks.

The new cycle of information and communication services and technologies clearly represents a huge surge of value creation and growth. Of course, we have to hope that the credit crunch, the paralysis of the stock markets and the preference for liquidity do not impede the ability to capitalise on this momentum. Infrastructure and innovation are particularly vulnerable in the current financial juncture.

The capacity of communication networks needs to keep up with the exponential rise in consumption and traffic. The growing ubiquity of high-definition images, and of 3D ones down the road, makes ultra-fast broadband a necessity. This calls for huge investments, which could go as high as 300 billion EUR for Europe as a whole.

In the current climate, the ability to earn a return on this investment could seem meagre, too far off or too risky for the companies and the investors struggling to raise capital. There is no guarantee that competition, which proved an extremely efficient engine for putting our country among the leading ADSL populations, will be enough to create the needed momentum.

There has been a singular increase in the responsibilities put on European, national and local regulators and public authorities. In France, the directions taken by telecom regulator ARCEP and the measures contained in the Law on modernising the economy are steps in the right direction. But will they be enough? Will their implementation be in sync with the tightened belts and resources that the situation has forced upon us? Should communication networks not be among the top priorities in economic stimulus measures, at least on par with traditional infrastructure?

The frozen financial markets, along with investors' lack of resources and their reticence, are also threatening the immense pool of innovation contained in the digital universe. While these innovations are often

technological in nature, they can also concern marketing, distribution modes or business models. They know no frontiers and the best among them can find a market immediately, or create new behaviour patterns on a global scale. Their promoters are driven by creativity and the desire to innovate: both precious commodities in a world of doubt. They have become more numerous and some have matured from the lessons learned by the burst of the dotcom bubble. This very positive evolution is due, in part, to the measures taken in France and Europe over the past 10 to 15 years, working to provide financing and support. It has also been helped by major corporations, equipment manufacturers, content providers and operators which became aware of the common interest that lay in developing ecosystems that could enhance and stimulate their own capacity to innovate.

These key players in the digital dynamic, these creators of collective wealth could be among the victims of a crisis that discourages risk-taking. Of course it is up to them to rise to the occasion, to overcome the increased but legitimate demands of return on investment and customer satisfaction. But it is up to public authorities to ensure that, more than ever, the fiscal, financial and regulatory environment provides support for those who have the courage to innovate and boldly go.

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The Internet and the digital arena that it encompasses are at the heart of the new world order now taking shape. It enables the exponential growth of information accessible to everyone, anywhere, anytime. And now more than ever before the challenge is to transform this informational growth into economic growth and an improved standard of living.

The technological cycle we have entered into, of the mobile Internet and cloud computing, offers us an opportunity. The crisis could, paradoxically, accelerate the changes at work, spur the use of new generations of tools and applications, and stimulate the emergence of new behaviour patterns and business models. Facebook, Meetic, Deezer, ventesprivées.com and Wikipedia all provide a partial response to the individual and collective expectations that have been exacerbated by the economic woes and fears about the future. What we call the digital economy cannot replace the traditional economy, any more than the virtual world can replace the real world. But it is upsetting existing balances, opening up new frontiers and inviting initiative.

The crisis can only drive us to speed up our conquest and occupation of these new spaces.

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Introduction

When preparing this introduction in the past, picking out the most outstanding events of the year gone by was always self-evident.

Such is not the case this time round. The crisis that we mentioned in last year's report as one of the looming trends to watch out for has been at the very front of everyone's mind – both inside and outside the sectors that make up the digital economy – at least since the start of the last quarter of 2008. Before examining its effects – confirmed or expected – we should first mention some of the other major events that marked this past year.

Among them are the failure of a long-awaited takeover bid, and the affirmation of a successful product launch. We shall conclude this introduction by underscoring the growing interest in gaining a better understanding of new innovation models – especially now as we look for the light at the end of the tunnel.

Failed takeover bid

Last year we noted that behind the popularity of social networking and sites built around user-generated content, both of which are driving a lasting shift in consumers' behaviour patterns – and the solid business models established by leading Internet companies such as Google and Amazon, lies the industrial structure of the Web. It is still a fragile one. This is due in part to the trouble that Microsoft has had in becoming one of the top Internet players, despite all of Bill Gates' efforts over the years. The company's bid for Yahoo! in 2008 was by no means a surprise – but the unflagging opposition to the deal by Yahoo's founder not only put an end to the deal but forced him to resign, amidst complaints from certain shareholders. It should be said that the 47 billion dollars that Microsoft offered to pay then now seem like a godsend when seeing how Yahoo!'s share price has fared since then, and the disparate trajectories of

Yahoo! and Google stock over the course of 2008. It is, beyond that, the uncertainties surrounding future directions that are a greater cause for concern than financial performance, per se. After all, Facebook still has not managed to balance its books, despite the still spectacular expansion of its base of registered users. Nor has Twitter, the microblogging platform that acquired more than four million new members in 2008, and which recently managed to persuade venture capitalists that it was worthy of a 35 million USD investment.

In rebuffing Microsoft, Yahoo! was banking on still reaping the benefits of the agreement it had with Google to kick-start the revenue stream from its search engine. Yet this path too had to be abandoned, impeded as it was by too many competition and implementation issues. If the failure of this takeover bid stands out as noteworthy, it is also because it leaves open the possibility of future moves by Microsoft. We should remember that Bill Gates withdrew from his last remaining responsibilities at Microsoft in 2008 without having managed to make his company the most powerful Internet property. It seems likely that, at least until the next attempt, the failed takeover of Yahoo! will force the Redmond giant to consider more strategic directions for its online operations, and the opportunity now is to step up new targets or to increase its focus on certain areas of its business. One example is its heretofore prudent strategy for providing online access to its software suites, which could become more bold in the coming months. Nor can Microsoft continue to overlook the prospects surrounding Software as a Service (SaaS) models and cloud computing, given the ongoing growth of Salesforce.com and the ambitions laid out by Google Apps. Another strategic option lies in the mobile market which is expected to become the channel of choice for accessing the Net for a sizeable portion of users within the next few years. This will mean a concerted effort to improve Windows Mobile which was rolled out more slowly and made much less progress than its direct rivals did in 2008. Above all, the company may also take a direct cue from Apple and focus on working with developers to roll out a broad selection of services to boost the appeal of smartphones operating on Microsoft technology.

Success story confirmed: from the iPhone to the App Store

If Microsoft was unable to unseat Google on the search engine front in particular or, more broadly, in the area of online advertising, it has also been forced to turn its attention, once again, to the developments taking place over at Apple.

Although the release of the iPhone was one of the outstanding events of 2007, it was really in 2008 that Apple consolidated its entry into the mobile market with the launch of the 3G version of its handset in early summer. The company sold 13.7 million iPhones in 6 months – well exceeding the initial target of 10 million, and not so far a cry from the 22.7 million iPods sold in 2008 as well.

The innovation of the iPhone lies not in its design alone, nor in the quality of the touchscreen interface and the level of hardware-software integration, but also in the successful model that Apple is building with its App Store. Launched in mid-year, this online store has taken advantage of traffic on the iTunes store to build up an offering of 15,000 applications and generate some 500 million downloads in a mere six months.

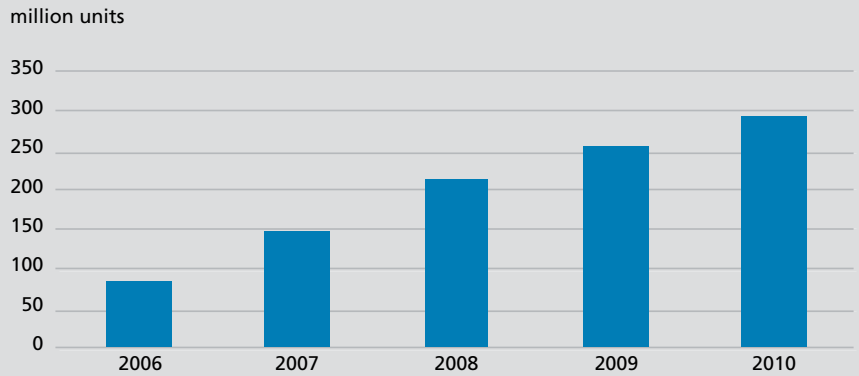
The success of the iPhone has expanded what was once the Blackberry's niche market and given the smartphone segment market a real boost – and thus helped lend a certain credibility to a hopeful outlook for the mobile Internet that we spoke of last year.

AT&T reports that its 4.3 million subscribers who opted for an iPhone in the second half of last year generate per-minute revenue that is, on average, 1.6 times higher than its other customers. The telco is also reporting a 51.2% increase in its data revenue, which currently accounts for 26.6% of the income generated by its cellular operations. Of course, this level of performance was also enabled by the exclusivity deal that AT&T was able to negotiate with Apple which allowed the carrier to attract customers who already generated high ARPU, but had been subscribing to a rival telco.

Smartphones account for 15% of handset sales in terms of volume and a naturally higher percentage in terms of value, and are in a position to spur a significant shift in mobile handset supplier rankings. These devices embody a range of market issues, starting with the organisation of the value chain which depends to a large extent on just how open the market leaders are willing to make their OS and their app stores. The chief alternative to operating systems confined to the devices manufactured by their designers (RIM, Apple), and until the introduction of Windows Mobile was Symbian, but its market share plummeted and the partners withdrew. Nokia's response to the disintegration of the partnerships behind the Symbian OS was to take full control of Symbian in 2008 and endow the operating system with the status of foundation. This is naturally one option, namely adopting an open source model, and Nokia is hoping to rival Google's Android platform. Announced back in 2007, Android was actually launched in autumn 2008 by T-Mobile USA, along with the first compatible handset (HTC), and has met with more muted success than did the iPhone. Other Android-based handsets from other manufacturers are due to come on the market this year. Operators, meanwhile, continue to take an interest in the features of an independent and open Linux-based platform, LiMo.

The interest stirred up by Apple's App Store also revealed that a closed OS model could go hand in hand with an open, albeit tightly controlled, initiative that makes use of developers' expertise, within the more restricted confines of an applications download centre. It remains to be seen whether, aside from Apple, Google and Nokia, others have the power to attract developers and offer them a viable business plan. Operators

Worldwide shipments of smartphones



Source IDATE

are naturally keeping a close eye on these competing developments, and cannot overlook the ability that products like the iPhone have to conquer new customers and to generate traffic that allows them to sign agreements designed to maintain ARPU, at a time when income derived from voice calls and text messaging is shrinking. They have not, however, abandoned all their plans to have a direct stake in mobile Internet services, and even to structure their customer and developer ecosystems. Having been accused in the past of wanting to keep their customers inside a walled garden, they now view this as a legitimate position – drawing on their combined areas of strength to offer advanced, interoperable services, alongside solutions proper to their own platforms, namely their app stores or communication applications being developed on social networks. They know that they need to protect themselves against the effects of crumbling voice revenue (and not only call termination revenue) by rolling out high-volume offers that combine voice and data. Nor have they ruled out the possibility of creating their own applications stores, still working to maintain some control over their customers. A further possibility is to make a joint power play with telcos to offer solutions that would ensure the interoperability of applications between the different app stores and social networks.

Alongside the success of the iPhone and other smartphones, 2008 also saw the emergence of netbooks in the consumer PC fray which could also have an impact on the make-up of the OS market increasing the presence of Linux on ordinary PCs. This new generation of laptops also seems to be well on its way to changing the computer market, and possibly spilling over into the smartphone segment. In the meantime, they helped maintain data traffic on operators' cellular networks, and enhance operators' 3G+ offers.

LTE standard appears poised to dominate the mobile Internet

Still on the subject of the steady emergence of the mobile Internet, it is worth mentioning the 19.6 billion USD spent at auction in the United States to acquire spectrum in the 700 MHz frequency band freed up by the migration to digital terrestrial broadcasting. To be the prime beneficiary of these auctions, Verizon Wireless was forced to accept the principle of open spectrum by agreeing to open up its handsets to outside applications (as is already the rule in Europe) and, under terms that have not yet been clearly defined, to host virtual operators. With its acquisition of Alltel, Verizon Wireless now has more than 80 million mobile customers, taking over top spot from AT&T (75 million). Benefitting from Sprint's excesses in its endeavour to integrate Nextel, and the launch of WiMAX, those two carriers combined account for more than 60% of cellular subscribers in the US.

In addition to the size of the American market's leading players, we should also mention the new configuration that will dominate the rollout of fourth-generation mobile networks. Unlike with previous generations, 2008 confirmed that the top operators are likely to agree on a common standard, namely LTE (Long Term Evolution) which will be the first generation of IP-based cellular technology. It is likely that mobile WiMAX, whose technical properties are relatively close to LTE, will be relegated to the role of challenger. Somewhat paradoxically, it is Verizon, the leading proponent of CDMA EV-DO, who will be rolling out its LTE network in at least 25 states starting in 2010, with support from Ericsson and Alcatel Lucent while, in Europe, operators are expected to continue to upgrade their 3G-HSDPA (HSPA+) networks.

European players can take heart by remembering that the initial roadmap announced by suppliers for the deployment of a new generation of equipment is often optimistic, and fails to take into account the availabili-

ty of an affordable and attractive selection of compatible handsets. This argument should not, however, be used by European countries as justification for their fragmented stance on spectrum management. The lack of harmonisation is creating wasted capacity, making networks more costly and devices unnecessarily complex. One major priority is to see the different countries confirm their allocation of the 72MHz of the UHF sub-band from the digital dividend to mobile broadband.

To round off this quick review of the situation in the mobile sector, let us remember that events are not confined to either side of the Atlantic alone. China has also begun to reorganise its sector, at the outcome of which China Mobile, the world's largest mobile operator in terms of users and capitalisation, will be going head to head with two other fixed-mobile operators, China Telecom and China Unicom. Furthermore, late in the year, the Chinese government also established the terms for launching 3G by reserving a standard for each group. China Mobile, which serves 75% of users, will not be required to deploy the home-grown TD-SCDMA standard, which benefits neither from hindsight in terms of rollouts, nor a line of handsets based on standards from the West (W-CDMA and CDMA EV-DO) which its two rivals will be able to market. The situation may well result in an accelerated migration to LTE, while maintaining a Chinese standard as well.

As with the announced merger of KTF and KT in South Korea, the reorganisation of the Chinese market has confirmed, if ever it still needed to be said, that there would be no major operators in future that are not suppliers of both fixed and mobile access. The allocation of spectrum and mergers and acquisitions in the coming years will further confirm this underlying trend. This is of course a means of satisfying customer demands, but also the result of the increasing overlaps of fixed and mobile infrastructures, and of the applications and services they support.

And what of the crisis?

Compared to the crisis that hit at the start of the decade, which was caused by the burst of the tech and telecom stock bubble, DigiWorld sectors were in a different position when the trouble started in the last quarter of 2008. We need to establish a link between how the financial sphere works and the technical means provided by ICT technologies.

In any event, no-one will be spared. The first sign of the downturn was gleaned in the weight of advertising spending, which has dropped significantly in TV and in that of Internet companies' revenue. Television networks, whose advertising revenue has increased only slightly, have been hit harder, especially in certain markets where they are facing competition from new digital terrestrial channels. For Web services, the recession has meant a lower increase in growth for their ad revenue – although they could continue to post double-digit growth in some markets. Albeit to a lesser degree, such is also the case for Google, even if it continues to benefit from a business model that is much more robust than the Internet's other top-tier players, thanks to the central role it plays in the search engine market of sponsored links. The question for Google will be more what to do with the cash that will continue to come in or, more specifically: how to lessen its dependence on revenue from sponsored links. E-commerce sites, meanwhile, are facing a more ambivalent situation. On the one hand, they are being affected by the drop in consumer spending, especially in those sectors specialised in travel and consumer electronics products. On the other hand, they can reasonably hope to increase their market share as shoppers are more intent than ever on finding the lowest prices.

Despite the current slump, the state of Internet companies' stock is, on the whole, a

far cry from what it was after the bubble burst back in 2001, and the existing top companies do appear capable to weather the storm, provided it does not last much beyond this year. 2.0 start-ups, on the other hand, will likely take a hit. Among the trends to keep an eye on is the growing sensitivity of a portion of Internet users to the real or potential violations of the privacy of personal data – as shown by the recent outcry when Facebook attempted to change its terms of service.

Also worth underscoring are the woes being suffered by newspapers with their plunging ad revenue while their Websites, despite being popular, are proving unable to offset the losses of their print editions. We shall no doubt see several more papers fold, or go fully online, in the months to come.

In the consumer electronics market we have seen a decline in flat screen TV sales since Q2 2008, despite the spread of HDTV and despite them being a prime contributor to the CE market's growth these past several years. The PC market has also been hit by the downturn, although laptops and netbooks have helped lessen the blow to some extent, at least in terms of volume. These shrinking sales are going hand in hand with a growing crisis in the components market, and especially in the memory segment.

For many, the clearest indicator of the changing climate in the ICT sector was the drop in mobile handset sales in Q4 2008. In Western markets, the relative maturity of the mobile market means that the rate of equipment replacement is critical to sustaining the momentum – a momentum that had been revitalised by smartphones, before the growth rate took a tumble in the last quarter of the year. To consumers' tightened budgets we can add the prudence of operators which are now seeking to limit their handset subsidies. The growth momentum is expected to slow as well in emerging economies, which have been the prime contributors to the growth of the user base over the last few years. As a result, the handset market is expected to contract this year for the first time since 2001, and probably more dramatically.

The atmosphere in the telecom services market is a little more serene. Financial markets had no trouble regarding most of the top telcos as safe investments and, although share prices have slipped, they have fared better than index averages since the Lehman Brothers debacle. With three or four exceptions, the major carriers that emerged from the Internet and mobile bubble of 2001-2002 with overvalued assets on their books and occasionally worrying debt levels have seen their financial situation steadily improve over the past several quarters. For most, their situation at the end of 2008 was in line with their promises. Analysts believe that their income, which is based chiefly on subscriptions, is much less threatened by the current recession than other consumer sectors, and offers a clearer outlook for 2009. They are also a reminder of the conditions under which NTT DoCoMo managed to weather the crisis of the past decade, and how Telecom Argentina was able to overcome the brutal recession suffered by Argentina in 2001-2002.

Other shifts in the market can be glimpsed by looking at operators' results from the last quarter of 2008: an increasingly swift decline in the base of fixed telephone lines due to the growing number of households equipped with only mobile gear, to the housing crisis and to the decrease in business spending – all of which have led to a greater tendency to opt for capped flat rate offers, and to a resurgence of prepaid cards at the expense of more costly subscriptions. These trends may be more pronounced in the most affected markets, such as Spain and the UK, but they do not seem likely to have too much of an impact on the leading operators' bottom line. The negative effects of the downturn on margins will probably be offset by the raft of precautionary measures that were taken,

namely lowering operating costs and scaling back investments. The probable outcome is that, around the world, operators' investments will stagnate and even decline in some cases, with cost-cutting measures which could include a more systematic exploration of possibilities for sharing expenditures with rival operators, such as on towers, civil engineering and optical fibre. This new hit to the hardware market will have a painful effect on the network equipment industry, some of whose leaders are already suffering badly – as illustrated by Nortel's bankruptcy filing early this year. So far, only Chinese manufacturers have managed to uphold their healthy growth levels.

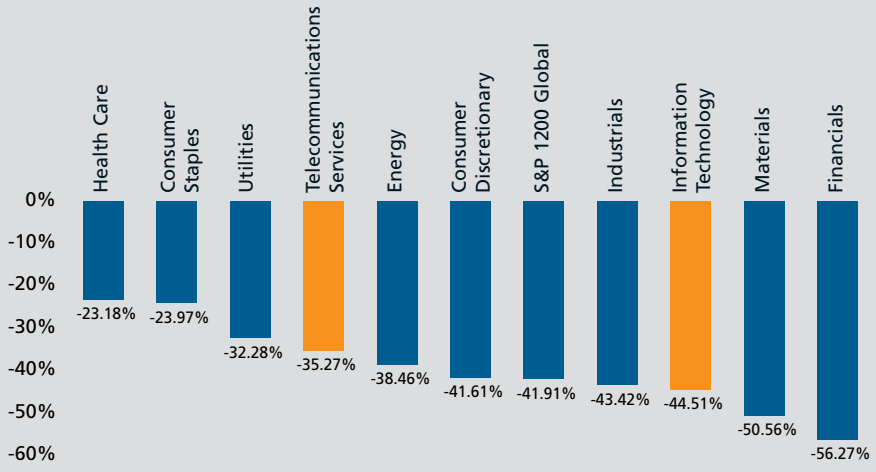
For operators, scaled-back investments or postponing added spending during the year will probably have no major impact on their business. It could, however, affect the momentum of ultra-fast fixed and mobile network rollouts, both underway and planned. If cutbacks continue much beyond 2009, it could mean more dire consequences for traffic flow conditions and, ultimately, affect the sector's ability to create growth outlets in developed markets, even if capex is not the sole enabler of innovation.

The main question facing these markets is this: can we continue to generate high margins much longer if the telecom services sector is incapable of getting itself back on a growth path? In Western Europe in 2008, telecom services generated revenue that was only just equal to 2007, with some countries such as Germany and the Netherlands reporting a sizeable decrease. It was not due to the current crisis but rather to the point in the market cycle, namely a relatively mature mobile market and a levelling off of broadband equipment levels. In the United States, the percentage of turnover invested in networks has increased in recent years, at a time when the sector was still growing at a healthy pace thanks to a significant rise in revenue from mobile operations. As penetration has reached a given level, however, growth rates have begun to decline in the American market, and operators are likely to scale back their investments.

Could the telecom industry be re-nationalised?

It remains to be seen what impact the roughly seven billion dollars earmarked for networks in the Obama administration's recent

Evolution of stock prices by sector worldwide in 2008



Base : index S&P 1200 - between dec. 31th 2007 & dec. 31th 2008

Source S&P 1200

stimulus package will have. It is possible that other countries will also include funds for high-speed infrastructure in their recovery plans – something we perceive as just as legitimate as earmarking monies for upgrading roadways. The key is to define the correct measures to be taken to prevent the injection of cash from seeming like a simple windfall, and neglecting to stimulate the central role given to private initiative. Among such measures could be those that help speed up the deployment of high-speed infrastructure in underserved areas, or which encourage risk-taking in the rollout of innovative systems. Injecting public monies into networks may also revive debates in the coming months over the sector's structure in the medium and long term. In the United States, it will be interesting to see what open access conditions will be applied to the fixed and mobile high-speed infrastructure that has been allocated by federal subsidies. It is still not certain whether the newly-elected Democrats will pass the strict net neutrality legislation that they had been pushing for in recent times. After all, even Google which had been leading the charge was criticized last year for installing servers with ISPs to improve the quality of access to its services. And therein lies the full ambiguity of the notion of non-discriminatory access to the Internet. In August 2008, at the outcome of a long inquest, the FCC ruled that the country's leading cable company, Comcast, did not have the right to impede the use of the popular P2P application, BitTorrent, implying that operators needed to find other solutions to remedy any traffic congestion problems. We shall find out this year whether Comcast manages to have this ruling overturned on appeal.

In Europe, meanwhile, the market is being shaped by initiatives by local authorities wanting to equip their vicinity with optical access networks right away. We are also waiting to see whether revisions to the EU's regulatory framework – which appeared to have been agreed upon under the French presidency, once the governments reached a compromise – will actually be ratified when the proposal goes before the European Parliament. Here again, it seems likely that the more extreme views, in favour of a sort of widespread application of the remedy of structural separation between the network and services, will not be passed at this time. The vast majority of operators are against it and, as we have seen, they are not in the same boat financially as the banks that governments are prepared to save through nationalisation. Regulators will need to devote the greatest possible efforts during the recession to achieve the right balance between defending consumers' interests on a day-to-day basis, while working to support innovation and investment.

Europe would be wrong to see in the Obama administration's plan only the 7.2 billion USD in subsidies awarded to the Departments of Commerce and Agriculture. In the medium term, they are expecting to generate very positive repercussions for ICT research and innovation from the significant fraction of the 35 billion USD earmarked for healthcare and the 100 billion USD that will be spent on education. It is naturally in this vein that we need to look at the role that ICT can have on sustainable development.

As it will in all sectors, the financial and economic crisis will act to differentiate telcos, revealing inequalities in their ability to generate cash and to manage debt. The state of the national economies where they operate, the exchange rate of their base currency and the competition landscape in their markets will all affect their performance. Despite a general stagnation or decrease in investments, there will be those that maintain a high level of spending to be able to emerge from the crisis with a competitive edge. We should not expect, however, to see many mergers or acquisitions during the recession. Financial markets are not willing at this point to support telcos wanting to take risks – something

we already saw when France Telecom attempted to take control of Telia-Sonera in the first half of 2008, before the full force of the financial crisis had become readily apparent. A more recent example was Telenor's ability to get a sweeter deal in its takeover of Unitech Wireless, which holds mobile licences in India and other emerging markets.

The sector is nevertheless expected to continue to consolidate, on a minor level starting with stakes in national alternative operators in Europe which have been unable to acquire the market share they needed to achieve balanced operations. Later, in a landscape no doubt altered by the downturn, the question of pan-European consolidation will arise once again – in light of the growing gap between the level of concentration found in the American market and the some 100 operators still doing business in the European Union. Of course, Europe by no means constitutes the same integrated economy as the United States, but the size of the investments that need to be made in the convergence of ultra high-speed fixed and mobile networks, and the clout needed to negotiate with global market leaders such as Google, make this a plausible outcome in the medium term. This is especially true given the size of the carriers currently being formed in China, India and the Middle East which will experience setbacks in 2009 but whose rebound will be particularly strong. Steeled by a low debt ratio, their international ambitions will likely be even more lively once the recession is over.

Open innovation and emerging from the recession

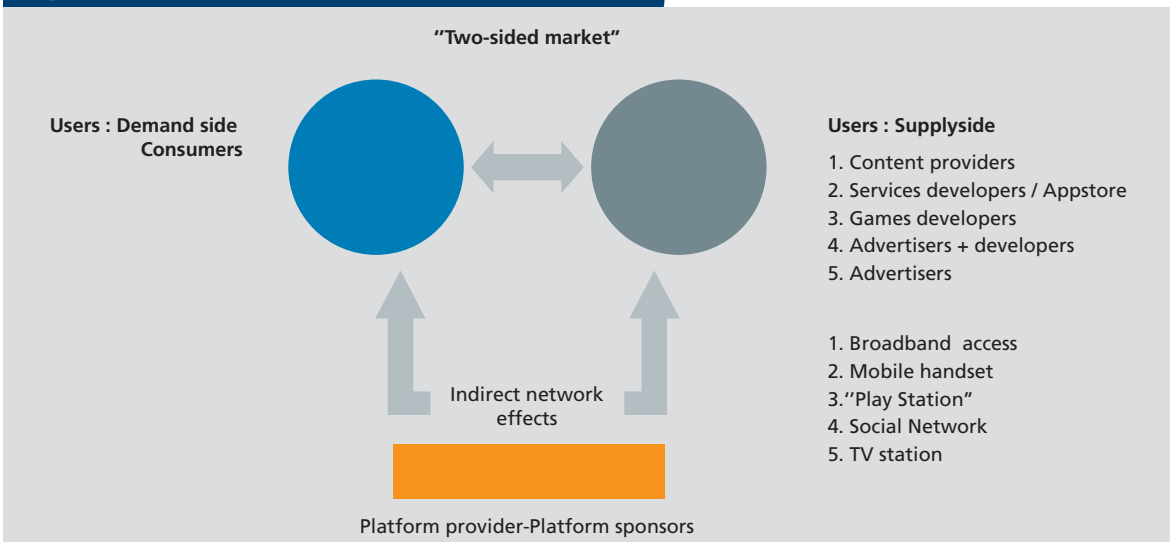
Nobody knows when the crisis will be over. However, it is certain that the DigiWorld will emerge from it profoundly altered. This will include new players and new consumption habits around products and business plans not yet fully imagined.

In this swift and by no means exhaustive industry chronicle, we have spoken several times of the central role that innovation plays in ICT sectors, and of the opposing forces of 'open' and 'closed' models that the actors in the new digital ecosystem have to manage.

Through the notion of 'open innovation', Henry Chesbrough was one of the first to explore the new characteristics of innovation models, which distinguish themselves from traditional models dominated by in-house research and development. Nowadays, the fragmentation of the skills and knowledge needed to get a digital product successfully to market justifies a more porous relationship between a company and its environment. At all stages along the value chain, a platform's promoter is faced with the need to choose between the direct gains it could reap from exploiting only its own developments, and the benefits of more or less partial openness to outside developers, to suppliers of complementary services and to users capable of enhancing the value of its property through a network effect. As touched on earlier, this is as true for the promoters of a mobile OS or an app store as it is for social networks, a telco's access services or a distributor of video services. It is also important to underline the fact that this trend corresponds to a new way of creating value, as gleaned by firms such as Red Hat or IBM which are engaged in open source developments. "Openness" does not mean the end of intellectual property rights. Simply put, patents are no longer managed as competition barriers, but rather as assets that need to be managed properly in an increasingly open market.

Nor does openness guarantee a path to pure and perfect market competition. New competition issues will arise as certain platforms move to the front of the ranks. Analysing these issues will need to acknowledge what economists refer to as two-sided markets. To assess prices or the weight of an applications's platform and consider the possible remedies to the effects of too much market

Open innovation and two-sided markets



Source IDATE

power, what needs to be measured is not only its market share and customer switching costs nor commercial performance with end users, but also its power to differentiate itself and attract developers with its technical features, and the agreements it signs with them.

IDATE believes that the work economists are doing on open innovation applies to the central issues that digital world players need to explore to emerge from the crisis. We have, therefore, selected it as the basis of our policy programme to be undertaken with DigiWorld Programme members. Open innovation will also be the central theme of this year's DigiWorld Summit. Both will provide an opportunity to revisit the analysis contained in this DigiWorld Yearbook.

In the meantime, it only remains for me to wish you a good read and to invite you, as always, to share your comments on the work of our teams of consultants, and to let us know how we can continue to improve this annual report.

[1]in: "Open Innovation: a new paradigm for understanding industrial innovation", Henry Chesbrough; Open Innovation: Researching a new paradigm, Henry Chesbrough , Wim Vanhaverbeke and Joe West, eds., Oxford University Press (2006).

The DigiWorld in the global economy

The DigiWorld's role in the economy

DigiWorld markets totalled 2,740 billion EUR in 2008, 4.8% more than in 2007. After several years of growth above 6%, this decline is due to a structural phenomenon which has been aggravated by the economic downturn.

The structural phenomenon is tied first to the maturity of the new technologies market in developed countries, but also to the current recession brought by the economic problems that both businesses and consumers are facing. ICT markets do demonstrate a certain resilience during times of crisis, however, because of the status these technologies have acquired in our everyday life.

The questions being asked of ICT industry players concern the degree to which they are capable of helping to drive a rebound, not so much through their own performance but more through their efforts to roll out specifically tailored tools and solutions. Herein lie the notions of innovation that have been central to the success of a great many entrepreneurs over the past 30 years, in the areas of computing, the Internet more recently and, more broadly, in the realm of networks and content. We also find the idea of monetising services and applications which are becoming cheaper and cheaper the more they develop. Running parallel to this is a resurgent globalisation, with increasingly vast and ever more competitive markets. These challenges are not new and may involve, at least for awhile, transforming opportunities into obligations.

Below the overall rate of growth

Over the past few years, DigiWorld markets have grown at a lesser or, at best, equal rate to global GDP. The gap widened again in 2008, with the DigiWorld growth rate of 4.8% comparing to roughly 7% for GDP.

DigiWorld markets have not outperformed the economy as a whole since the mid-1990s, at which time they were reporting annual growth rates of between 10% and 15%. The burst of the Internet bubble at the start of the century put a sudden halt to that momentum.

Of course, as has been stated repeatedly since then, the decline in ICT sectors' growth rates does not mean that they have stopped contributing to overall growth. They do and will no doubt continue to help prop up the rest of the economy – providing it with increasingly efficient logistics and management tools, in addition to contributing to the lives of individuals and fulfilling a certain social function.

If spending has come to a halt, equipment and consumption levels have continued to rise at a healthy clip, and even accelerated in some cases. There were 500 million new mobile customers around the globe in 2006, 600 million in 2007 and, according to our estimates, close to 550 million in 2008 (with between 1 and 1.2 billion handsets sold annually during the past three years). Added to which the equipment being bought is increasingly high-end: at the end of 2008, an average one out of every five users in Europe's five main markets was equipped with a 3G handset while, over in Japan and South Korea which pioneered 3G, this figure rises to over four out of five users. The number of broadband connections in the world more than doubled in three years, going from 216 million at the end of 2005 to 415 million at the end of 2008. At the same time, computer equipment levels are rising significantly: 57% of households in the EU-27 were equipped with at least one microcom-

puter at the end of 2007, with rates as high as 90% in certain countries (the Netherlands, Denmark).

Production levels peaking

There was a decline in ICT hardware production volumes in the second half of 2008 with levels hitting their peak or showing signs of a turning tide in countries where production still enjoyed a solid momentum (notably the US), and an accelerated ebb in countries already suffering a downwards slide (the UK). Emblems of growth, mobile phones are caught in this current: orders began to drop in Q4 2008 while operators and resellers began to clear out their stock rooms (there could be as much as a 10% decrease in 2009). In the computer segment, too, the current climate is affecting order books: only China has continued to report increased computer production rates, and the increased pressure on prices could well work in its favour in the coming months.

DigiWorld company stock prices were quick to reflect the shaky economic times, although they have not necessarily been the hardest hit. It is worth noting that certain segments that had been spared in the past did not escape this time round – with cases in point including business software specialists (notably SAP) and network equipment suppliers like Cisco. The top Internet companies whose stock prices had been shooting up, and even reaching record highs for some (Google's stock price is higher than Verizon's), were not spared either. Some stocks have got back on track while others are staying down, waiting for the market to adjust. Meanwhile, the most fragile companies have only been made even more vulnerable by the crisis. The current climate may also mean the precipitated collapse of certain players, and provide an incentive for certain companies to consolidate.

An historical challenge

Last year in these pages we wondered about the chances of achieving a lasting solidity for the DigiWorld, while warning of "the looming prospect of a global recession which will undoubtedly have an impact on the industry". Of course, at the time, we had no idea of the scope of the crisis and still do not know precisely, but we do know that ICT sectors will be affected, and grim signs had already appeared at the end of 2008. The coming year will thus prove an historic challenge for these sectors, needing to prove, in addition to their resilience, their ability to make a broad contribution to economic recovery efforts.

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As in past editions, this first chapter is not divided into sectors, but rather takes a cross-sector, all-encompassing approach to the DigiWorld and its position with respect to the economy as a whole.

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6.5% of global GDP

The DigiWorld's weight in the global economy

What is the DigiWorld?

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

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

Less than 5% growth in 2008

Estimated at 2,739 billion EUR in 2008, DigiWorld markets represented 6.5% of global GDP. Dropping to under 5% in current value, growth is now two points lower than for the global economy. In the main Eurozone countries, the average growth rate for IT markets was only 1.6%, compared to 4% for GDP, including inflation. In the United States, ICT market growth did not exceed 3%, while the economy as a whole grew by more than 5%.

We find comparable if not greater gaps in emerging countries. In China, for instance, the economy continued to progress at a rate over 16% in current value, whereas ICT markets grew by only just over 11.5%.

This situation is nothing new, and we have to go back to before the Internet bubble in 2001 to find ICT market growth rates that exceed those reported by the economy as a whole – in some cases by a sizeable margin. Since then, the gap has varied from year to year but DigiWorld markets have never outperformed GDP.

Sectors that sustain the economy

This does not mean, however, that ICT sectors have stopped being driving forces – quite the contrary:

- because of the increased volumes involved, unit values are down due to high pressure on prices but shipments of computers, mobile handsets, broadband connections, etc. have never been higher than during the past several years;
- very high equipment levels – especially in developed markets – mean that users can access increasingly numerous and ever more advanced services, made even more appealing by being part of bundled flat rate packages;
- the growing ubiquity of ICT products and services which contribute to business operations and make an increasingly concrete contribution to their growth or, at the very least, during times of meagre growth, to their productivity, is having an progressively deeper impact

The question of how to successfully monetise their operations nevertheless remains a central preoccupation for all DigiWorld players.

DigiWorld averages conceal a wide range of realities in the different segments. Sustained by cellular, telecom markets continued to enjoy very strong growth up to the mid-2000s whereas IT, which is more sensitive to the corporate climate, suffered a strong downturn. The situation was then reversed, with IT markets enjoying an upswing while telecom markets took a turn for the worse.

The economic crisis that began in autumn 2008 could bring with it another reversal of fortune. For now, telecom markets appear to be the most resilient.

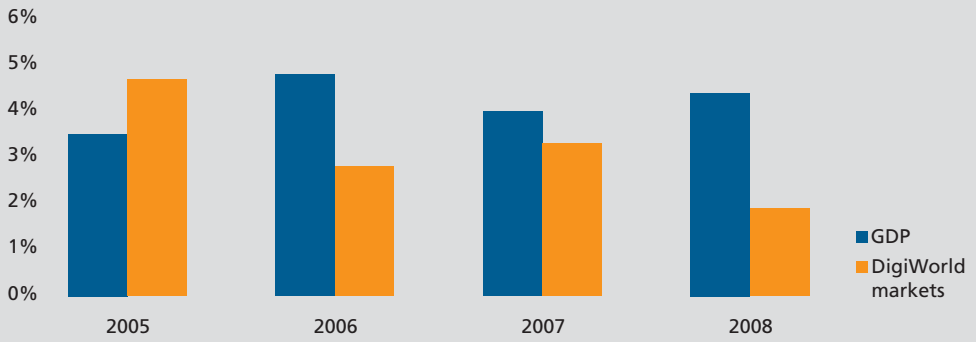
DigiWorld contributions to global GDP

	2005	2006	2007	2008
DigiWorld markets (billion EUR)	2 307	2 455	2 614	2 739
yoy growth	-	6.4%	6.5%	4.8%
World GDP (billion EUR)	34 185	36 850	39 500	42 310
yoy growth	-	7.8%	7.2%	7.1%
DigiWorld as a % of GDP	6.7%	6.7%	6.6%	6.5%

Source IDATE

Europe's DigiWorld markets feeling the pressure...

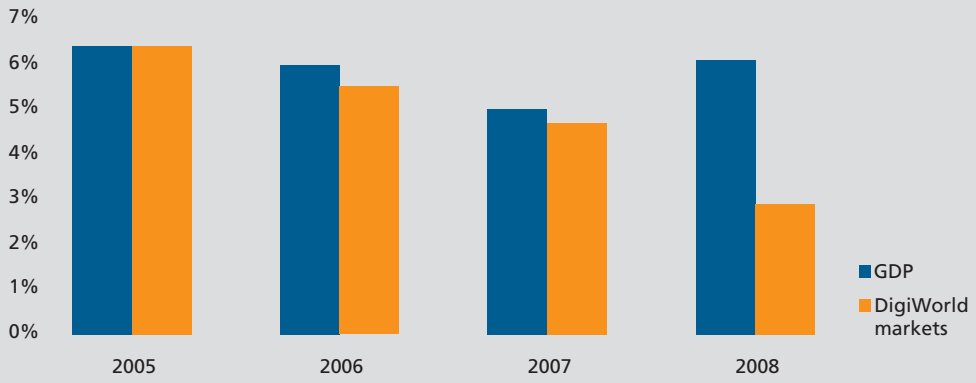
Comparative growth of GDP and DigiWorld markets in the EU-5



Source IDATE

... and in the United States

Comparative growth of GDP and DigiWorld markets in North America



Source IDATE

The calm before the storm?

ICT investments

Spending on ICT has increased by an average of around 7% a year since 2003 in OECD countries, two points below the global average. Of course the momentum in emerging countries has been much more dynamic: growing by more than 17% a year during the same period. Within that group, four markets in particular – which have the collective name of BRIC for Brazil, Russia, India and China – have been reporting an average annual growth rate of more than 20%, and now concentrate 60% of all ICT spending outside of OECD markets, and 13% of spending worldwide. Among the countries where expenditures have increased the most over the past few years are a number of emerging countries in Latin American (Venezuela, Colombia…), Africa and the Middle East (Senegal, Egypt…), Asia (Iran, Pakistan, Indonesia…) and Eastern Europe (Ukraine, Turkey…).

Steady ICT spending levels…

In developed economies, after the slump that followed the burst of the technology, media and telecoms (TMT) bubble, business spending on ICT got gradually back on track. Things have been tending to level off for close to two years in Europe while, over in the United States, the virtually non-stop rise since 2003 came to a sudden halt in 2008. In both cases, the current crisis will postpone the prospect of a rebound to a time unknown.

In spite of this, and in the United States particularly, ICT spending levels are faring better than other productive investments. Non-ICT spending has been declining steadily and relatively dramatically since the start of 2006, whereas ICT spending levels have continued to increase at an annual rate of 8% to 10%.

… threatened by an increasingly grim situation

As a result, despite an increasingly glum situation, the ICT market has weathered the storm fairly well up to now. In the US, for instance, while (non-ICT) productive investments had decreased by close to 20% in terms of volume in a single year by Q3 2008, spending on computer equipment and software was still on an upwards trajectory (+7% since the year before). More specifically, software sales were holding steady as of Q3 2008, while computer sales dropped sharply. In the same vein, semiconductor sales worldwide were still up by 1.6% last September, compared to the year before, spurred by the momentum of the Asian market (+9.2%).

We can nevertheless pinpoint a number of signs of weakness, and the ICT market will not be spared by the increasingly acute economic downturn. After advanced economies were hit by the recession, emerging countries which have proven remarkably resilient up until now are beginning to suffer the effects of the crisis: they are feeling repercussions of the recession in their main export markets, while foreign investors' withdrawal of their funds is putting pressure on their currency. We are thus likely to experience a sizeable decline in spending levels more or less across the board.

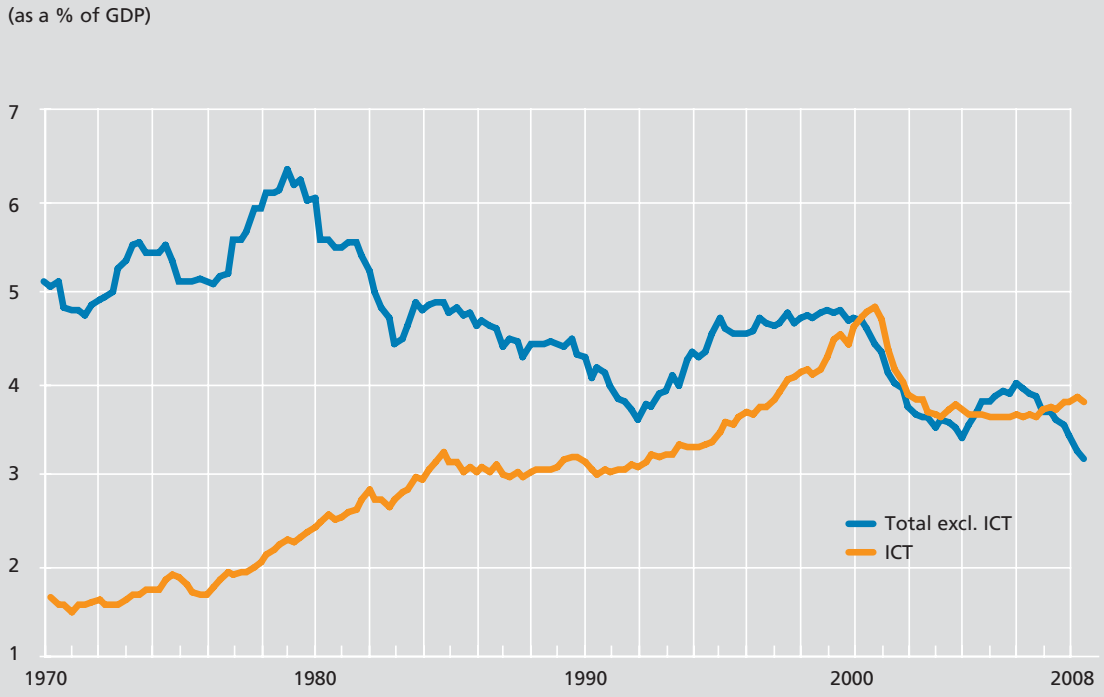
ICT spending in the major countries/zones

(billion USD in current prices)	2003	2004	2005	2006	2007	2008
USA	829	884	937	989	1 032	1 061
EU-15	671	765	801	851	943	1 020
Japan	278	305	310	30	314	351
Total OECD countries	2 025	2 235	2 361	2 495	2 681	2 873
China Mainland	121	150	172	206	254	327
India	23	32	42	47	66	85

Source OCDE

ICT spending in the US back on track

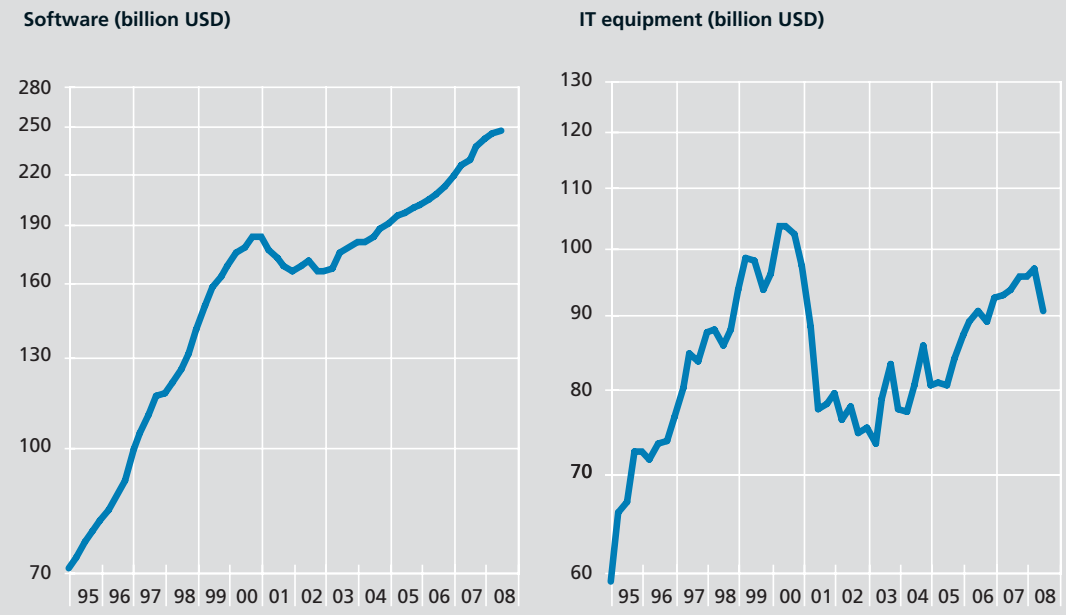
Private sector productive investment levels in the US



Source Coe-Rexecode

Software weathering the storm

American businesses' IT investments



Source Coe-Rexecode

Prelude to the fall?

ICT production

ICT production in all advanced markets at best levelled off in 2008, but most in fact reported a substantial decline. In countries where the momentum had remained strong in previous years, notably the US and Germany, 2008 marked a plateau: in the North American market, the decrease that began in the third quarter of the year has continued on since then, and spread to the few remaining hold-out markets. Production in South Korea and Sweden began to slip during that same period while, over in Japan, the reversal of fortune began in early 2008.

Production stagnant or shrinking in advanced markets

In France, the decline that began in mid-2006 has continued, albeit with some ups and downs and at an increasingly slower rate while, over in the UK, the virtually unabated drop in ICT production levels since 2000 became even more acute starting in mid-2007: production has decreased by 50% in just over eight years (by 10% in the last year alone).

The consequence of these downturns is that the use of production capacities has also dropped. In the United States, the average rate had dropped to 75% by autumn 2008, with a higher level being reported in communication hardware (80%) and a lower one (72%) in the semiconductor segment. If we are far from the 90% rate of production capacity usage reported back in 2000 when the Internet bubble was at its peak, levels are still higher than the record low hit in 2002 when rates dropped to an average 60%.

These overall trends are found in the different manufacturing segments, albeit with some slight variations. In telecommunications hardware, the most significant variation comes from Germany where production levels have been in free fall since the start of 2008, going from an indexed level of close to 130 at the end of 2007 down to 80 in autumn 2008. Japan also stands out for its dramatic decrease in this segment, going from a capacity of 60 to less than 40 in nine months. On the flipside, telecom hardware production has remained solid in the United States, South Korea and Sweden.

China swimming against the tide

Production curves for computers dipped in the third quarter in all countries that had been reporting growth in recent times (Germany, USA and South Korea), no doubt before taking a bigger tumble. In the United States, sales have been at a peak since mid-2008 while average sales prices continue to drop. One of the rare countries to be still reporting an upwards trajectory is China, despite an erratic growth path: since 2007, China has concentrated more than 50% of the world's personal computer production, and an even higher percentage of mobile handset production.

The semiconductor industry has fared better, with global production that is levelling off but which has not yet recorded a significant drop: the decrease in the North American market since autumn 2007, and much more recently in Europe, has been offset, perhaps temporarily, by an upswing in Asia.

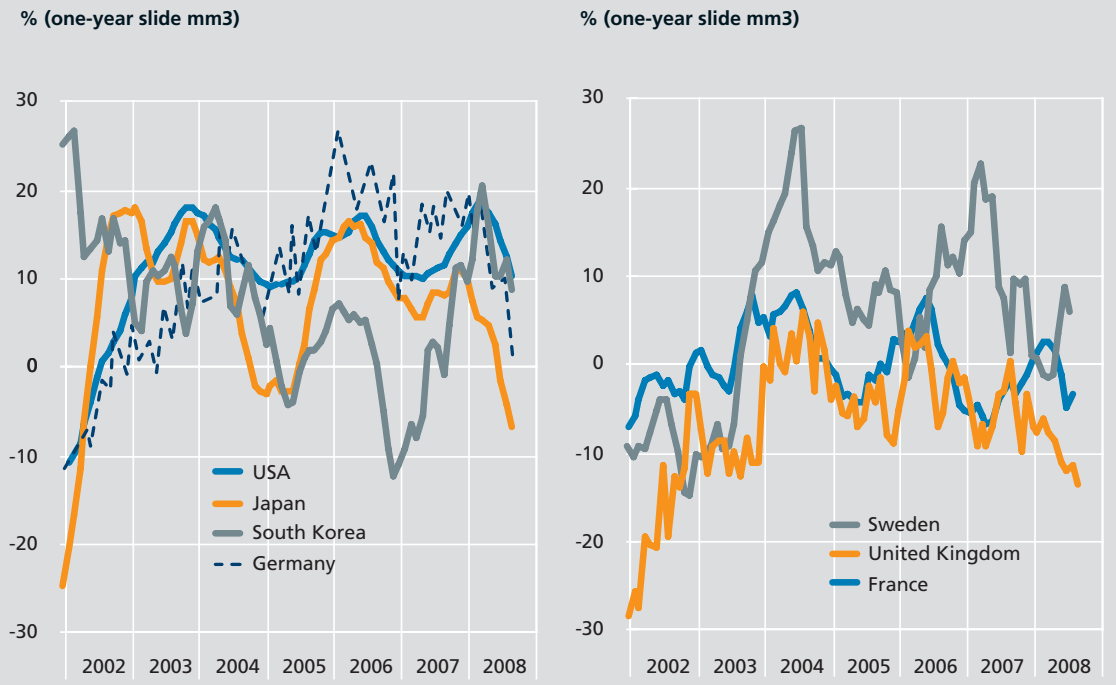
ICT hardware trade balance in the main producing countries

(billion USD)	Exports	Imports	ICT trade surplus/deficit
China mainland	356	255	100
South Korea	97	54	43
Japan	112	76	36
Taiwan	85	50	36
Singapore	108	81	28
Hong Kong	148	154	-6
EU 15	176	263	-87
United States	165	273	-109

Source OCDE

Production has begun to decline in all advanced markets…

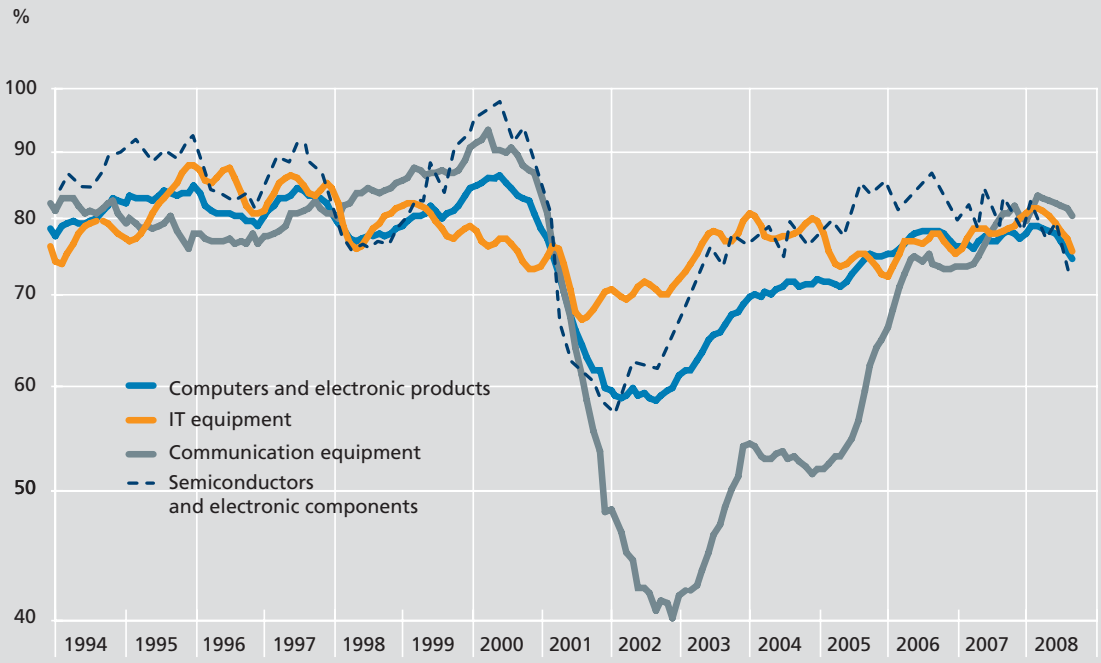
ICT industrial production



Source Coe-Rexecode

… leading to a drop in production capacity utilisation rates

Change in the ICT production capacity utilisation rate in the US



Source Coe-Rexecode

Turbulence everywhere

ICT stock prices

Tech stocks, which had been steadily returning to the pink after taking a tumble when the Internet bubble burst, have been back on a downwards slide since the end of Q3 2007 – a decline that has been picking up speed since autumn 2008.

Record lows for tech stocks

In the United States, the tech stocks listed on NASDAQ have even hit record lows. In the Eurozone in late 2008, TMT stock prices had dropped by around 50% compared to their highest point reached in mid-2007. During more recent times, nonetheless, tech stocks suffered less on average than other sectors, although performances have tended to lead to the same end-result: the base rate of 100 on 1 January 1998 for both the general and TMT indices had dropped to around 80 by November 2008 in Europe while, over in the States, the SP500 and the NASDAQ indices ended just below their original levels at the end of that same period.

After the plunge in autumn 2008, things have seemed to be levelling off, however. After having lost half of its value in three months, and hitting its lowest point since spring 2003 in November 2008 (below 1,400 points), NASDAQ began to climb slightly and levelled off within a range of 10% to 15% (at around 1,500 points on average). Meanwhile the Euro Stoxx TMI index, whose fall was almost as spectacular – going from over 290 at the start of September 2008 to 180 by the end of the month – has since gone through a series of slight rises and falls.

New economy stocks also shaken

What does appear to be a new phenomenon is that many of the recent market darlings, notably hot Internet properties whose stock prices had been skyrocketing over the past few years, have been dragged down with the more traditional stocks, in some cases even more dramatically. Stocks such as Yahoo! in particular, along with Amazon and Google, have had severe warnings – albeit with two nuances: first, the decline which picked up steam in autumn 2008 had already begun for most of them in the spring and was not linked solely to the economic crisis and, second, some of the share prices, including some of the titans, increased significantly at the start of 2009.

As for more traditional stocks, market reactions have varied depending on the companies' positions. In the United States, Sprint Nextel, whose stock value had already been cut in half between May 2007 and May 2008, saw its share price shrink by a further 80% in the autumn only to rebound to a third of its previous value. In the computer hardware segment, Dell was hit harder than its competitors, with its share price dropping by 60% to 70% between the end of August and the end of November 2008, and continuing to lose ground after enjoying a slight uptick. In the telecommunications hardware segment, meanwhile, Motorola stock is performing in a similarly grim way.

Over in Europe, Alcatel Lucent was harder hit than Ericsson or Nokia which are nevertheless suffering the effects of a struggling handset market. For the major telcos, the adjustments that began in late 2007/early 2008 helped cushion the blow in the autumn to some degree.

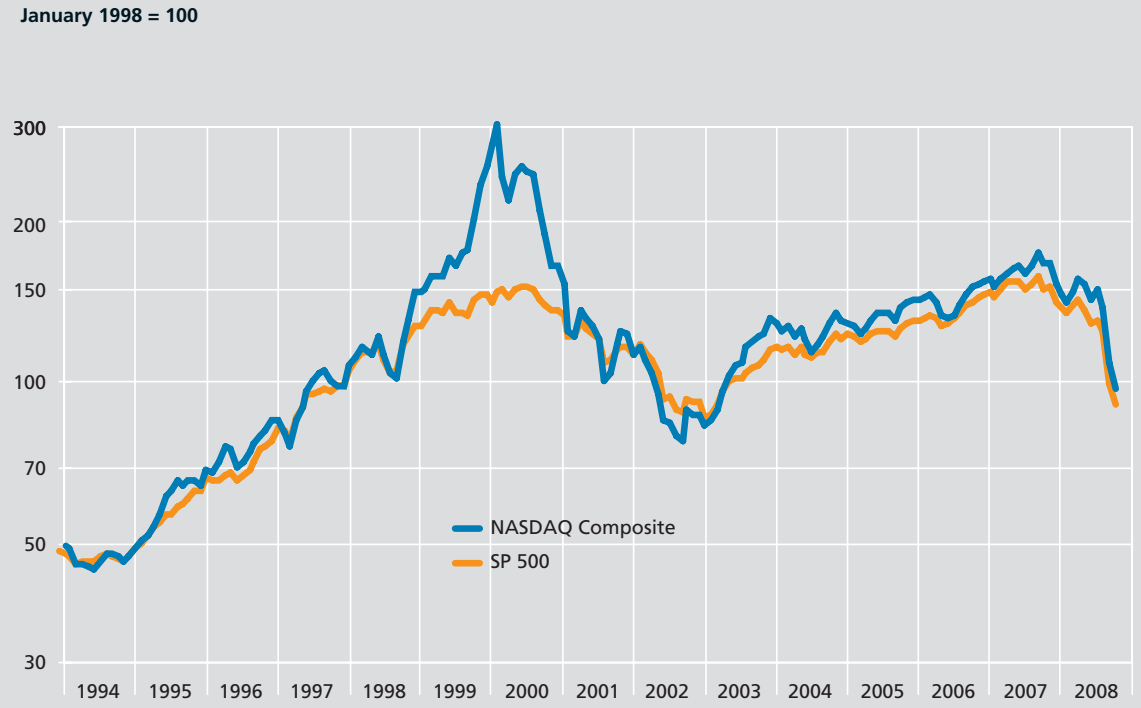
Evolution of share prices for a selection of ICT sector companies

	Sept. 30 2008 (100 index)	Nov. 20-21 2008	Jan. 30 2009
Microsoft	100	66	64
SAP	100	63	74
IBM	100	61	78
Dell	100	56	58
Google	100	65	85
Verizon	100	83	93
Vodafone	100	92	106
Alcatel Lucent	100	55	57
Cisco	100	64	66

Source IDATE

ICT stocks caught in the tumult of the US market…

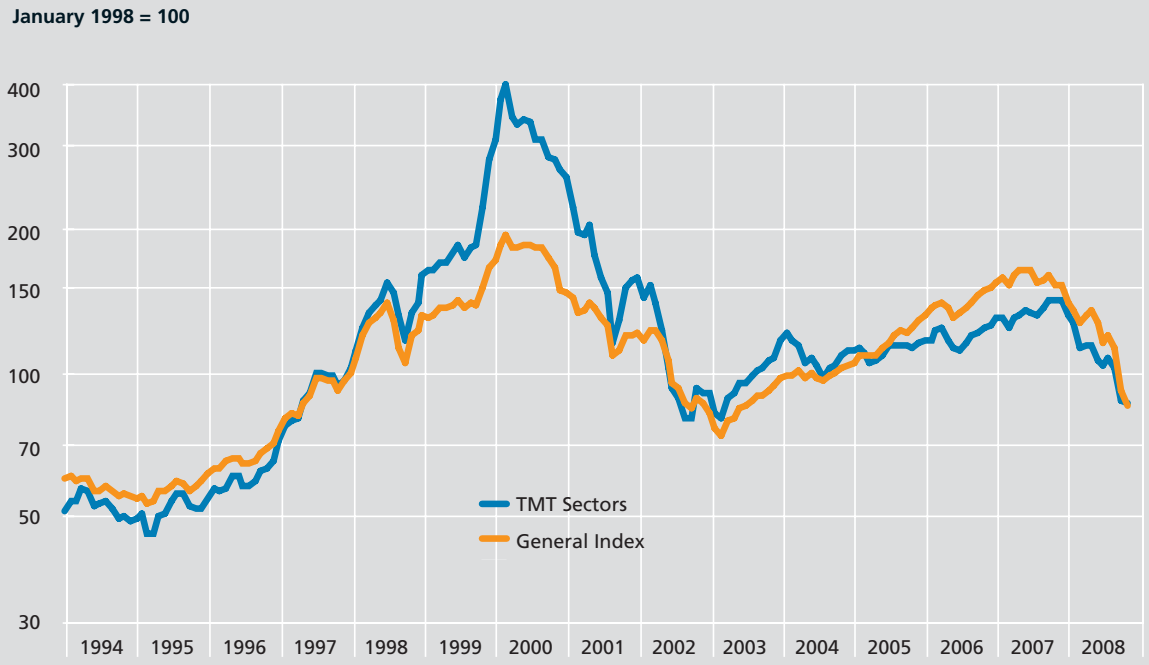
Evolution of ICT (NASDAQ) and general (SP500) stock prices in the US



Source Coe-Rexecode

… and of European stock markets

Evolution of ICT stock prices in Europe (Euro Stoxx)



Source Coe-Rexecode

II Markets and players

A time to change course?

That the momentum in DigiWorld markets slowed considerably over the course of the past year does not fully explain their present configuration. They are being shaped by an unprecedented combination of phenomena which, although varying in scope, are all on a downwards trajectory – with all signs pointing to an even bleaker outlook in the months ahead.

All DigiWorld segments are sliding down the same slope. Any trends that had helped offset the decline in recent times have either disappeared or been largely diminished: equipment and services, consumer and business markets – none have been spared. The ones that have best weathered the storm up to now have been media-related activities, notably TV services and consumer electronics. Within each segment, the growth pools that were helping to counterbalance the slide are becoming increasingly scarce and losing their effect: in the telecoms market in particular, growth in the mobile phone segment – which had been the driving force for the entire sector (services and equipment included) since the start of the decade – dropped sharply last year.

From a geographical perspective, both advanced and emerging markets are feeling the pinch, albeit not to the same extent, of course, as the second continue to enjoy a higher rate of growth. But no region will be spared the effects of the global downturn, except perhaps the already disenfranchised, notably sub-Saharan Africa whose dire needs remain intact. A regional perspective on these issues is given in the next chapter.

Some contrasts remain unchanged. From a structural standpoint, the issues may vary from segment to segment, with value chains being more or less stable. It was, however, the year-end circumstances that revealed signs of – in some cases profound – weaknesses in several areas, whereas others have proven more resilient. This will be discussed in more detail later.

Structural adjustments weighing on telecom markets

After a period of three to four years during which telecom markets were back in the pink, 2008 was marked by decline, with growth dropping by two points in the services segment, and by three points in the equipment segment.

The double-digit growth that mobile services had been enjoying worldwide for several years shrank significantly in 2008: although the number of mobile customers continues to rise (close to 550 million new customers over the course of 2008, and an average increase of 570 million in 2007 and 2008, the highest ever to date), the relative rate of progress is declining proportionate to the size of the base at the start of the year – in other words, the bigger it is, the slower it grows. At the same time, ARPU continues to decrease slightly. All this contributed to the four-point decrease in growth in mobile services markets last year.

In the fixed services market, meanwhile, although it had once been thought that the destruction of value brought about by the gradual replacement by cellular and IP telephony would be at a steadily slower pace, it appears, on the contrary, to be picking up speed. In the more mature markets, the development of high volume mobile offers and the surging popularity of VoIP are moving consumers further and further away from their landline phones. Subscription revenues, which helped sustain the market for awhile – in some cases thanks to price increases which the incumbent 'negotiated' with the regulator – are increasingly threatened. On the one hand, an increase in the price of a PSTN subscription (when it exists) is struggling to offset the quickly shrinking customer base; as a result, it is income from unbundling that is helping to keep the incumbent carrier's business afloat. On the other hand, in broadband markets that are taking the place of fixed calling in

telcos' books, pressures created by market competition are thinning operators' Internet access service margins.

At the same time, over on the equipment side of things, the mobile market's development has meant a sharp increase in handset sales: 836 million units sold worldwide in 2005, 987 million in 2006 and 1,136 million in 2007, or an additional 150 million phones sold every year. In 2008, however, with the sale of 1.2 billion phones, the volume increase was cut in half compared to the year before – a trend that is expected to carry over to this year. The market's chief growth driver is thus losing steam.

On the network infrastructure side of the equation, although more moderate, growth has held steady. In the short term, major adjustments are expected in the business market but telcos' investments may be affected only marginally although, should the situation get worse, this could well be one of the first areas hit by cost-cutting measures.

IT markets more sensitive to the economic climate

In earlier crises, and especially after the Internet bubble burst, IT markets revealed that they were more sensitive to the reigning economic climate than other ICT segments. Computer hardware in particular is affected by companies' investments – which generally go in three to four-year cycles under normal circumstances, but which can extend to four to five years when times are tight.

Inside the DigiWorld, this market was once again one of the first affected by the economic downturn, starting in autumn 2008: personal computer sales were stagnant in the USA in Q4, and even began to dip in Asia, except in Japan. Server sales began to decrease in Q3 and it was only strong performances early in the year that allowed the market to post slight growth for the year as a whole, although the swift shift in the tide foreshadows a sharp decline for this year.

The situation is somewhat different in the software and services segment which enjoyed a relatively healthy momentum, at least up to the end of 2008, especially in large emerging countries. Computer applications are central to business management systems and, ultimately, to the economy as a whole. It is understandable that they are invariably the first to be kept up to date, especially in times when efficiency is not just a way of staying competitive, but actually crucial to survival. Hardware becomes less of a priority but a priority nonetheless, as applications require increasingly large capacities to run and, ultimately, will not be able to evolve if the hardware does not evolve along with them.

Media markets holding on

Although shaken, media markets managed to hold their own in 2008. Television services revenue is being sustained by pay-TV subscriptions, although we are seeing signs of tension in ad revenue. Competition from the Web for ad revenue, which affected print media first and foremost, is starting to be felt by other media as well. If the trend left the TV sector relatively unscathed up until 2008, it could well be felt much more acutely in 2009, when coupled with the economic downturn. Meanwhile pay-TV, whose momentum in recent years has been fuelled in part by the development of satellite services, is now being sustained more by cable which has finally gone digital, and to a lesser degree by IP. Finally, the contribution from licensing fees is shrinking slowly but steadily.

2008 was a more unsettling year for consumer electronics. Strong sales up until the summer appeared to point to a very good bottom line, but things then took a turn for the worse. Flat screen TV sales in particular, which had been a central driving force for several years, dropped in the last quarter of the year. This trend in the consumer market

is comparable to the trend in IT sales in the commercial market: demand for services (namely pay-TV for consumers and software and applications for businesses) continues to rise but the hardware (televisions on the one side and computers and servers on the other) is not being replaced or upgraded.

Clearly, 2008 marked the end of a cycle which began several years ago when the rebound of ICT markets began. The structural adjustments in markets that have reached maturity were precipitated by a matter of months by the economic downturn whose impact on the players is still ambiguous. There is a combination of prudence, brought by uncertainties over the future, and a particular effort being made, especially in the realm of innovation, to capitalise on all the developments that were already in the works. In addition, the segments that are affected more directly by the economic climate, and which had in fact benefitted from the juggernaut momentum these past few years, are now being more directly threatened by the growing recession. Many players, and especially hardware suppliers, are now facing often radical choices including those of refocusing on their core business and selling off assets.

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Strong headwinds

DigiWorld markets by sector

With an average growth rate of just under 5%, for a market estimated at 2,739 billion EUR, the DigiWorld's momentum slowed considerably in 2008. The various segments still have the potential to grow, at a time when others are being hit hard by the economic collapse. What we are seeing is both lesser performances in the different ICT market components and, naturally, growing tension as the year progresses.

Lesser performances in the different segments

While, in the past, the growth momentum has varied from one segment to the next – one example being the close to 7-point gap in the annual growth rate for the computer equipment and consumer electronics hardware markets – what we have been seeing since 2007 is a greater levelling off of the rate of progress in ICT hardware markets on the one hand, and ICT services markets on the other. The gap has now shrunk to 0.4 points, with an average growth rate of 6.8% for the first and of 6.4% for the second – dropping to 5.1% and 4.7%, respectively in 2008. The gap is also shrinking between hardware and service markets in each of the major telecom, IT and media segments.

In the telecom sector, growth in the services market has gradually slowed to almost the same rate as the equipment market and, for the past two years, has even been progressing at a slower rate as the equipment market's momentum was being sustained by demand for mobile handsets – at least up until autumn 2008.

In the IT sector as well, services and software (which makes up a hybrid category between hardware and services) experienced a sharper drop in growth than hardware between 2006 and 2008. In the media sector, finally, the opposite is true, with the decreased momentum in consumer electronics markets putting them more on a par with services.

Services could carve a new gap

Services continue to represent 70% of DigiWorld markets, and are still making a major contribution to growth: in 2008, more than two-thirds of the net increase in revenue came from services. More specifically, of the additional 86 billion EUR generated by these activities in 2008, close to half (40 billion EUR) came from telecom services, more than a third (32 billion EUR) from IT and software services and the remaining 14 billion EUR from TV services.

In the short term, as foreshadowed by the trends in Q4 2008, the downturn could lead to pressure on investments and scaled-back consumer spending, which will be felt more in equipment than in the services segments.

N.B.: The data supplied here are end market figures for each sector and may be counted twice in the case of consumption in overlapping sectors. We have nonetheless eliminated the possibility of double counts as far 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 high volume international trade.

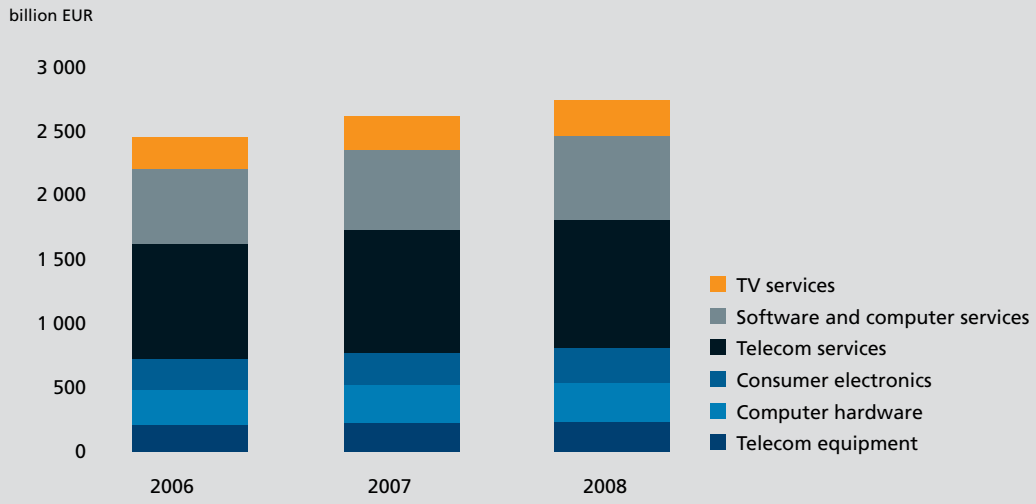
Global DigiWorld market, by sector

(billion EUR)	2005	2006	2007	2008
Telecom services	851	901	957	997
Telecom equipment	196	206	222	232
Software and computer services	544	581	622	654
Computer hardware	270	281	296	306
TV services	234	249	263	277
Consumer electronics	212	236	254	273
Total	2 307	2 455	2 614	2 739

Source IDATE

Balanced growth between equipment and services…

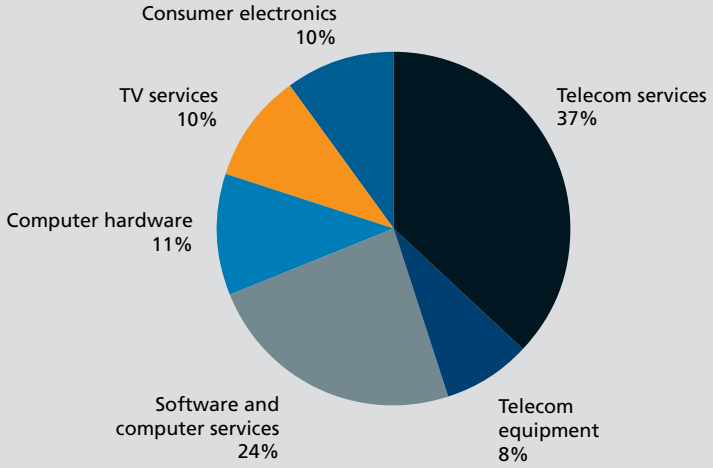
Global DigiWorld market growth, by sector



Source IDATE

… but services still dominate

Breakdown of global DigiWorld markets by sector, in 2008



Source IDATE

End of the cycle?

Telecom services

Clear drop in telecom services market growth in 2008

After progressing at an average annual rate of 6% from 2005 to 2007, the global telecom services market suffered a downturn in 2008, with growth dropping to 4.2% – for a total revenue estimated at close to 1,000 billion EUR.

Added to the structural pressures that have been weighing on the sector for several years now (decline of the fixed market, mobile market reaching maturity in advanced countries) are the first effects of the global economic and financial recession.

Mobile services growth down four points while decline of fixed telephony accelerates

With global revenue estimate at 542 billion EUR in 2008, mobile services represent 54% of the total telecom services market, and singlehandedly account for all of the sector's growth. Their annual growth rate, however, has gone from 12% in 2007 to 8% in 2008.

The global base of mobile customers grew by a further 17% in 2008, but this increase in volume is offset by a steady decline in ARPU (average revenue per user) which averaged out at 12.80 EUR a month in 2008.

Revenue generated by fixed services is holding steady while data services revenue, driven largely by broadband Internet services, rose by 14.6 billion EUR in 2008. At the same time, fixed telephony services continue to lose steam, even if the impact on the base is still limited: the number of fixed phone lines shrank by just over 10 million last year, or by just under 1%. The number of broadband connections worldwide rose by close to 20% to 415 million at the end of 2008. With an average density of 6.4 connections per 100 inhabitants, this market still has considerable room to grow, especially in large emerging nations. In the more advanced markets, density is above 30%, which means that between 70% and 80% of households are equipped with broadband access.

Developing markets accounted for 85% of growth in 2008

Developing countries' share of the entire telecom services market has increased from 20% in 2002 to 33% in 2008. Five countries (China, Brazil, Mexico, India and Russia) combined concentrate just over half of that growth, and China alone for a quarter. If China has been home to the world's largest mobile customer base since the start of the 2000s (over 630 million at the end of 2008, or a sixth of the global base), at 80 million connections its broadband base also pulled ahead that of the United States at the end of 2008.

Telecom market growth in developing countries, and especially in advanced economies, is being spurred by mobile services. The average mobile density has gone from 14% at the end of 2003 to 50% at the end of 2008. More than 70% of the world's mobile customers are now located in a developing country. Broadband penetration rates, on the other hand, are very low and virtually nil in some regions: fewer than 0.3 broadband connections per 1,000 inhabitants in developing sub-Saharan African nations.

Growth rates at a record low in industrialised countries

Accounting for two-thirds of the market's value, industrialised countries still dominate the global telecom services market by a wide margin. Their growth rates, which have been slim since the start of the decade, took another tumble in 2008 – going from 4% in 2007 to 1.4% in 2008 in North America, and from 1.9% to 0.8% in the European Union. Dragged down by the declining Japanese market (-2.7% growth), Asia's advanced countries are also reporting a decline.

The demand for new services (including VoIP, IPTV, IM and multimedia mobile) in these countries is only just offsetting the decreased income generated by more veteran services.

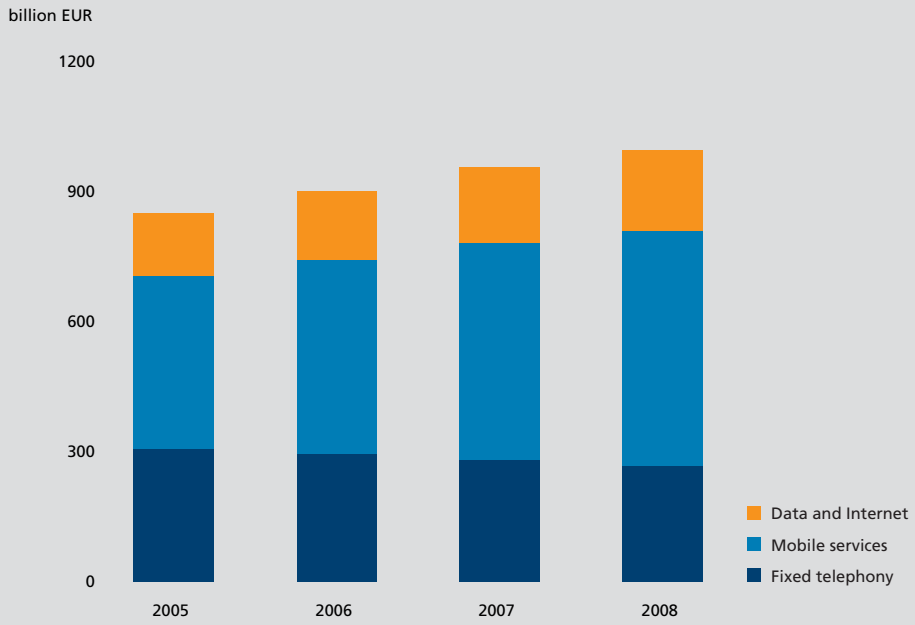
Global telecom services market, by region

(billion EUR)	2005	2006	2007	2008
North America	228	234	243	246
Europe	299	310	321	328
France	37	38	39	40
Germany	54	54	53	51
Italy	31	31	32	31
Spain	24	25	26	26
United Kingdom	45	46	48	49
Asia/Pacific	220	236	250	261
China	57	63	67	72
India	10	12	15	18
Japan	84	85	85	83
Latin America	65	74	85	93
Africa/Middle East	38	47	59	69
Total	851	901	957	997

Source IDATE

Markets

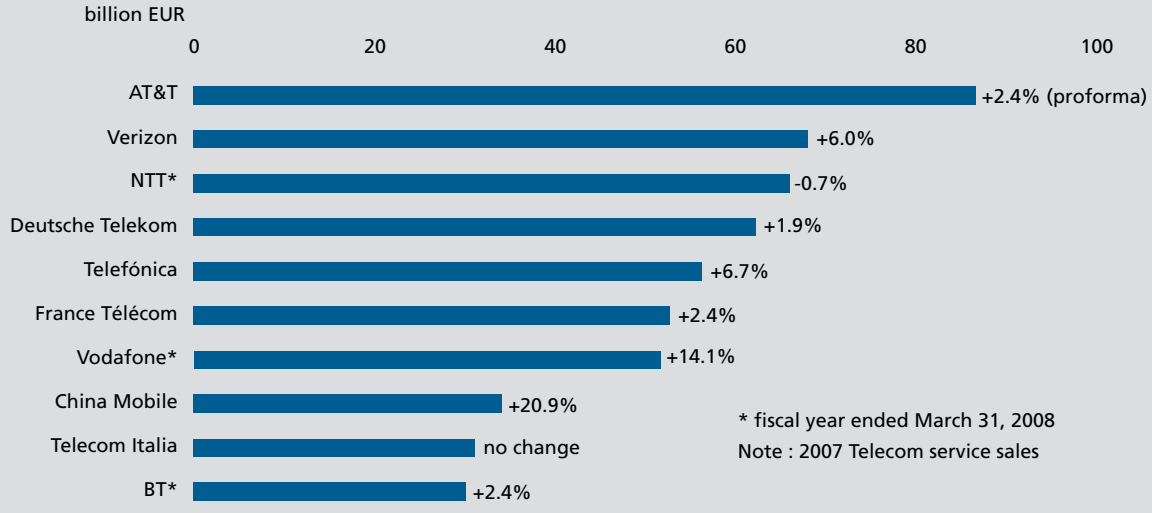
Breakdown of the the global telecom services market by segment



Source IDATE

Players

The world's top telcos



Source IDATE

Pressure rising

Telecom equipment

The world telecom equipment market grew at an only moderate rate – of close to 5% – in 2008 which, among other things, means a more balanced growth momentum between the handset and infrastructure equipment segments. The bulk of growth came from Asian markets, and specifically from China and India which, combined, accounted for two-thirds of the increase in sales around the world – even though Asia accounts for only 40% of the global market, and China and India combined for less than 20%.

Indian operators have increased their investments by seven times in five years, at an average annual rate of close to 50%. From a more general perspective, the weight of the Asia-Pacific region in telecom network investments worldwide increased by four points during that time, while Western Europe and North America lost six and five points, respectively.

Bleaker outlook

In the world's advanced regions, where the situation in an already listless services market has been worsened in recent times by the prospect of a looming economic crisis, operators are tightening their belts further still to be able to maintain their margins, and are being particularly cautious about their investments. For equipment manufacturers, this means added pressure on sales, especially since the handset market, of which mobile phones represent 90%, is also suffering a downturn after three to four years of double-digit growth. Mobile handset sales grew by around 5% over the course of 2008, but were already slowing by the end of the year: Q4 sales were down by 10% compared to the final quarter of 2007. The midrange segment will be the hardest hit – with smartphones, and especially the iPhone, in advanced markets and low-cost handsets in emerging ones continuing to enjoy an increase in sales. On the manufacturing side of things, Nokia is still on top and Samsung has emerged as its chief rival; Motorola is losing ground to Sony Ericsson and LG and integrator models (HTC) from South-East Asia are making real strides.

Rise of Asian manufacturers

In the infrastructure equipment segment, it is Chinese companies that are enjoying the healthiest growth momentum by far and which no doubt have the best prospects when it comes to exports, as much to emerging markets as to mature ones. Huawei's revenue increased by six times between 2003 and 2008, while ZTE's quadrupled. Among Western companies, Cisco and Ericsson have fared particularly well, thanks to growth in IP routing hardware sales for Cisco – helping the company multiply its sales by a factor of 2.5 in five years – and to the success of infrastructure-based services for Ericsson, whose sales nevertheless dipped in 2008. The big mergers, on the other hand, have translated into mediocre performances for their protagonists: Nokia Siemens and Alcatel Lucent reported sales in 2008 that were only just equal to 2003 levels. These results, and particularly the downwards slide since 2005-2006, can be seen to be due to the sluggish momentum in Europe and North America in particular. Meanwhile, the lack of critical mass has increased the pressure on smaller players such as Motorola and Nortel, at a time when price wars are heating up.

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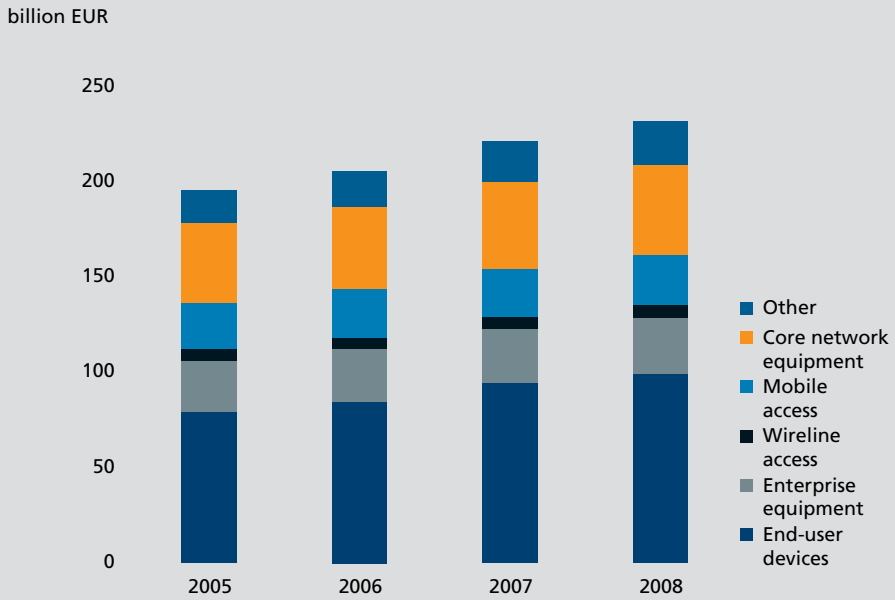
Global telecom equipment market, by region

(billion EUR)	2005	2006	2007	2008
North America	51	53	53	53
Europe	63	65	67	69
France	7	7	8	8
Germany	8	9	9	9
Italy	7	7	7	7
Spain	5	6	6	6
United Kingdom	10	10	10	11
Asia/Pacific	65	70	81	88
China	20	21	24	27
India	4	6	9	12
Japan	23	23	23	22
Latin America	10	11	13	13
Africa/Middle East	6	7	8	9
Total	196	206	222	232

Source IDATE

Markets

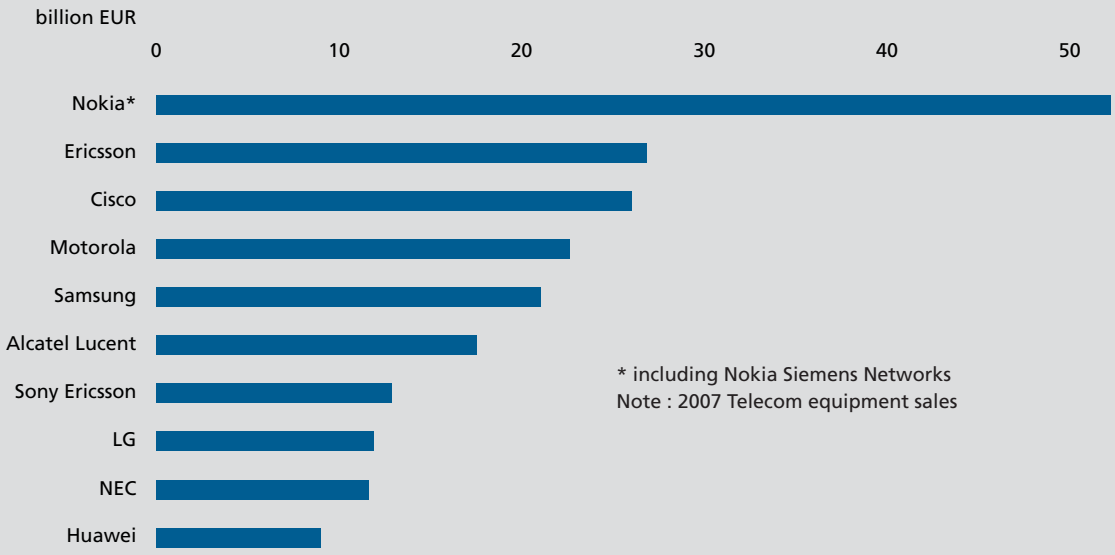
Breakdown of the global telecom equipment market by segment



Source IDATE

Players

The world's top telecom equipment suppliers



Source IDATE

Impact of the crisis

IT services and software

The global software and IT services market suffered a downswing in 2008, with growth decreasing by around two points compared to the past two years, down to 5.1% – with a further drop expected in 2009.

Sharp downturn in the United States

Although the crisis has had an impact on the sector as a whole, the scope of the repercussions and the rate at which they are being felt vary between different countries and regions. As with the fallout from the burst of the high-tech bubble back in 2001, it is the North American market that appears to have been the hardest hit, and more swiftly than the European market which grew apace with the global average in 2008.

Meanwhile the software and IT services market in Japan, which is also among the most affected industrialised nations, is now suffering from a chronic lack of momentum: the slight uptick in 2007 was short-lived, and the average rate of growth over the past few years has been only just over 4%. The large emerging countries in the Asia-Pacific region, on the other hand, continued to enjoy a solid rate of progress, of around 20% again in 2008 – with the IT sector accompanying and clearly sustaining their economic development. Albeit to a lesser degree, this is also the case in the world's other developing regions, with growth rates still above 10% in both Latin America and the Middle East.

There are also sizeable disparities between the various sectors, with some being hit particularly hard (finance, retail and services) while others have fared better up to now (chemical, pharmaceutical, utilities and the public sector).

Changing demands

In most cases, however, IT investments are expected to continue to rise – in large part because of just how strategic information technologies have become in managing and integrating business processes in both companies and public administrations. They are aware that future improvements to performance levels will depend on the use of IT technologies. Their demands, though, are shifting in line with such constraints as increased pressure on costs and optimising resources. For them, top priorities are collaborative work, both in-house and with partners, risk management, performance management and flexibility.

As a result, we can expect to see an upswing in the use of IT service production models in low-wage (nearshore/offshore) countries that will allow users to reap the benefits of more competitive costs.

The outsourcing market is likely to benefit from the economic downturn, but this will be further on down the road and underpinned more by consolidation than by growth objectives.

Software feeling the pinch

Software markets are expected to be more affected than service markets, even if software maintenance should help publishers maintain their income levels. Areas such as HR management, manufacturing resource planning (MRP) and desktop and business software are also likely to suffer a drop in demand. Service-oriented architecture (SOA) and Green IT are also expected to be less of a priority than they were in 2008. Areas such as risk management, performance management, decision-making and collaborative tools, product lifecycle management (PLM) and scientific, technical and embedded applications, on the other hand, are expected to enjoy a relatively spry level of demand.

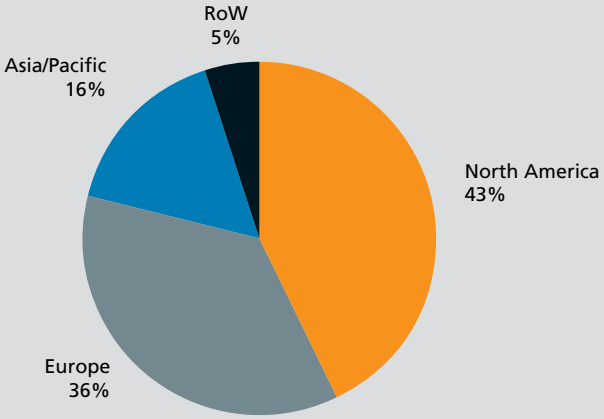
Global IT services and software markets, by region

(billion EUR)	2005	2006	2007	2008
North America	237	252	268	278
Europe	200	212	227	239
France	29	30	32	34
Germany	40	42	45	47
Italy	15	15	15	15
Spain	9	10	11	11
United Kingdom	49	52	55	57
Asia/Pacific	85	91	99	105
China	5	7	8	10
India	3	4	5	5
Japan	52	54	58	60
Latin America	15	17	19	21
Africa/Middle East	8	9	10	11
Total	544	581	622	654

Source PAC

Breakdown of IT services and software markets

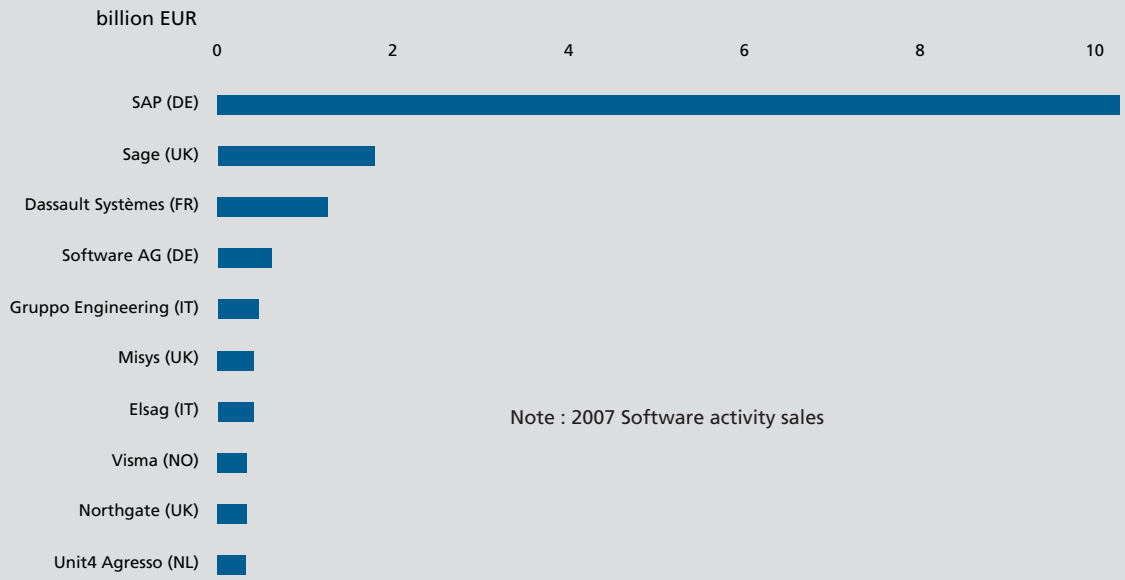
…by region, in 2008



Source PAC

Players

The top European software companies



Source Truffle 100 Europe

Being attacked on all sides

IT hardware

As with services and software, growth in the IT hardware market slowed considerably in 2008, down to 3.5%. It also appears that the recession is weighing heavier on this segment. On the consumer side of the equation, consumption is levelling off while businesses are waiting for brighter days to replace or upgrade their infrastructure. The last major wave of hardware replacement started in late 2004 in the United States, and several months later in Europe, and the next wave could be postponed until late 2009, early 2010.

The United States and Japan are reporting the steepest decreases. Faring somewhat better, growth in Europe nevertheless dropped by a point over the course of the year, due to a combination of a shrinkage in markets that were still enjoying steady growth, notably Spain, and the ongoing lack of momentum in others, especially France and Germany.

In emerging countries and regions, growth is steadier but still less dynamic than in the services market.

PC market stagnant

PC market trends are particularly reflective of the slump in the sector. Sales in the United States in the last quarter of 2008 were only just equal to year-end sales the year before. The situation is the same in almost every other region around the world. Asia-Pacific countries even reported their first drop in PC sales in 10 years in the Q4 2008. Only Japan is enjoying an opposite trend.

The decline is particularly sharp for desktop computers while the decrease in laptop computer sales revenue dipped only slightly, in part due to a drop in average prices in this segment and the shift to even smaller machines such as netbooks.

Server market on the down

After a record-breaking year in 2007, the server market has been on an increasingly steep downwards slide since Q3 2008. Although sales rose slightly in 2008 (2%) in terms of volume, they dropped by 3% in terms of value. The high-end server market has fared better but none of the major suppliers (IBM, HP, Dell, Sun and Fujitsu Siemens) has been spared: all were reporting a 10% to 15% decrease in their server revenue in the last quarter of 2008.

Another more qualitative trend, which has been confirmed, is the popularity of virtual servers – something which is attracting new players to the market, including Cisco which announced a virtual solutions offering in partnership with VMware in early 2009. This will no doubt lead to increased competition in the marketplace.

Peripherals market following suit

And, lastly, the peripherals market is following the same trend, suffering an imbalance in volume and value growth. On the one hand, new needs are emerging as basic equipment evolves (such as portable printers, or flat screens for laptops for ease of use when not on the move) while, on the other, there is still considerable pressure on the price of this hardware.

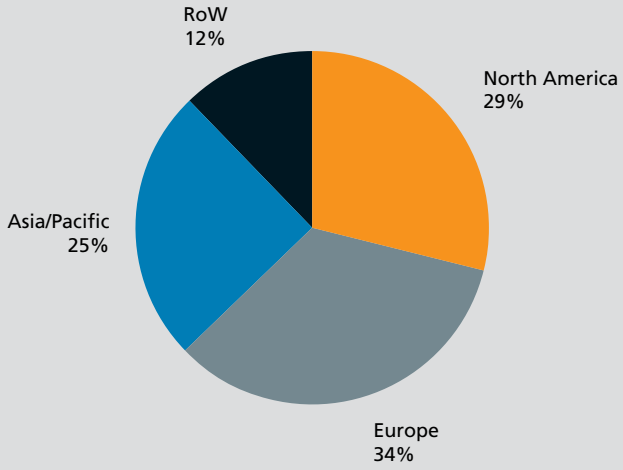
Global IT equipment markets, by region

(billion EUR)	2005	2006	2007	2008
North America	86	88	91	92
Europe	98	101	104	107
France	14	14	14	14
Germany	20	20	20	20
Italy	7	7	7	7
Spain	5	5	5	5
United Kingdom	17	17	18	18
Asia/Pacific	64	67	72	77
China	12	14	16	18
India	5	5	6	7
Japan	31	30	31	31
Latin America	13	14	16	17
Africa Middle East	9	10	12	13
Total	270	281	296	306

Source PAC

Breakdown of IT equipment markets

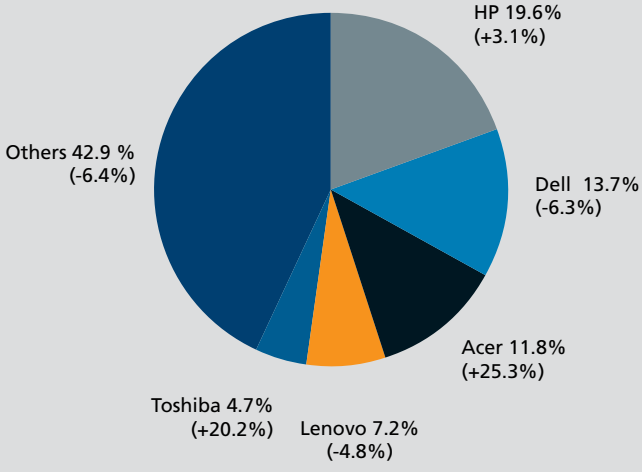
…by region, in 2008



Source PAC

A highly coveted market

PC manufacturer global market share, Q4 2008



(%) : yoy growth

Source Gartner

Tension in advertising markets

Television services

IDATE estimates the global TV services market at 272 billion EUR in 2008, a close to 5.4% increase over 2007, with Asia-Pacific and Latin America in particular helping to spur the momentum.

Threats to ad market growth

Aside from the obvious impact of the global recession, the sector has been facing uncertainties over ad revenue, especially in the most developed markets such as the United States and certain European countries like the UK.

As with other media, television is now competing with the Internet which is enjoying a very swift rise in ad revenue, to some degree at the expense of traditional media, and daily newspapers in particular.

More generally, the world's three main markets, namely the USA, Europe and Japan, are still the heavyweights – concentrating a combined total of 79% of the world's television advertising revenue – but are also continuing to lose a 1% to 2% share of the global market each year.

Pay-TV revenue is enjoying a higher rate of increase, but advertising is still the television industry's main source of income – accounting for 49% of its total revenue. The share of public revenue, in the form of subsidies and licensing fees, is shrinking a little each year. Europe is by far the area where contributions from public monies are at their highest.

Terrestrial broadcasting losing ground

According to IDATE estimates, more than 1.1 billion households around the world are equipped with a TV set, of which 55% are located in the Asia-Pacific region. Terrestrial reception still represents 43% of all TV households, but its share is dropping steadily.

Cable is currently present in 38% of TV households, and is expected to become the most ubiquitous reception mode by 2011. Such is already the case in North America.

Meanwhile, satellite reception, which accounts for 17% of the world's TV households and whose development is closely bound up with the success of pay-TV and digital broadcasting, has enjoyed the highest increase in market share over the past eight years. The real momentum since 2005, however, has come from TV over ADSL – its subscriber base rose by 56% in 2008, but still accounts for only a fraction of total viewers: 19 million customers at the end of 2008, or less than 2% of the world's TV households.

Pay-TV in half of all TV households

550 million households were subscribing to pay-TV at the end of 2008, or close to half of all TV households. Digital TV, which equips close to a third of all TV households, is found chiefly in the largest markets, namely the United States, Western Europe and Japan. As for cable, its digitisation has been slow-going but, thanks to its growing ubiquity and the introduction of bundled services such as Internet access and telephony, VOD and catch-up TV services, it is expected to regain its appeal compared to other broadcasting platforms, and especially to satellite and ADSL.

The most dynamic zones are still Asia, driven by the Chinese and Indian markets, along with Latin America and the Middle East/Africa.

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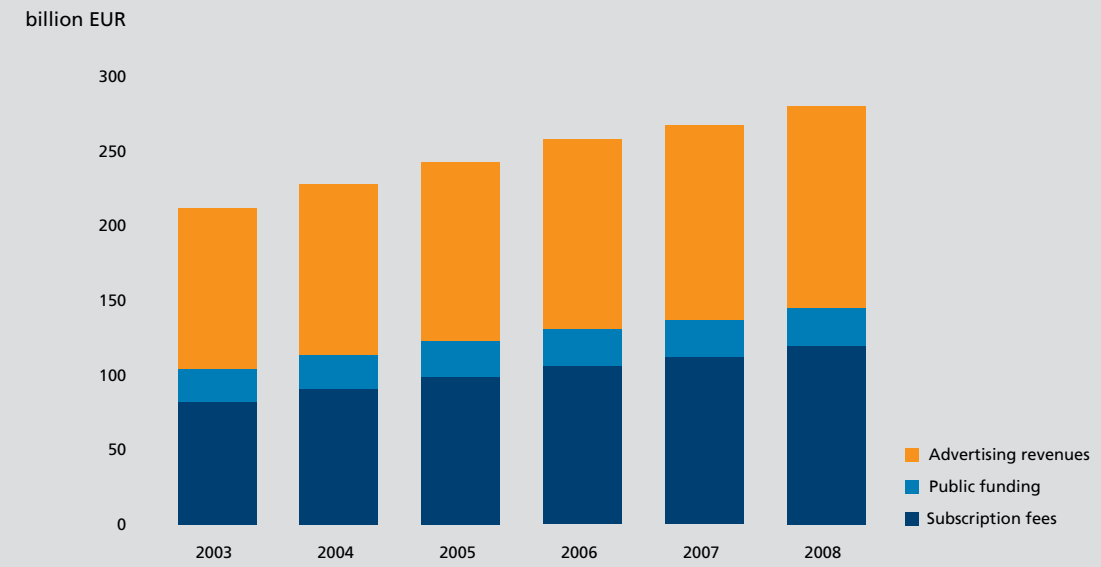
Global TV services market, by region

(billion EUR)	2005	2006	2007	2008
North America	90	97	101	106
Europe	74	79	83	87
France	9	10	10	10
Germany	13	13	14	14
Italy	8	9	9	10
Spain	5	6	6	6
United Kingdom	14	15	15	16
Asia/Pacific	51	53	56	60
China	6	7	8	10
India	4	4	5	5
Japan	23	23	23	24
Latin America	15	16	17	18
Africa/Middle East	4	5	5	5
Total	234	249	263	277

Source IDATE

Markets

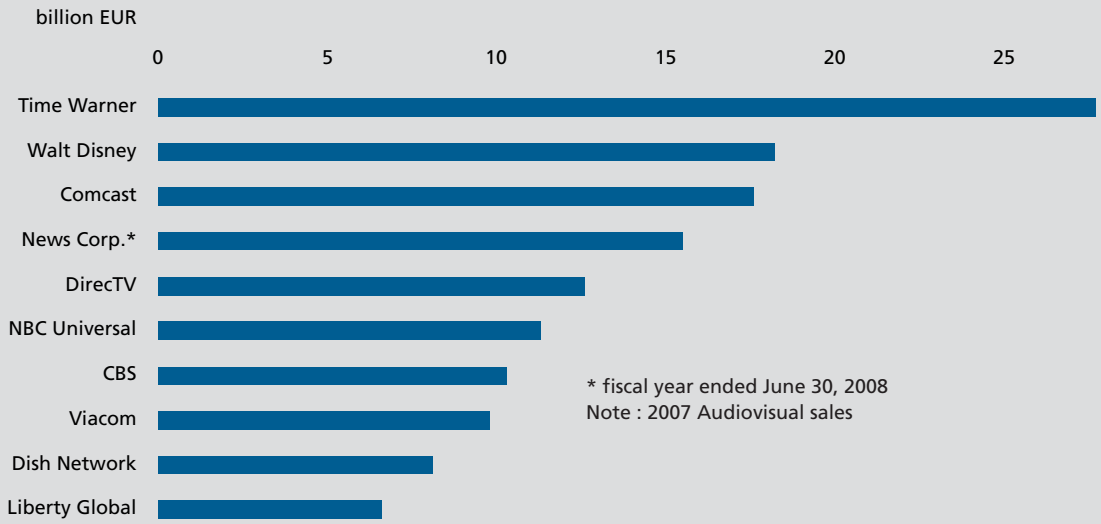
Growth of the global TV services market by segment



Source IDATE

Players

The world's top media companies



Source IDATE

Upswing in 2008 just a passing phase

Consumer electronics

Although the steady drop in growth rates over the past few years appears bound to continue, 2008 proved a good year overall for consumer electronics markets worldwide. Starting out strong early in the year, the momentum nevertheless slowed in the second half of 2008 and now depends almost solely on emerging markets. The last quarter of the year, which is traditionally a high point thanks to holiday spending, was particularly grim. The outlook for 2009 is being shaped largely by the economic downturn which is expected to weigh especially heavily on the North American and Western European markets.

Setback in several advanced markets

2008 marked the onset of a significant slowdown, and even a slump for a considerable number of advanced markets, starting with France where consumer electronics sales revenue shrank by 3% in 2008. The main culprit is the decrease in sales volumes in the core market segments, starting with televisions, combined with a sometimes sizeable drop in prices. According to GfK, revenue from sales of handheld GPS devices decreased by 19%. After several years of uninterrupted increase, average spending on flat screen TVs dropped by 3.5% to 700 EUR (vs. 725 EUR in 2007). The average price of a microcomputer also went down by 16% in a single year. Only the video game segment (consoles and software) continues to enjoy a steady rise.

Latin America and Africa/Middle East will remain the most dynamic markets in the short term. The Asian market as a whole is slowing but still sustaining a momentum thanks to its sheer size – accounting for 30% of the global market, with China singlehandedly representing half of that.

Flat screen TV market on the down

Flat screen TVs, whose sales account for over a third of the consumer electronics market, have been the chief driving force over the past few years thanks to double-digit growth up until 2007. Sales volumes continued to rise in 2008 – with close to 150 million units sold, or two-thirds of all TV sales worldwide during the year – but at a much less steady pace and especially at such drastically reduced prices that the market's value remained almost the same – even dropping in the last quarter of the year for the first time ever.

Manufacturers struggling

These market tensions mean financial hardship for the leading players. Sony predicts that it will be posting its first deficit in 14 years in its fiscal 2008-2009 results, and has launched widespread cutback plans as a result. Meanwhile Samsung reported its first ever losses in Q3 2008, and has announced a restructuring plan to consolidate its assets. Two other heavyweights, LG and Panasonic, are faring no better: the first has reported a quarter of record loses and the second is scaling back investments – including a 1.5 billion USD cut in planned spending on two new flat screen production plants – and putting an end to unprofitable business areas.

The market's other driving segments, namely DVD players, video games and GPS, appear to be in somewhat better health, but lower consumer spending will inevitably affect them as well.

Consumer electronics markets in the US

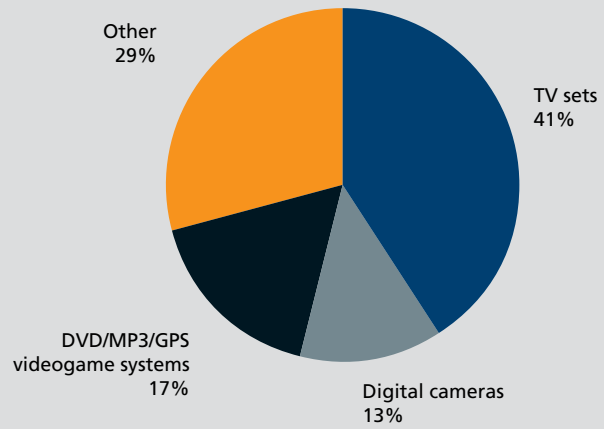
(billion USD)	2004	2005	2006	2007	2008
In-home technologies*	25	26	32	33	37
In-vehicle technologies	7	8	9	11	12
Anywhere technologies**	19	23	29	34	37
CE enhancements	17	18	19	20	20
Total	68	75	90	98	107

Source CEA

** excluding home IT (PC, printers…) ** excl. portable communication (mobile handsets, smartphones)*

TV sets account for more than 40% of the CE market

Breakdown of the global CE market in 2008

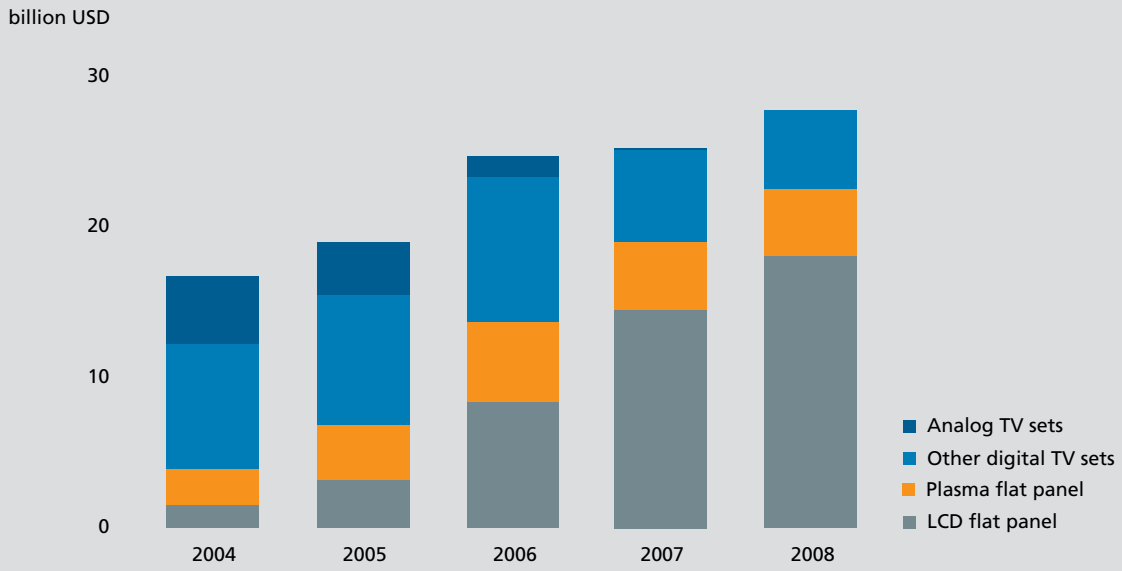


Note : excluding PC, peripherals and mobile handsets

Source CEA

LCD screens dominate sales

TV market in the US by technololgy



Source CEA

The Internet giants

Centred around social networking, the Web 2.0 juggernaut has driven new online players to centre stage. The icons of this new landscape, MySpace and Facebook, are also serious rivals for the old guard, especially since their success is spilling out beyond the 2.0 realm and putting them consistently among the most trafficked sites in the United States and in a great many other countries, especially in Europe.

"Veterans" and newcomers going head to head

The veteran Internet giants caught the Web 2.0 train while it was already on the move. Having missed out on pioneering the phenomenon, they made up for lost time through a series of takeovers and partnerships, gradually forging themselves a place in the participatory Web, and keeping up with the latest trends – although still working to catch up in some cases. Google in particular is playing the open Internet card in the social networking sphere where it does not enjoy a position of strength – unlike Facebook which boasts a huge base of detailed user profiles – while avoiding a similar strategy in those markets, such as online search, where it dominates.

So the battle is on, both between veterans and newcomers, but also more directly between the new reigning champions which are all competing for audience. It is through their respective strategies that MySpace and Facebook will try to distinguish themselves in the coming months and years: while the first is pursuing its policy of generalist community portal focused on digital content (music, videos and games), Facebook is clearly working to evolve into a platform.

The other key Web 2.0 players

Aside from Facebook and MySpace, the other major Web 2.0 players can be broken down into several categories:

- leaders in a specific niche (del.icio.us for social bookmarking, Digg for content ranking, Wikipedia for knowledge sharing, Flickr and Photobucket for photo sharing…);
- the most popular social networks in a given region or country (Mixi in Japan, Cyworld in South Korea, Bebo in the UK, Orkut in South America…);
- new, fast-rising services (Twitter micro-blogging, Friendfeed social network aggregator);
- video sites (world leader YouTube and its local challengers: Dailymotion in France, PandoraTV in South Korea…).

Despite their massive popularity, Web 2.0 sites are not managing to generate revenue in line with the size of their audience. It does appear that, although nobody doubts the economic potential of Web 2.0, nobody really knows how to exploit it and no-one, not even the leading proponents, has yet found an efficient solution for monetising audience through advertising.

Industry consolidation

In the medium term, it seems likely that achieving critical mass in terms of audience and/or traffic, along with well-honed datamining skills will be critical to ensuring the survival of Web 2.0 players.

Several waves of mergers and acquisitions are to be expected in the coming years, as one of the rare survival strategies for a 2.0 service is to be taken over by a major corporation from the Internet, media or telecom sector. The massive increase of 2.0 consumption is attracting not only Web 1.0 players to the ring, but also media and telecom companies as well.

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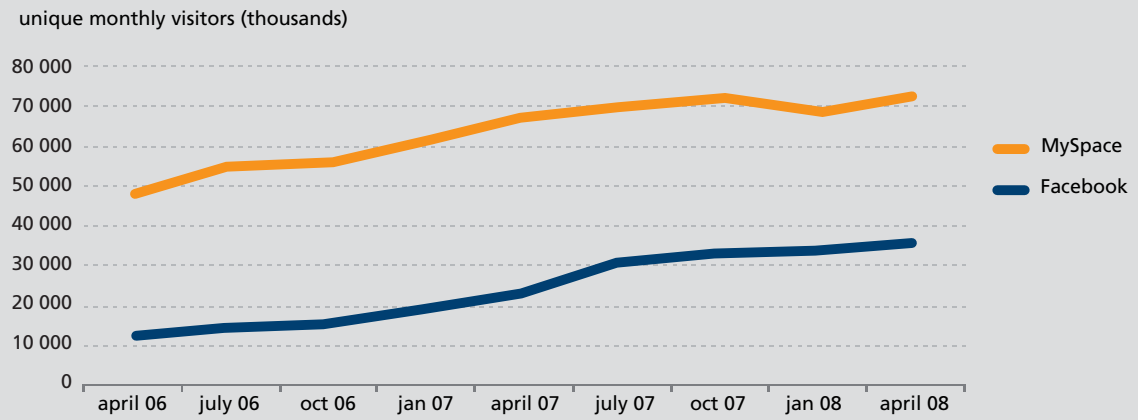
Top Web 1.0 companies' chief Web 2.0 takeovers and share acquisitions

Internet giant	2005	2006	2007	2008
Google	Dodgeball (mobile social network)	Measure Map (blog ranking), Upstartle (online collaborative word processing), YouTube (video sharing)	Panoramio (geolocation-oriented photo sharing), Jaiku (micro-blogging)	Tatter and Company (South-Corean blog platform)
Yahoo!	Flickr (photo sharing), Konfabulator (widgets), Upcoming (events calendar), del.icio.us (social bookmarking)	Webjay (music sharing), Jumpcut (video sharing and editing), Bix (karaoke and online competitions), Wretch (community portal)	MyBlogLog (blogger stats)	
Microsoft	FolderShare (file sharing)		1.6% stake in Facebook	
AOL	Weblogs (blogging)	userPlan (sharing applications for community sites)	Yedda (questions and answers)	Bebo (social network) Social Thing (social network agregator)

Source IDATE

Audiences growing swiftly

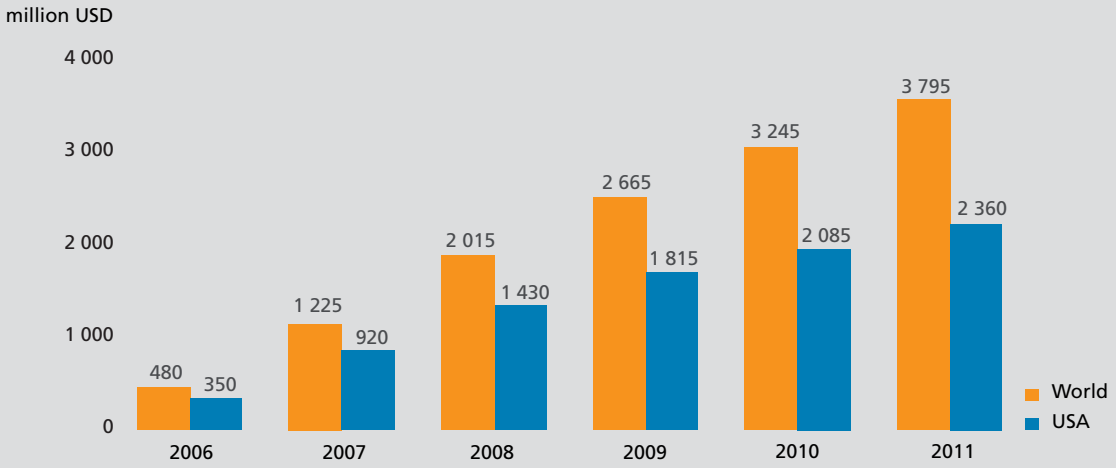
Growth of MySpace and Facebook traffic in the United States



Source IDATE

Online ad revenue concentrated largey in the US

Growth of advertising spending on social networks in the United States and worldwide, 2006 - 2011



Source Seoul Financial Times & IDATE estimates

III DigiWorld markets by region

Regional and local contrasts persist… beyond the effects of the crisis

Two-thirds of the 2,700 billion EUR generated in revenue by the DigiWorld in 2008 were still concentrated in developed economies, despite the much greater growth momentum found in emerging regions – which have increased their share of the global market by five points since 2005. Beyond this gradual rebalancing, there continue to be major disparities within each region, in terms of both growth momentum and market structure.

United States still leading the way

The United States is still by far the world's largest market, accounting for close to 30% of the global total in terms of value. IT segments have a greater weight in the equation there than in other regions: 44% of the total, a little more than in Europe and double what we find, on average, in the rest of the world. Revenue from television services is also particularly high, sustained by ad revenue and pay-TV earnings. Close to half of the world's pay-TV revenue is earned in the United States. The telecom segment, on the other hand, plays a smaller role in the American market than it does in the rest of the world: 35% of the total, compared to 44% in Europe and more than 50% elsewhere, despite the US having amongst the highest equipment levels. Fixed telephone density is still among the highest anywhere, despite the steady decline since the start of the decade. At more than 270 million, the mobile customer base is smaller than Europe's, compared to the population, but more than 90% of them are subscribers. The United States is also home to 80 million broadband subscribers, giving it a greater density than in Western Europe as a whole. Computer equipment levels are high, with 75% of households equipped with at least one PC. But contrary to what we find in other developed countries, this technological maturity does not appear to be hampering the markets' momentum: more than anything it is the economic climate, and especially the dramatic downturn in 2008, that is responsible for the great drop in growth rates in DigiWorld markets on the other side of the Atlantic. It is worth remembering that the United States was among the hardest hit by the burst of the Internet bubble, and this right up until the rebound in 2004-2005.

Europe represents a block that is slightly larger than the United States, accounting for 33% of the global market. It is, all the same, by no means a homogeneous whole: inside of Europe, and even within the European Union, we find development and equipment levels, as well as growth rates, that vary considerably from one country to the next. The only point they really have in common is high mobile density which, from the Atlantic to the Ural mountains, consistently exceeds 100%: at the end of 2008, the average mobile density in Eastern Europe was 119%, and 124% in Western Europe. As for fixed telephony, however, figures range from a 20% density in Slovakia, to 60% in Cyprus, while figures on broadband density range wildly from close to 1 up to 100. Looking only at European Union countries, household broadband equipment levels at the start of 2008 ranged from 14% in Bulgaria to 77% in the Netherlands. In the EU-27, 57% of households, on average, are equipped with at least one microcomputer, with national figures ranging from 27% (Bulgaria) to 90% (the Netherlands). In terms of value, meanwhile, the region's five largest markets – namely, Germany, the UK, France, Italy and Spain – account for 60% of the market and 40% of the population. In terms of growth momentum, however, all five of these countries reported growth rates below the European average in 2008.

The two faces of Asia

There continues to be a real dichotomy in Asia as well, with the region split between a few advanced countries on the one side, namely Japan, South Korea, Australia and New Zealand, and rapidly developing countries on the other, some of which are massive,

especially China and India. Among the region's advanced markets, the largest is Japan which is also the most stagnant, at least in terms of value: its DigiWorld markets have not grown by more than 2% during any of the past three years and, as with all industrialised countries, 2008 was particularly grim. Telecom segments are the major cause of this slump, having shrunk in 2007 and again in 2008. As concerns equipment and consumption levels, however, Japan along with South Korea is by far one of the most advanced countries: virtually all of its mobile customers are equipped with 3G and non-voice services account for 30% of mobile ARPU. At the end of 2008, Japan was also home to more than 10 million ultra-fast broadband subscribers (chiefly via FTTB).

In terms of value, emerging countries account for just over half of the Asia-Pacific region's DigiWorld markets, with China alone accounting for half of that. Although these countries have not been spared by the economic crisis, they are still faring remarkably well: India, for instance, continues to report growth rates of close to 20% a year. China, meanwhile, enjoyed double-digit growth again in 2008, but did suffer a slight decline that can be attributed chiefly to lesser growth in telecom segments which account for 60% of the region's DigiWorld markets. These lower growth rates are above all a natural consequence of the equipment levels that have been reached: with a mobile density now close to 50%, relative growth is bound to decrease. ARPU is also shrinking as operators work to reach new sections of the population. On the whole, mobile service revenue growth dropped by four points between 2007 and 2008. Alongside the titans that are China and India, most of the region's other developing countries are also enjoying double-digit growth, with special mention going to Vietnam, Malaysia and Thailand which account for 20% of the growth in the Asia-Pacific region's emerging markets; and 35% when we add two larger countries, Pakistan and Indonesia.

Growth in Latin America suffered a downturn in 2008, in large part because of major setbacks in telecom segments, which account for more than half of the region's DigiWorld markets. If, as is the case in China, higher mobile equipment levels are one of the reasons for the lesser growth rate, the economic crisis has had a greater effect in the region as well. In the past, Latin America has responded to economic crisis with both fallow periods and very strong rebounds. Brazil and Mexico combined account for 60% of the zone's markets, albeit with growth rates below the regional average in recent times.

When Africa awakens…

Finally, Africa and the Middle East, which account for under 5% of global DigiWorld markets, are reporting very steady growth rates even if, like everywhere else in the world, 2008 marked a setback. Telecom segments have the largest weight in the region's ICT equation, representing close to two-thirds of its DigiWorld revenue, and enjoying growth rates that have been consistently higher than any other ICT segment. The region can in fact be divided into the northern part (North Africa and the Middle East) and the southern part, with South Africa standing out as a lone exception. Equipment levels in the north are higher – average mobile density was close to 70% at the end of 2008 – but growth rates are more meagre: there was a 10% difference between telecom market growth rates in North Africa/the Middle East and sub-Saharan Africa, excluding South Africa, in 2008. It is also in the southern part of Africa that telecom networks are the least developed in the world: a mere 0.03 broadband connections per 100 inhabitants at the end of 2008. A number of international programmes are currently aimed at putting an end to these countries' technological marginalisation.

A more even balance of power between these markets is expected to continue at a natural pace, drawing on the growth pools that still exist in underdeveloped regions and, on the flipside, an automatic slackening on the growth momentum in advanced regions. It is not yet certain whether the economic downturn will speed up or, on the contrary, slow these natural adjustments. In advanced markets, the bleak economic climate will mean cutbacks for both consumers and businesses, all looking for the most cost-effective solution for the different communication tools at their disposal, rather than actually questioning their need for a service. In emerging countries, meanwhile, the need is there but tough times will postpone the equipment process. In both cases, this puts an added pressure on growth that is difficult to measure precisely.

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A slow rebalancing act

DigiWorld markets by region

Developed economies losing ground…

The DigiWorld's two largest markets, namely North America and Europe, are both reporting lessening growth rates, in large part due to their advanced degree of maturity. With a growth rate of 2.9% in 2008, the North American market's share of the world total dropped by 0.6 points to 30.6%. At 2,500 EUR, average spending per capita, all ICT segments combined, is still the highest of anywhere in the world, and a few figures are enough to give an idea of equipment levels: 75% of households are equipped with a computer, 60% with broadband access, 75% with digital TV…

The European market grew by 3.4% in 2008 but its share of the global market also dropped by 0.5 points, to 32.9%. Average spending per capita is below 1,200 EUR, with considerable disparities still between the countries of Western Europe (where average spending is nonetheless 10% to 15% lower than in the United States) and those in Central and Eastern Europe. With respect to equipment levels, one of Europe's outstanding features is its mobile penetration levels, with an average density of over 120% at the end of 2008 – and here disparities between East and West have disappeared almost entirely.

… as emerging economies are gaining

Asian markets are in third place, accounting for 25% of the global market and reporting an above average increase of 6.2% in 2008, which translates into a 0.4 point gain. Even more than Europe, the Asia-Pacific zone is characterised by a massive dichotomy between a handful of advanced markets with high equipment levels but a sluggish growth momentum and, on the other side, a great many and often vast emerging countries with bustling economies. In Japan, the chief representative of the first group, average spending per capita is above 1,700 EUR, but growth tumbled to 0.2% in 2008. Heading the second block of countries, average spending per capita in China and India combined totals 75 EUR (just over 100 EUR for one and 40 EUR for the other) but both are enjoying double-digit growth. As concerns equipment and consumption levels, while the countries in the first group are among the most advanced in the world, those in the second are in the throes of a swift and vast growth momentum: close to 60% of the world's new mobile customers in 2008 were located in that part of the world.

Meanwhile, Latin America accounts for 7.1% of the world market, 10% more than in 2007 (+0.3 points), with average spending per capita of 350 EUR.

Finally, the Middle East/Africa region represents 4.5% of the global market, with average spending per capita of barely 120 EUR. But it is also the region with the strongest growth momentum: increasing by +13.5% in 2008 and by more than 60% in three years (2005-2008), with cellular telephony accounting for two-thirds of this growth.

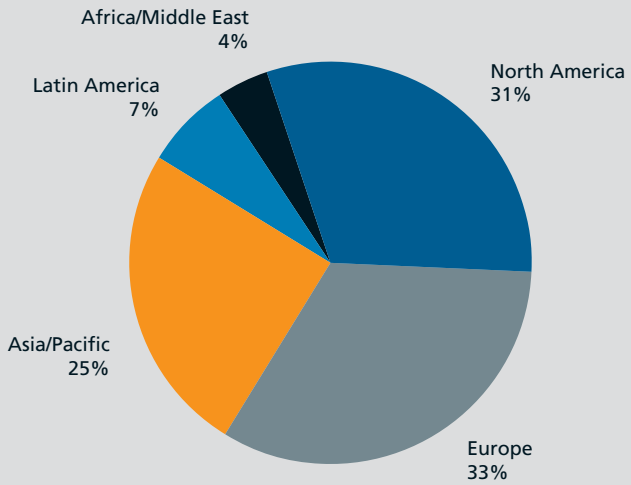
DigiWorld markets by region

(billion EUR)	2005	2006	2007	2008
North America	739	779	816	839
Europe	797	831	872	902
Asia/Pacific	558	596	641	681
Latin America	138	156	177	194
Africa/Middle East	76	91	109	123
Total	2 307	2 455	2 614	2 739

Source IDATE

Global market still imbalanced

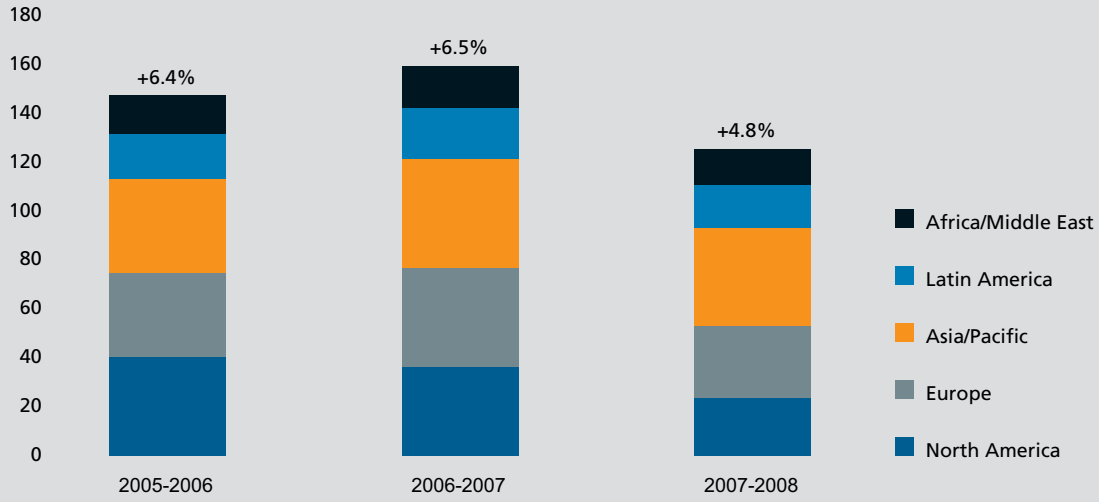
Breakdown of DigiWorld markets by region, 2008



Source IDATE

Global growth slowdown

DigiWorld markets' contribution to growth, by region



Source IDATE

Marked decline

DigiWorld markets in North America

North America accounted for 30.6% of the global ICT market in 2008 – with the United States alone accounting for close to 29%. Totalling 839 billion EUR at year-end, that region's ICT market grew by only 2.9% compared to 2007. Although expected, this drop was particularly sharp after two years of roughly 5% growth. The growth momentum has been particularly sluggish in the telecommunications and IT segments, whereas the TV and consumer electronics markets have enjoyed relatively steady increases.

The economic downturn is naturally one of the prime contributors to the ICT markets' decline. After a rebound in Q2, thanks to the stimulus cheques mailed out to American households, GDP in the US shrank in volume during second half of 2008. On the commercial side of things, the rise in the dollar's value immediately brought export levels down and businesses' balance sheets suffered. The grim outlook is making all players especially cautious, particularly when it comes to investments. Hard hit by the housing crisis, consumer morale is also at a low ebb.

Rebalancing between segments

The contribution of telecommunications to North America's ICT market has been lessening steadily for several years, its weight in the equation shrinking by two points between 2005 and 2008 – with both the services (-1.4 points) and equipment (-0.5 point) markets suffering a decline. As the market has reached maturity, these segments are now growing only slightly: by an average 2.5% annually in recent times. Growth in the services segment dropped to 1.4% in 2008, after enjoying a rebound in 2007 (+4%).

This decline is due to the combination of a sharp decrease in growth in the mobile services market – going from an over 10% annual increase up to 2007 to around 5% in 2008 – and steady, and even increased pressure in the fixed calling market. The players' response has been to consolidate, especially in the United States: AT&T is once again the market leader after having taken control of BellSouth and with now full ownership of Cingular Wireless, while Verizon has also beefed up its position in the mobile market with the takeover of Alltel in mid-2008.

The IT segment's contribution to the ICT market as a whole is holding steady at around 44%, but we are seeing a rebalancing between software and services, which are gaining ground (+1.2 points between 2005 and 2008) and hardware, which has lost some terrain (-0.7 point). Beyond the cyclical nature of corporate investments, this trend is due to greater pressure on prices in the hardware segment.

Media markets holding their own

Media segments' weight in the equation increased by more than a point over the past three years. The United States remain by far the world's largest TV market, singlehandedly concentrating 37.5% of its value. If the ad market's stagnation is penalising growth, the pay-TV segment's contribution and momentum continue to drive the American TV market's growth upwards. Finally, with respect to consumer electronics products, flat screen television and especially video game sales have remained particularly high, despite the credit crunch.

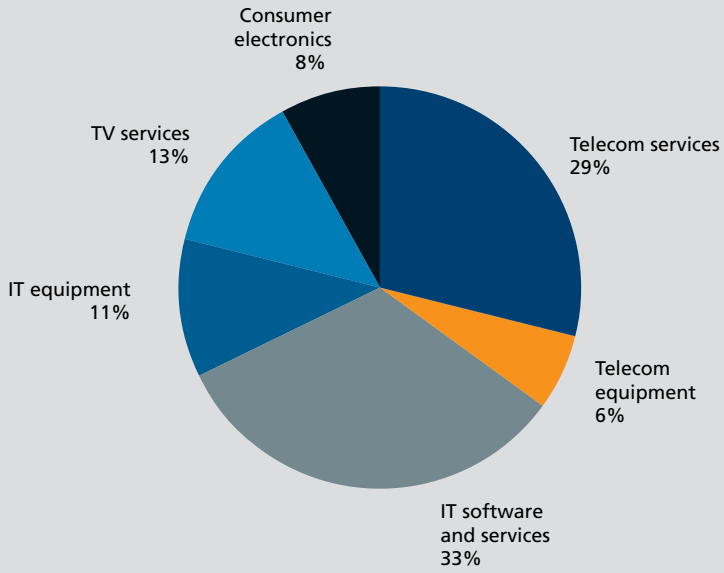
DigiWorld markets in North America

(billion EUR)	2005	2006	2007	2008
Telecom services	228	234	243	246
Telecom equipment	51	53	53	53
IT software and services	237	252	268	278
IT equipment	86	88	91	92
TV services	90	97	101	106
Consumer electronics	48	55	59	63
Total	739	779	816	839

Source IDATE

IT segments going strong

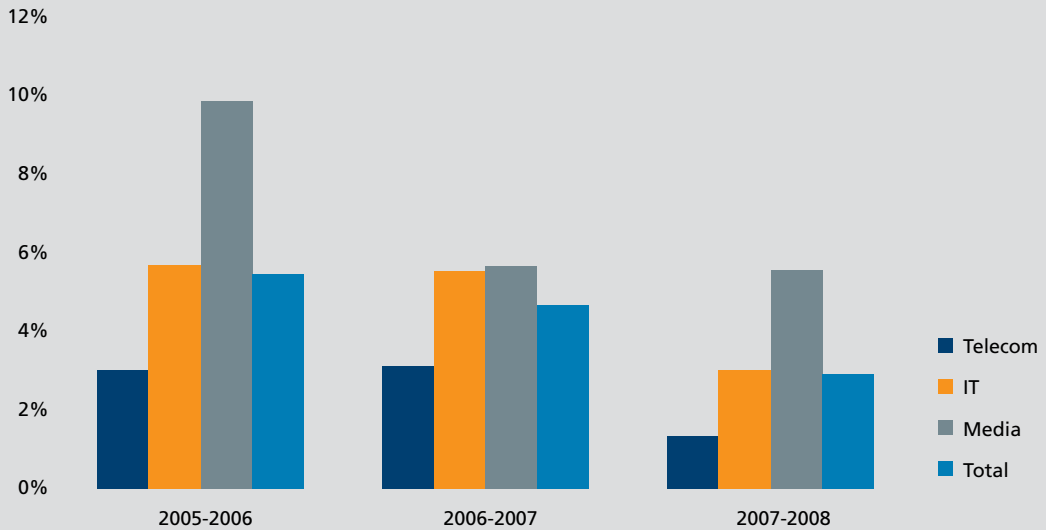
Breakdown of DigiWorld markets in North America by segment, 2008



Source IDATE

… but growth being fuelled by the media

Annual growth of DigiWorld markets in North America, by segment



Source IDATE

Contrasting national markets

DigiWorld markets in Europe

With an estimated value of 902 billion EUR in 2008, Europe's ICT market accounts for close to a third of the global total. After a recession in 2001-2002, the market enjoyed a particularly healthy revival in 2004-2005 but growth rates have fallen to below 5% since 2006, due chiefly to a decline in the telecom markets' growth, and fell again in 2008 as a result of the economic downturn. The momentum varies across the continent, and not only along traditional geopolitical dividing lines – with Western Europe on one side and Central and Eastern Europe on the other – but also at the national level. In the Western block, ICT markets in France and the UK have fared quite well, reporting growth rates of between 2.5 and 3%, whereas growth in Germany, Italy and Spain was around only 1% last year. The setback is especially acute in Spain which had been enjoying remarkable growth rates in recent years: over 6% in 2006 and close to 5% in 2007.

Telecoms still the frontrunner…

Even more than in the world's other technologically mature regions, telecommunications make up the core of Europe's ICT markets. Representing 44% of the market's total value in 2008, telecom services and equipment sales' weight in the equation has nevertheless been shrinking for several years, dropping by -1.5 points since 2005. As the markets have matured – especially mobile (with a density of over 120%) and to a lesser extent broadband – growth rates have naturally declined. Growth in the services segment has gone from over 10% at the start of the decade to around 7% in 2003-2004, then down to roughly 3.5% the three following years, before slipping again to around 2% in 2008.

… but other segments gaining prominence

IT markets have slightly increased their weight in the equation over the past few years. They are the ones that have undergone the greatest revival since the bubble burst in 2001, and growth in 2008 is estimated at around 4%. As in the United States, the highest increases we are seeing are in services and software, while the hardware market is still suffering the repercussions of price wars. One of the reasons for this and, more generally, for the resilience of IT investments is the strategic importance these technologies now have in the management and integration of business processes in both companies and government agencies.

The weight of media markets in the equation has been increasing slowly but steadily over the years, not only TV services but also consumer electronics equipment. These two segments combined still account for only 18% of the ICT market as a whole, but they did enjoy close to 5% growth in 2008. The TV services market continues to be sustained by ad revenue but there was a shift in the balance between the market's three sources of income: licensing fees, advertising and pay-TV subscriptions. Meanwhile, the consumer electronics segment benefitted from the growing popularity of flat screen televisions.

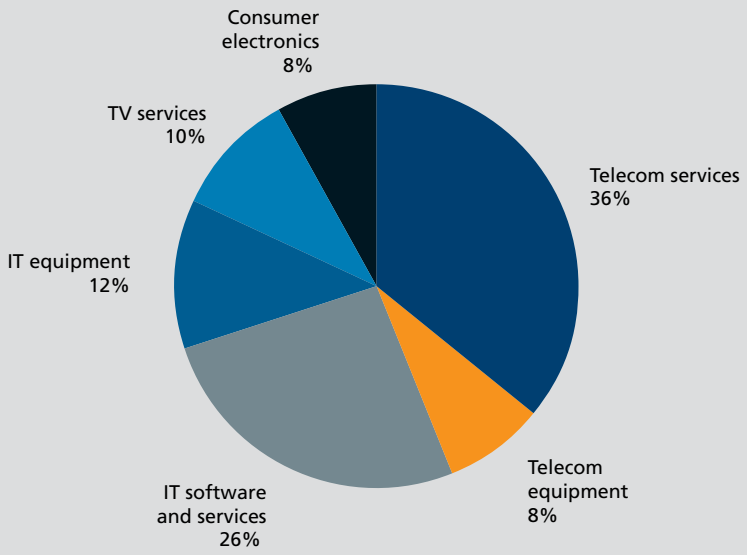
DigiWorld markets in Europe

(billion EUR)	2005	2006	2007	2008
Telecom services	299	310	321	328
Telecom equipment	63	65	67	69
IT software and services	200	212	227	239
IT equipment	98	101	104	107
TV services	74	79	83	87
Consumer electronics	62	65	69	72
Total	797	831	872	902

Source IDATE

Large telecom markets…

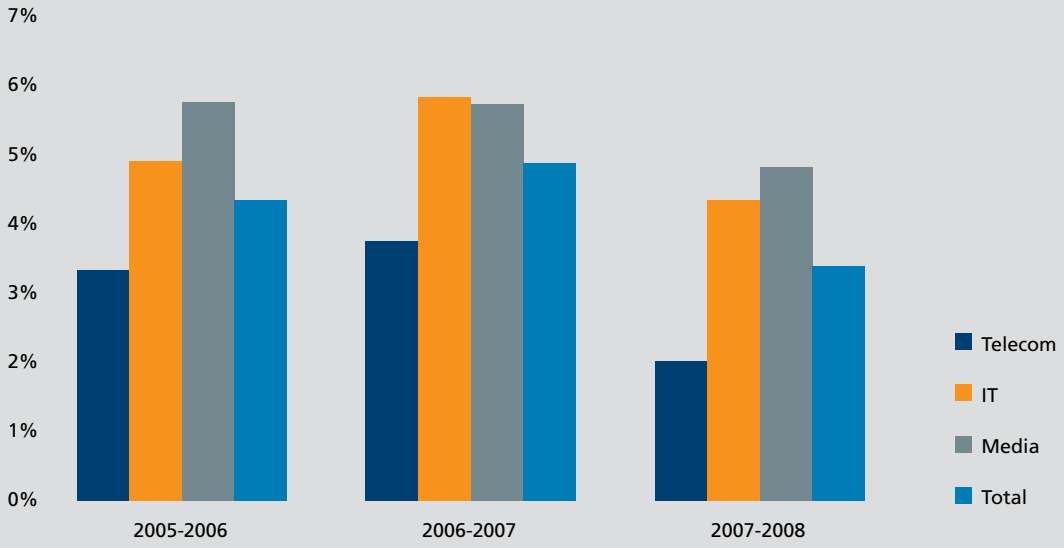
Breakdown of DigiWorld markets in Europe by segment, 2008



Source IDATE

… but a sluggish momentum

Annual growth of DigiWorld markets in Europe, by segment



Source IDATE

DigiWorld markets in Asia-Pacific (1-2)

Advanced markets struggling

If growth was down in 2008 in Asia-Pacific as it was everywhere else in the world, the average growth rate for the region as a whole was still above 6%. This overall momentum includes massive disparities in the way mature markets (notably Japan and South Korea) and emerging ones (China and India, as well as smaller countries that are also thriving) are performing.

Four countries account for 80% of the regional total

With sales estimated at just over 680 billion EUR in 2008, the Asia-Pacific region represents a quarter of the world's ICT market. Japan alone concentrates almost 40% of sales in the region, well ahead of China (23%). Along with South Korea on the one side and India on the other, the zone's four main markets account for around 80% of the regional total.

As indicated earlier, the growth momentum varies a great deal between these four countries. Growth in Japan has been meagre for several years now. In 2008, Japan's telecommunications market even declined in value, and growth for all ICT segments combined was virtually nil. The momentum in South Korea has been somewhat healthier, but is slowing as well: the average rate of growth in the telecom services segment, for instance, has gone from around 3% between 2003 and 2007 to 1.5% in 2008. In both these countries, it is the high equipment rates that automatically limit growth potential, even if they continue to be very dynamic when it comes to innovations in the areas of applications and consumption.

Japanese and South Korean laboratories

In a number of ICT segments, Japan and South Korea have an edge over many other industrialised countries. In the arena of telecommunications in particular, they boast the largest 3G customer bases: with a combined total of 120 million subscribers at the end of 2008 (85% of Japan's mobile customer base and 75% of South Korea's), they are home to close to two-thirds of 3G users in the world. In the area of high-speed Internet access as well, the FTTH-FTTB rollout plan launched by NTT has resulted in over 13 million ultra-fast broadband homes in Japan as of mid-2008, while South Korea was reporting a base of six million ultra high-speed subscribers at that time. In both countries, this section of the user base accounts for more than 40% of their broadband subscribers.

In more general terms, the e-Japan programme that was set up in 2001 helped usher in the digital age, and was followed in 2005 by a new programme called u-Japan, the "u" standing for ubiquitous, as well as universal, user-oriented and unique. In South Korea, the u-Korea programme focuses on eight new services and applications –– including the local version of WiMAX called WiBro, as well as DMB and RFID – all aimed at accelerating development in key economic sectors.

Finally, in the television market, while regulatory issues have delayed the launch of TV over DSL services, Japan and South Korea have been particularly active in digital terrestrial TV broadcasting, deploying networks that include high definition TV services.

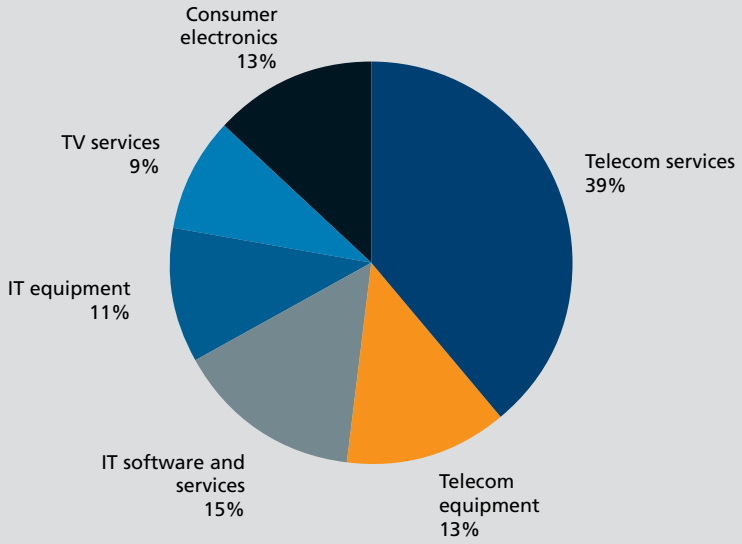
DigiWorld markets in Asia-Pacific

(billion EUR)	2005	2006	2007	2008
Telecom services	220	236	250	261
Telecom equipment	65	70	81	88
IT software and services	85	91	99	105
IT equipment	64	67	72	77
TV services	51	53	56	60
Consumer electronics	73	79	83	90
Total	558	596	641	681

Source IDATE

Telecom markets dominate…

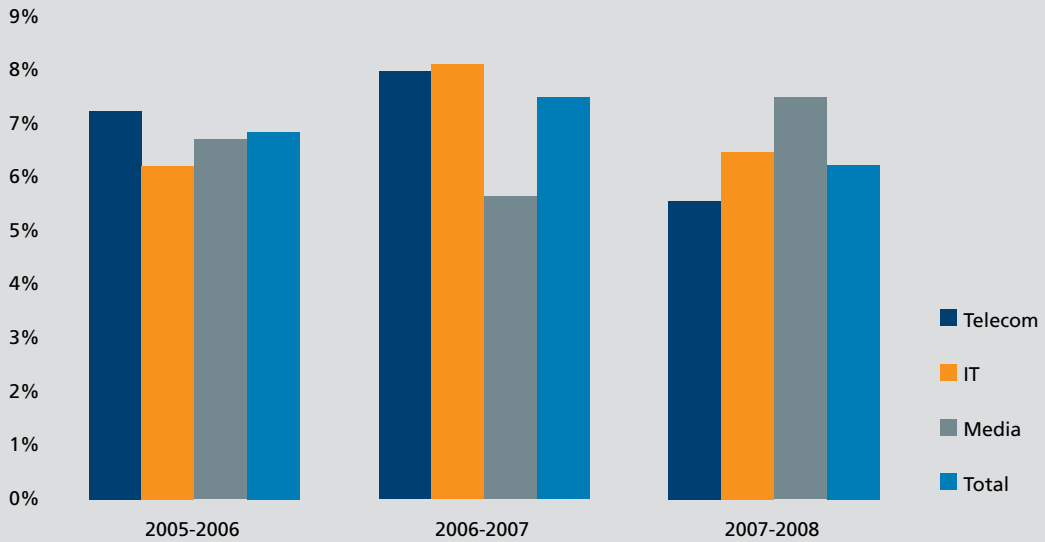
Breakdown of DigiWorld markets in Asia-Pacific by segment, 2008



Source IDATE

… and a still healthy momentum overall

Annual growth of DigiWorld markets in Asia-Pacific, by segment



Source IDATE

DigiWorld markets in Asia-Pacific (2-2)

Emerging countries muscling through

China and India driving growth…

It is in the region's emerging markets that we find the DigiWorld's chief growth pools. China continues to equip itself at a frenzied pace: 100 million new mobile customers signed up in 2008 – bringing the country's base to over 630 million users at the end of 2008 – as did 18 million new broadband subscribers. The world's largest mobile user base for more than seven years now, China is well ahead of the number two market, India – which overtook the United States in 2008. The two countries combined were home to close to a billion mobile customers at the end of 2008, or a quarter of the world base. By the end of 2008, China had also become the world's largest broadband base, with a little over 82 million connections, just ahead of the United States. India is well behind in this area, with a base of 5.5 million broadband subscribers.

China is also home to 140 million pay-TV subscribers (76 million in India), chiefly via cable. It is the country's IT industry in particular that is developing – populated by companies that are now powerhouses on the international stage (Lenovo, Founder Group), alongside its telecoms (Huawei, ZTE…) and consumer electronics heavyweights.

The Indian industry focused initially on IT services, and chiefly software and call centres. The country's telecom services sector especially has grown over the past three years, spurred by government initiatives aimed at opening up the economy: the ICT industry's development in India has long been hampered by bans on foreign investment and by the lack of infrastructure (roads, electricity, and telecommunications).

The value of these markets nevertheless remains disproportionately low compared to their size. At around 200 billion EUR in 2008, they account for only 7% of the global market. This is due in part to the fact that ARPU levels for mobile services, for instance, are particularly low and continue to drop as customer bases grow. Mobile ARPU in China topped out at 7.40 EUR a month in 2007, and decreased by more than 5% in 2008 while, over in India, it was only just over 6 EUR in 2007 and dropped by 10% in 2008.

The exceptional momentum in these countries nonetheless makes them driving forces in the global market, with China's ICT market growing by 10% in 2008 and India's by 20%. Combined, they contributed close to 20% of global market growth, and 60% of that of the Asia-Pacific region.

… and now joined by other emerging economies in the region

Finally, behind these mammoths come a number of other emerging countries in the Asia-Pacific zone (such as Vietnam, Indonesia, the Philippines, Pakistan as well as Malaysia and Thailand), contributing more and more to DigiWorld market growth in the region. These countries combined account for only 15% of the zone's telecommunications market but, with average increases of 20% in 2008, they contributed more than 40% of the region's growth. Equipment rates in particular grew at a remarkable pace in some of these countries, and have reached levels close to what we find in advanced markets. Mobile density is now nearly 70% in Vietnam, and around 90% in Malaysia and Thailand.

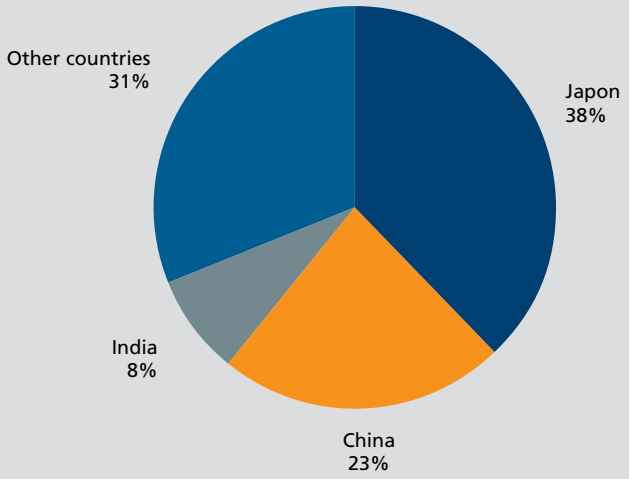
Geography of DigiWorld markets in the Asia-Pacific zone

(billion EUR)	2005	2006	2007	2008
Japon	247	251	255	257
China	113	127	142	159
India	30	38	46	55
Other countries	168	180	198	211
Total	558	596	641	681

Source IDATE

China gaining weight…

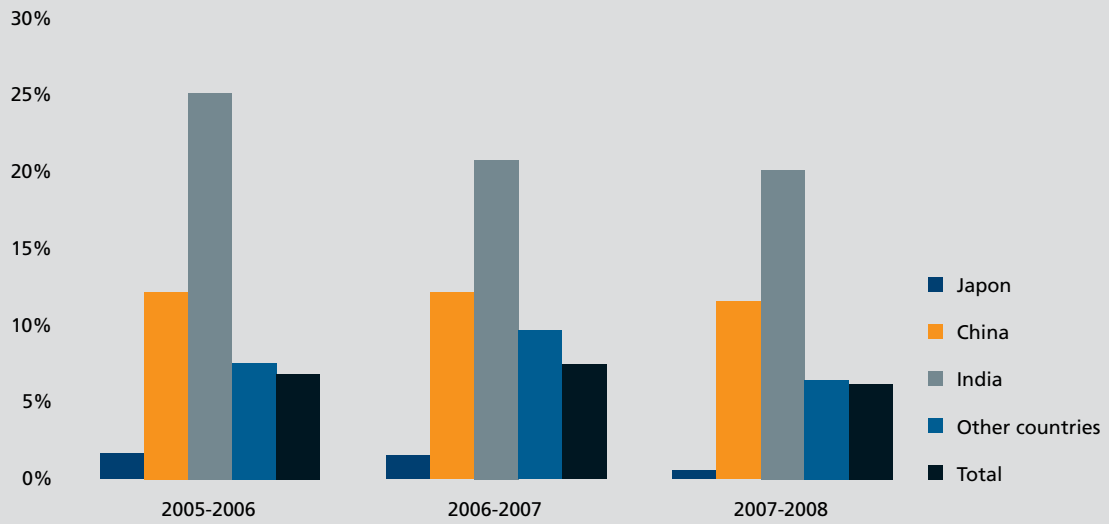
Breakdown of DigiWorld markets by country in Asia-Pacific, 2008



Source IDATE

… and India gaining growth

Annual growth of DigiWorld markets in Asia-Pacific, by country



Source IDATE

DigiWorld markets in Latin America

With an estimated value of 194 billion EUR in 2008, Latin America's DigiWorld markets account for just over 7% of the global total. Although suffering a decline as is the case everywhere else, growth in the region has nevertheless remained steady at 10%.

Fairly ubiquitous mobiles…

The financial crisis of 2001-2002 was quickly overcome and already in 2003 the region's ICT markets were on the rebound. The heavyweights are Brazil and Mexico which together account for two-thirds of the regional market. In the telecom sector, mobile services have been particularly dynamic, with a base of over 420 million customers in Latin America at the end of 2008, or an average density of 76% – and relatively evenly distributed across the region. Among the notable exceptions are Argentina, with a mobile density of over 100% and, at the other end of the spectrum, Cuba with less than 2%. In terms of value, mobile services account for 57% of the telecom services market's revenue.

… but very uneven broadband access footprints

Digital services, and IP services in particular, are making strides in both business and consumer markets. The deployment of these new services nevertheless remains constricted by infrastructure levels and the solvency of demand. Nonetheless, things have been picking up in recent times. At the end of 2008, Latin America was home to 26 million broadband subscribers: with a density of close to 5%, it leads the world's emerging regions. Unlike with mobiles, however, there are still vast disparities from country to country: Chile and Argentina are better equipped than average, the average being represented by several large countries including Brazil, Mexico and Venezuela, while a number of the smaller Central American nations have broadband equipment levels of below 1%.

Public policies aimed at closing the digital divide appear to be a now crucial mechanism needed to either kick-start or assist network rollouts, depending on the current situation, and to stimulate users' adoption of new offers and technologies, in part through the creation of government services online.

IT represents only 20% of the region's ICT markets and, more significantly, equipment accounts for almost as much as services. The momentum in the services segment has been just as healthy, however, enjoying double-digit growth for several years now.

Contrasting TV equipment levels

The region's television market is a very disparate landscape. First, TV equipment levels vary widely from country to country, depending to a large degree on per capita income, which also varies widely. In Nicaragua, for instance, only 35% of all households are equipped with a TV, compared to over 90% in Argentina and Brazil. The predominant broadcasting mode is terrestrial, with cable available chiefly in the largest cities only, while satellite reception, which is the main digital TV platform in the region is still little developed.

More than 20% of the region's households receive only free-to-air TV, generally broadcast over the terrestrial network. Ad revenue accounts for two-thirds of television's earnings.

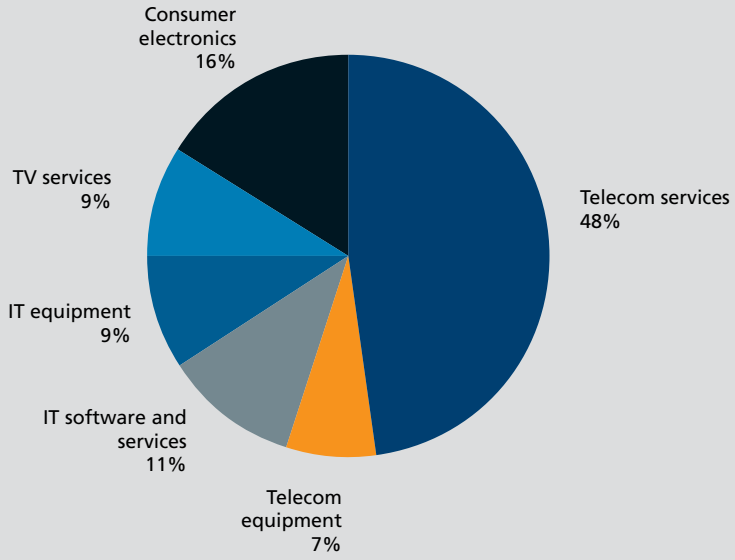
DigiWorld markets in Latin America

(billion EUR)	2005	2006	2007	2008
Telecom services	65	74	85	93
Telecom equipment	10	11	13	13
IT software and services	15	17	19	21
IT equipment	13	14	16	17
TV services	15	16	17	18
Consumer electronics	19	24	28	32
Total	138	156	177	194

Source IDATE

Very unequal segments…

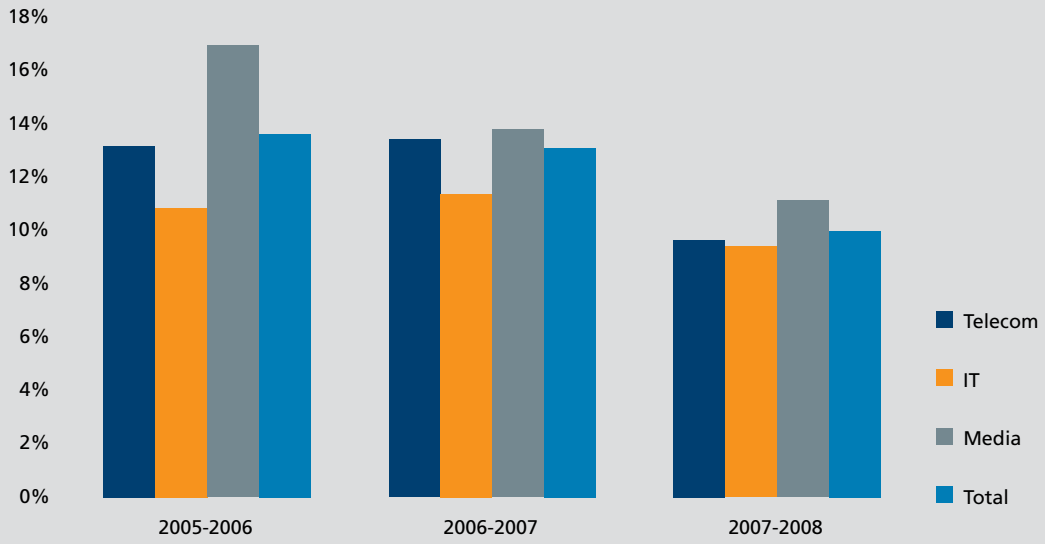
Breakdown of DigiWorld markets in Latin America by segment, 2008



Source IDATE

… but comparable growth rates

Annual growth of DigiWorld markets in Latin America, by segment



Source IDATE

Vast disparities

DigiWorld markets in Africa and the Middle East

The DigiWorld markets in Africa and the Middle East combined are estimated at 123 billion EUR in 2008. Accounting for 4.5% of the global market, this is the region that has recorded the highest growth in recent times. What stands out the most, however, are the massive contrasts between North Africa and the Middle East, which have been engaged in vast equipment and market liberalisation programmes for a decade, and sub-Saharan Africa where ICT have made few inroads, with the exception of South Africa.

Mediterranean countries and the Gulf States lead the way

On the whole, the region's seven northernmost countries are much more advanced than the rest. Israel stands out from the other countries for having a level of ICT development equivalent to what we find in large Western nations: a fixed telephone density of close to 50%, over 28% for broadband and a mobile density of over 140%. In terms of value, average spending per capita on telecommunications there is 535 USD a year, comparable to the European Union average of 558 USD. Israel's television market is also comparable to European models with a wide selection of TV channels and a programming market that is open to foreign companies, added to which cable and satellite reception are relatively well developed.

There are a few small countries in the region where telecom spending levels are in the same range: the United Arab Emirates with over 730 USD a year, Kuwait and Bahrain with roughly 500 USD annual spending per capita. From a more general perspective, mobile density levels in the region are relatively high: an average of 68% at the end of 2008, and above 50% everywhere except Yemen (25%) and Syria (38%).

Sub-Saharan Africa still lagging very far behind

In sub-Saharan Africa, on the other hand, equipment levels remain very low and, with the exception of mobile telephony, the situation is evolving only slowly. Even South Africa – which stands out as an exception in the region and has a large mobile customer base – still lags behind when it comes to fixed telephony (barely 10 lines per 100 inhabitants) and broadband access (2 connections per 100 inhabitants). Its fixed network infrastructure is much more developed than in other countries in the region where telephone density is only just over 1% and broadband density does not even nudge 0.03%, which translates into an estimated 200,000 broadband connections in the entire region at the end of 2008.

A great many projects that have been announced over the past several years, including the deployment of new undersea cables, are beginning to come to fruition and should help expand the footprint of the technologies aimed at reducing the digital divide.

For now, however, mobile is the prime driving force, with a base that has increased by a factor of 10 in five years and is close to 20 times larger than the landline base: 230 million cellular customers at the end of 2008, compared to 12 million fixed lines.

Finally, in the Middle East-Africa region, television services are organised chiefly around public channels. There are still very few private terrestrial channels and it is chiefly the, rapidly developing satellite sector which is enabling a more diversified selection.

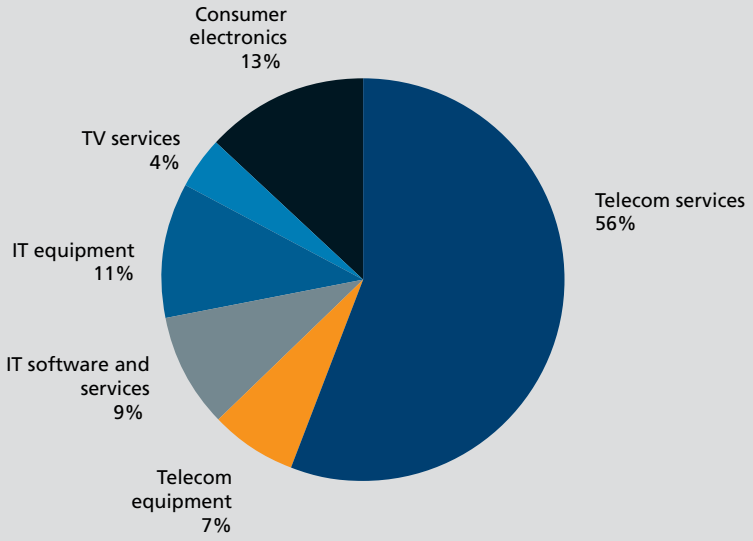
DigiWorld markets in Africa-Middle East

(billion EUR)	2005	2006	2007	2008
Telecom services	38	47	59	69
Telecom equipment	6	7	8	9
IT software and services	8	9	10	11
IT equipment	9	10	12	13
TV services	4	5	5	5
Consumer electronics	10	13	15	16
Total	76	91	109	123

Source IDATE

Telecom services make up the core market…

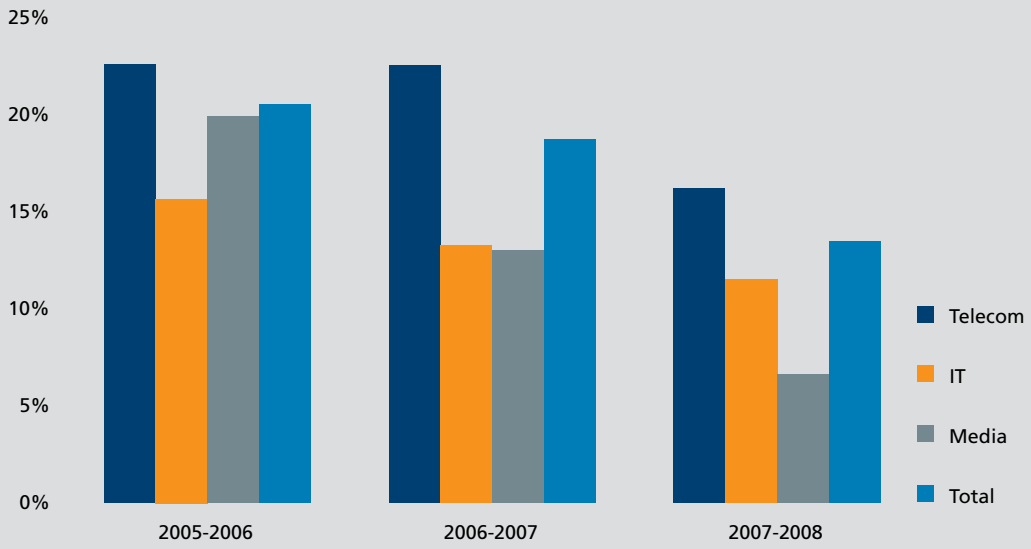
Breakdown of DigiWorld markets in Africa-Middle East by segment, 2008



Source IDATE

… and still spurring growth

Annual growth of DigiWorld markets in Africa-Middle East, by segment



Source IDATE

IV Access

Connecting to the DigiWorld: pressing need to invest

Spread of broadband and onset of ultra-fast broadband

The same number of new broadband subscribers signed up last year as in 2007 (+67.5 million), bringing the global base to 415 million at the end of 2008.

The broadband density in industrialised countries is consistently close to, or over, a quarter of the population (at 24%, Japan ranks near the bottom alongside the United States) and is even closer to 30% in several countries (South Korea, Hong Kong, New Zealand). Figures for emerging countries are naturally much lower: 7.3% broadband density in Malaysia (the highest in the group), 6.3% in China, only 2% in Thailand and Vietnam, and a mere 0.5% in India.

Still sitting on sizeable growth pools, the global base doubled in three years and is expected to continue to expand. Developing countries are still reporting fewer than three broadband subscribers per 100 inhabitants at the end of 2008, compared to a little over 22 in industrialised countries. The number of broadband subscribers in Asia at the end of 2008 is estimated at 159 million, of which 62 million in industrialised countries and more than 82 million in China, in other words over half of all the subscribers located in developing countries. There are now more broadband customers in China than there are in the United States, while other developing countries are making real strides in that area as well – notably Brazil (an estimated 10.5 million subscribers at the end of 2008), Russia (6.3 million), Mexico (just over 6 million), Turkey (close to 6 million) and India (5.5 million).

Mobile broadband taking off

With 3G data traffic having doubled in most Western European countries, operators appear to have finally found the right formula to woo consumers, based on open access to the Web.

Although the model is far from the one initially planned, namely a walled garden of applications controlled by the operator, the success of data card offers and later USB dongles and, more recently, access offers bundled with a netbook are paving the way for a second round of fixed/mobile substitution, this time for data services. The aggressive price points chosen for these offers (35 EUR in France, 35 GBP in the UK for 1 to 3 Gb of monthly traffic) and for the netbooks associated with them, are putting them head to head with broadband DSL and cable model solutions for classic applications, namely Web browsing and e-mail, even if they still do not yet include voice over IP (VoIP). The success of these mobile broadband offers over netbooks is such that mobile operators appear to have overcome their fears that data offers on smartphones would cannibalise their revenue – these devices being, by and large, confined more than ever to high-end business users.

New access to networks

The mobile broadband market's emergence will bring with it deep-seated changes in the range of subscribers' network access equipment. While the iPhone confirmed its popularity in 2008 – after having generated a lot of buzz even before it was released and helping to revive the smartphone segment – the outstanding trend this past year was no doubt the surge in the popularity of USB dongles and especially of netbooks which accounted for 30% of consumer laptop sales in Q4, and proving particularly popular in Europe (60% of world sales). The latest generations of these machines are equipped with features that rival laptops, operating on the Wintel platform and boasting storage capacities of over 120 Gb, for a price that is close to half that of a comparable laptop, thanks to operator subsidies, and even being offered for free with two-year contracts in the UK.

While the phenomenon is less spectacular in terms of volume, we are also seeing a growing number of offers that include mobile Internet devices which are halfway between

a netbook and a smartphone. They are produced by integrators but carry the distributing operator's logo; their value is still not obvious for consumers given that they offer a user experience similar to a smartphone, but with a much bulkier device.

Difficult first steps for convergence

The growing ubiquity of fixed and mobile broadband connections has not gone hand in hand with the rise of the first generation of fixed/mobile convergence solutions. Although the Orange Unik offering has met with some success, especially amongst business customers, shifting strategies do reveal the trouble these offers are having to differentiate themselves from the growing number of high volume fixed VoIP solutions and the homezone services being marketed by mobile operators looking to capture as much calling traffic as they can. Cases in point here include BT with its Fusion offer, and Deutsche Telekom which has changed tack and now favours T-Mobile's fixed/mobile substitution offer in Germany. The few new solutions that include equipment, such as T-Mobile@home or Sprint Nextel's Femtocell offer in the United States, have attracted more attention but are more akin to enhanced fixed/mobile substitution services than actual convergence offers.

The networks: source of value or necessary evil?

Even more than the economic downturn, it is structural pressures – namely advanced markets reaching peak saturation, and very low ARPU in emerging markets – along with regulatory measures to a lesser degree, which are bringing back to the fore the issue of control and ownership of the telecom network infrastructure.

As shown by the growing number of agreements being signed around Europe, and especially in the UK, for sharing passive and active 3G infrastructure, operators are working above all to bring down their network costs at a time when revenue generated by services is stagnating. There were fewer announcements of active infrastructure outsourcing in Europe in 2008 than there were in 2007, but a number of major operators are still examining it as a strategic option.

In emerging countries such as India, which are helping to sustain overall growth in the DigiWorld, sharing towers and outsourcing access equipment, namely base stations, is now the norm – with five of the country's top six mobile operators using both solutions – and the basis of a swift development model for mobile telephony built on per-minute billing and very low ARPU.

As for fixed networks, the crisis in financial markets threw a chill on voluntary attempts at structural separation by some telcos, based on audacious financial engineering and widely available low-interest loans. We are nevertheless seeing some outsourcing contracts for certain portions of fixed networks being signed by major carriers, such as BT for its international backbone.

Investing in access: mad dash or forced march?

Still, at a time when broadband market competition is heating up, and given the premium tied to mobility, fixed operators are feeling forced to continue their fibre optic network rollouts despite the recession and the ongoing uncertainties weighing on large-scale deployments. This forced march towards ultra-fast broadband access despite the current climate will likely spur the emergence of new forms of (passive and active) infrastructure sharing, new means of financing and sharing the revenue generated by access between operators and no doubt other players outside the telecom ecosystem (local authorities, property managers). In the short term, these arrangements will be crucial to achieving a reasonable return on investment, even in those areas most propitious to ultra high-speed rollouts.

Although the success of 3G data services has been very recent and less money is being spent, mobile operators will not be spared the need to make sizeable investments as the flat rate model that has secured the popularity of these solution cannot last, and cannot be extended to a substantial portion of the mobile user base unless the switch to LTE is made. As with fixed networks, these deployments will be subject to mutualisation and possibly outsourcing arrangements to help the players generate even greater economies of scale.

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Battle of the upstarts

Fixed telephony

Decline getting steeper

Around the globe, fixed telephony continues the decline which it began back in 2002, and at an ever faster pace. The market dropped in value by more than 5% in 2008 as a result of both a nominal effect (an annual drop of between 4% and 7% in the average revenue per line since 2004) and a real effect (slow decrease in the number of lines since 2006). In terms of value, fixed telephony's share of the global telecommunications services market has gone from 48% in 2001 to 27% in 2008.

In industrialised countries, the growing use of mobile and of broadband access services has led to a decrease in the number of fixed phone lines. An increasing number of households are equipped with only a mobile phone while many customers cancelled their second line when subscribing to a broadband service over DSL or cable.

In developing economies, the base of fixed lines has been growing at an increasingly slower pace over the past several years. The landline telephony market is being liberalised in more and more countries, but at a time when mobile is gradually dominating the landscape, making it harder for new operators to come onto the market. If the overall density, fixed and mobile combined, in developing countries did triple in five years – going from 20% at the end of 2002 to close to 61% at the end of 2007 – this is due primarily to the growing number of mobile customers (see next section). It should also be pointed out that a portion of the increase in fixed lines has been based on the development of offers that only allow calls within a certain zone, especially in India and China.

Drop in average revenue per line

In all advanced economies, the average revenue earned per fixed line has decreased, since a portion of voice traffic has moved over to mobile phones and calling prices continue to drop – neither of which have been offset by an increase in fixed subscription rates, an increase in traffic or the development of value-added services. The growing popularity of bundled offers and limited or unlimited flat rates being marketed by operators in a bid to secure customer loyalty, has meant even lower rates as the price of each service in the bundle decreases.

VoIP development picking up steam

Incumbent carriers are responding to the development of VoIP by rolling out their own offers as part of bundled solutions that combine Internet access, telephony and/or TV services. They are also having to compete with newcomers to the telecom market such as Google, Yahoo! and eBay. The revenue earned per calling minute is decreasing even faster as the use of VoIP spreads. With the rise in subscription prices, the adoption of these formulas tends to increase the contribution being made by income that is not tied to the volume of calls, and so transforming the fixed telephony market into an access market. In industrialised countries, the development of IP telephony is a foregone conclusion even if its prominence still varies considerably depending on a country's competition structure. In any event, the rise of fixed VoIP appears to be telcos' last stand against the complete replacement by mobile of landline calling.

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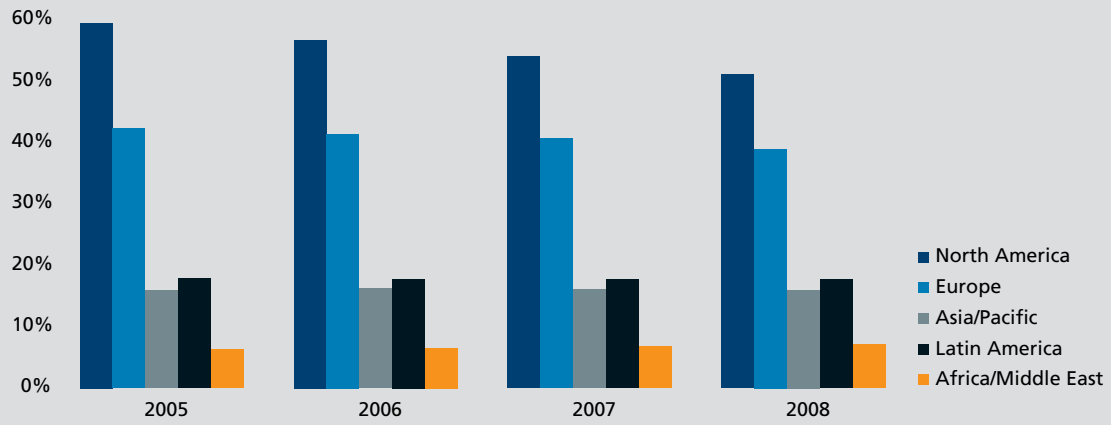
Fixed telephone lines worldwide

(millions)	2005	2006	2007	2008	2009	2012
North America	196	188	181	173	168	161
Europe	325	319	314	301	295	274
European Union	244	236	228	214	207	182
France	33	32	29	26	24	16
Germany	55	55	54	52	49	44
Italy	28	27	26	25	24	20
Spain	23	22	22	20	21	20
United Kingdom	34	34	34	32	30	27
Russia	40	42	45	46	47	50
Asia Pacific	573	594	591	595	602	620
China	350	368	365	362	359	351
India	49	40	39	38	38	36
Japan	67	64	60	58	55	50
Latin America	96	97	98	99	99	99
Brazil	40	39	38	37	36	32
Africa & Middle East	63	67	71	76	80	93
Total	1 254	1 266	1 254	1 243	1 243	1 248

Source IDATE

Switched telephony dwindling in all advanced markets…

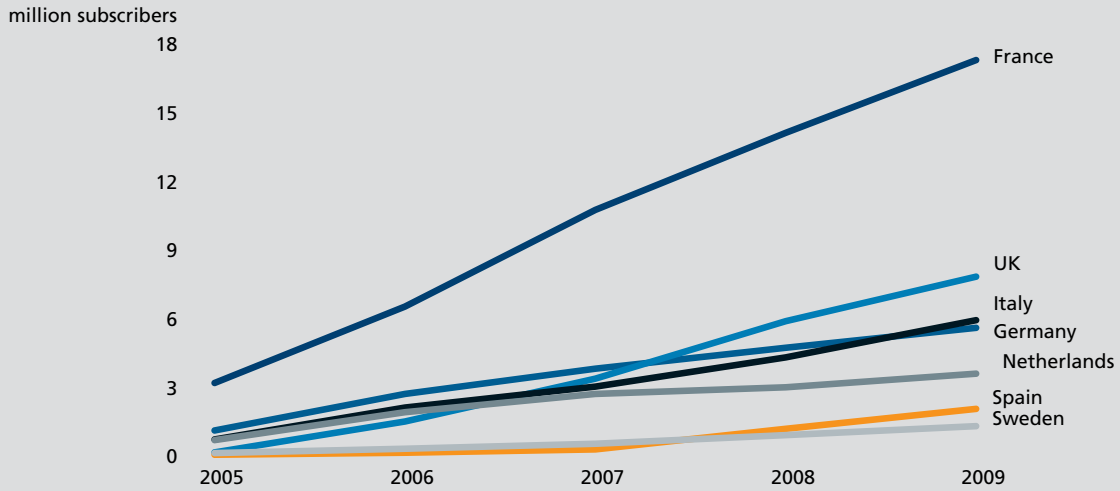
Fixed telephone density



Source IDATE

… and being replaced by VoIP

VoIP subscriber growth in the main European markets



Source IDATE

In search of growth outlets

Mobile telephony

We estimate that, at the end of 2008, close to half of the world's population had a mobile phone. In terms of density, expressed as the number of customers per 100 inhabitants, Europe ranks highest with an average rate of 120%. The density in North America is considerably lower, at 87% at the end of 2008, which is due in part to the lack of prepaid offers and, by extension, of users with several phones. ARPU, on the other hand, is higher than in Europe.

China and India buoyed by massive volume

There were an estimated 1.7 billion mobile customers in Asia at the end of 2008: the base in the Asia-Pacific region grew by 320 million new customers over the course of the year, accounting for close to 60% of the total increase worldwide. With close to one billion subscribers for China and India combined, these two countries constitute sizeable growth pools. Both of their mobile customer bases grew by 100 million in 2008, or by an average eight million new customers a month. The pace could hold up in India but, with a density of close to 50% now, the growth rate in China will no doubt start to diminish gradually.

Mobile services market growth down by 4 points in 2008

Mobile services have accounted for over half of telecom services' consolidated revenue worldwide since 2006 – and for an estimated 54% in 2008. The mobile market's growth depends on the increase in customer bases, which grew by close to 17% in 2008. At the same time, the average revenue per user (ARPU) has been dropping steadily, totalling 17.50 USD a month in 2008, but varying widely from one region to the next. Despite the impact of the huge volumes involved, mobile market growth dropped by more than four points in 2008, due to a decline in voice ARPU which has been hard to offset in advanced markets with income from multimedia services, and which is an automatic consequence of the growing customer base in emerging markets,

In mature mobile markets that are nearing saturation, starting with Europe, mobile operators are facing two major challenges: maintaining ARPU and customer numbers. To uphold their ARPU levels, operators are banking on the development of multimedia mobile services. To improve customer loyalty and keep churn levels down, they are working on strategies to keep existing customers and to win back those that switched to the competition. These are often costly strategies – customer loyalty costs can be as high, if not higher, than customer acquisition costs – but are the price to pay to maintain their positions in markets whose momentum is slowing.

Market (re)concentration

Consolidation is another means for operators to improve their growth margins. We have been seeing a particularly marked concentration trend in the United States around AT&T/Cingular Wireless and Verizon Wireless, while also witnessing various forms of clustering in Europe: in the Netherlands with KPN's takeover of MVNO Debitel, and to a greater extent in Denmark where MVNOs' market share plummeted from 26% to 7% in a year and a half as a result of takeovers.

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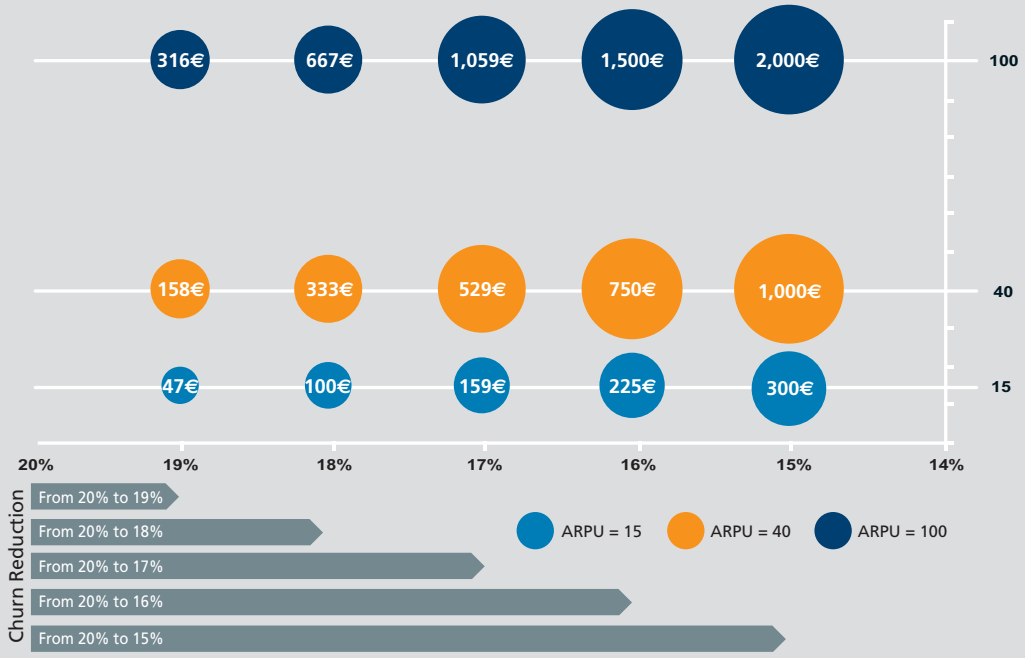
Mobile customers worldwide

(millions)	2005	2006	2007	2008	2009	2012
North America	225	252	277	294	311	358
Europe	692	802	889	938	970	1 036
European Union	477	527	581	614	628	667
France	48	52	55	57	59	64
Germany	79	86	97	105	107	115
Italy	72	81	90	92	94	97
Spain	43	47	48	52	54	57
United Kingdom	69	72	76	77	78	82
Russia	126	156	174	187	193	203
Asia Pacific	820	1 058	1 363	1 686	1 927	2 536
China	374	444	532	632	709	915
India	76	150	234	339	437	704
Japan	90	95	101	107	113	126
Latin America	232	296	362	426	470	557
Brazil	87	101	122	149	165	197
Africa & Middle East	188	272	380	475	546	715
Total	2 157	2 679	3 272	3 819	4 223	5 202

Source IDATE

Increasing value by decreasing churn

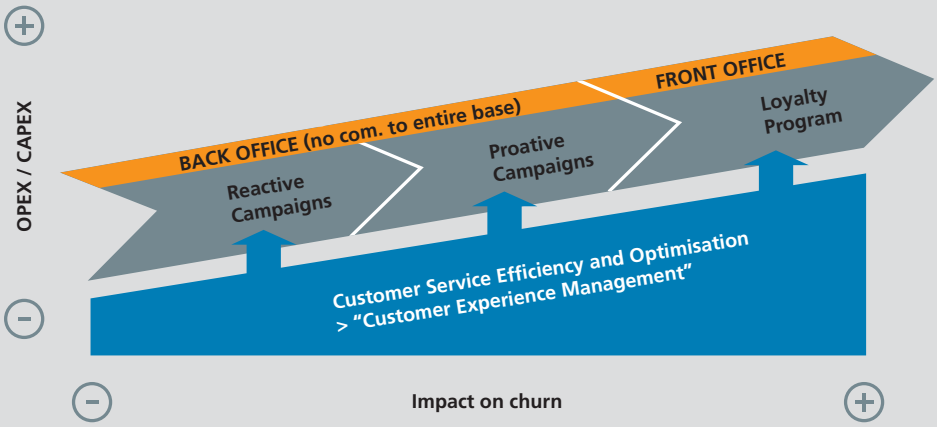
Variation in customer value according to ARPU and churn reduction



Source IDATE

Moving to full service strategies

Customer loss prevention strategies



Source IDATE

Still room for development

Fixed broadband

The broadband access market has undergone remarkable growth, with the number of connections worldwide estimated at 415 million at the end of 2008, or 67.5 million more than the year before and growing at around the same rate as in 2007. At the end of 2008, close to three-quarters of all Internet connections in the world were high-speed connections.

Still sitting on sizeable growth pools, the global base doubled in three years and is expected to continue to grow. Developing countries are still reporting fewer than three broadband subscribers per 100 inhabitants at the end of 2008, compared to a little over 22 in industrialised countries. Numbering 82 million, there are now more broadband customers in China than there are in the United States. Next in line are Japan, the largest European markets (Germany, France, the UK) and South Korea, while a number of developing countries are now home to a sizeable broadband base as well, including Brazil (an estimated 10.5 million subscribers at the end of 2008), Russia (6.3 million), Mexico (just over 6 million), Turkey (close to 6 million) and India (5.5 million); all still have room to grow as the highest broadband density in any of these countries in 8%.

DSL still the dominant technology

DSL has been the prime driving force behind the broadband market's development in Europe, accounting for over 80% of all connections, on average, at the end of 2008. It is the most widely used access technology in all European countries, including those where cable was long the predominant mode (the UK, the Netherlands and Portugal). Competition has also intensified considerably over the past few years, thanks in particular to unbundling. Triple play bundles are increasingly available across the board, at least in Western Europe, and fuelling the rising popularity of VoIP and IPTV services. DSL also remains the dominant access technology in the Asia-Pacific region where cable has never made much of a dent. FTTx connections (FTTH and FTTx + VDSL/LAN/Ethernet), on the other hand, are steadily increasing their market share: in June 2008, 48% of Japan's high-speed subscribers were connected to a fibre optic network (4% via FTTLA), compared to 24% in China and 40% in South Korea. Thanks to government support in the main countries concerned, we are seeing the DSL user base shrink as ultra high-speed, fibre-based networks are being deployed. In the North American market, on the other hand, cable continues to dominate – still accounting for over half of all high-speed connections – although some telcos there have managed to strengthen their position over the past three years thanks to FTTx rollouts.

Growing abundance of offers

Use of the Internet has shot up over the past several years, to the point of becoming a commodity and even a basic service, at least in advanced markets. Five elements in particular helped spur the market's growth from 2002 to 2008: local loop unbundling, lower wholesale tariffs, innovative offers and services, high demand and the growing number of households equipped with a personal computer. The drop in prices combined with enhanced offers (unmetered voice calls, TV, VoD and more) have also contributed a great deal to the growing ubiquity of broadband.

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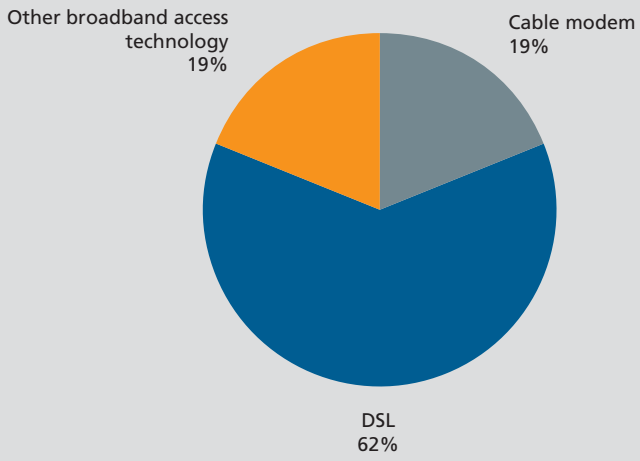
Broadband subscribers around the world

(millions)	2005	2006	2007	2008	2009	2012
North America	53	65	77	89	100	118
Europe	66	89	113	132	149	191
European Union	60	80	99	114	125	148
France	9	13	16	18	20	23
Germany	11	15	20	22	25	28
Italy	7	9	10	11	12	14
Spain	5	7	8	9	10	12
United Kingdom	10	13	16	17	18	20
Russia	2	3	5	6	10	22
Asia Pacific	86	108	132	159	193	339
China	39	52	65	83	105	181
India	1	3	3	6	9	37
Japan	22	26	28	30	32	42
Latin America	9	13	20	26	36	76
Brazil	4	6	8	11	14	30
Africa & Middle East	2	4	6	8	11	24
Total	216	280	347	415	489	749

Source IDATE

DSL still the dominant access technology

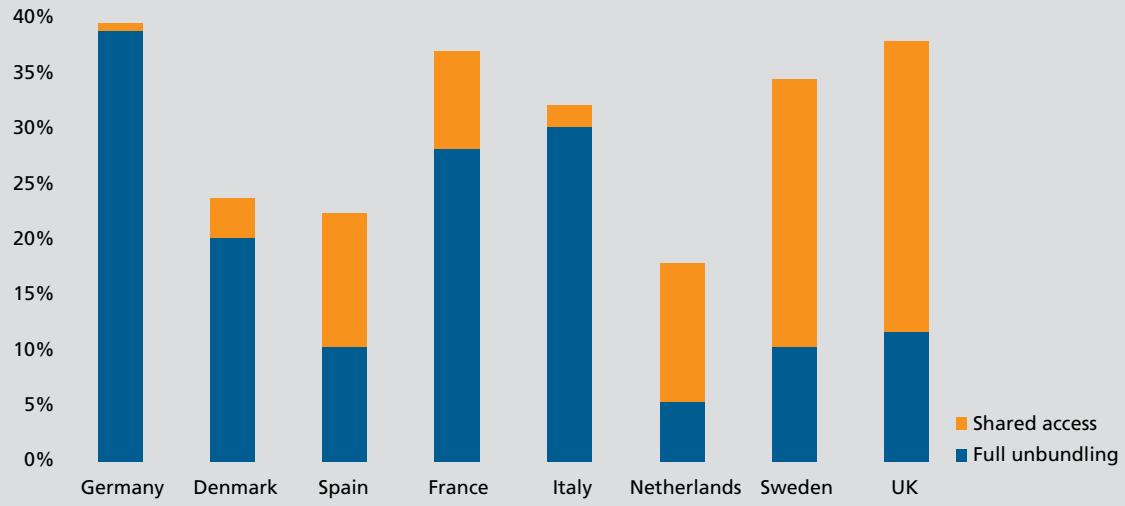
Broadband access around the globe, by technology, end of 2008



Source IDATE

Spread of unbundling in Western Europe

Unbundled lines as a % of ADSL, as of September 2008



Source IDATE

More strategic holdings

Market consolidation

A series of mergers and acquisitions took place between 2004 and 2007 in the telecom services market, which led to the creation of several massive, multinational carriers. The recession naturally had an effect on mergers and acquisitions in 2008, especially from the third quarter onwards. There were fewer deals than in previous months, both in volume and value, due to the combination of the credit crunch and plummeting share prices.

In the United States, growing competitive pressure led to megamergers (see the profile of the USA market in Chapter 3) which reshaped the competition landscape around two fixed and cellular telephony behemoths, Verizon and AT&T.

In Europe, mergers and acquisitions over the past several years no longer involved the market's heavyweights, as was the case on the other side of the Atlantic, but rather medium-size telcos – the only exception being the aborted merger of TeliaSonera and France Telecom. There are several goals behind these smaller operations: increased market share, strategic move towards convergent services, positioning in a market with high growth potential by acquiring a minority stake with an option to increase it later. The many mergers in the broadband sector are revealing about both the maturity of the European market and the curious longevity of a host of small players in certain markets (such as ISPs in Sweden). In the mobile market, mergers and acquisitions involved small, highly targeted operators in a position of weakness (notably MVNOs) and whose customer base would be an beneficial addition for a larger carrier in search of critical mass (KPN).

The Japanese market, meanwhile, has been shaped by two events: first, confirmation that Softbank is rising in the ranks, becoming NTT's chief rival in the broadband and VoIP markets, and entering the mobile market through its takeover of Vodafone KK in 2006 and, second, the new round of frequency allocation which enabled the emergence of new alternative operators with spectrum holdings, such as EMOBILE.

Market consolidation is taking place in developing countries as well, especially in Latin America where heavyweights Telefónica and América Móvil/Telmex are going head to head. In the Middle East/Africa area, several pan-regional companies have developed, such as Etisalat, MIC, MTC, MTN, Orascom, Vodacom/Telkom and Wataniya. In Asia too there are several carriers operating on a regional scale, including Hutchison, SingTel and Telekom Malaysia. In India, however, the Ministry of Telecommunications has limited the possibility of national mergers by putting a ban on any operation that would create a carrier with a more than 40% share of the market, down from the previous cap of 67%.

Shift to new models

The market is expected to be oriented now more to smaller operations, as has been the case in recent months, although not excluding larger deals entirely. Another effect of the crisis is the drop in certain operators' value, which could make them potential prey for a takeover. Several major deals have been postponed or cancelled altogether since the crisis hit, such as the Swedish and Polish governments selling their stake in their national incumbent carrier.

Finally, on the regulatory front, the functional separation of incumbent carriers, through the creation of an entity in charge of managing network infrastructure, as recommended by the European Commissioner for the Information Society and Media as a last ditch remedy, continues to be the subject of much debate across the Old Continent.

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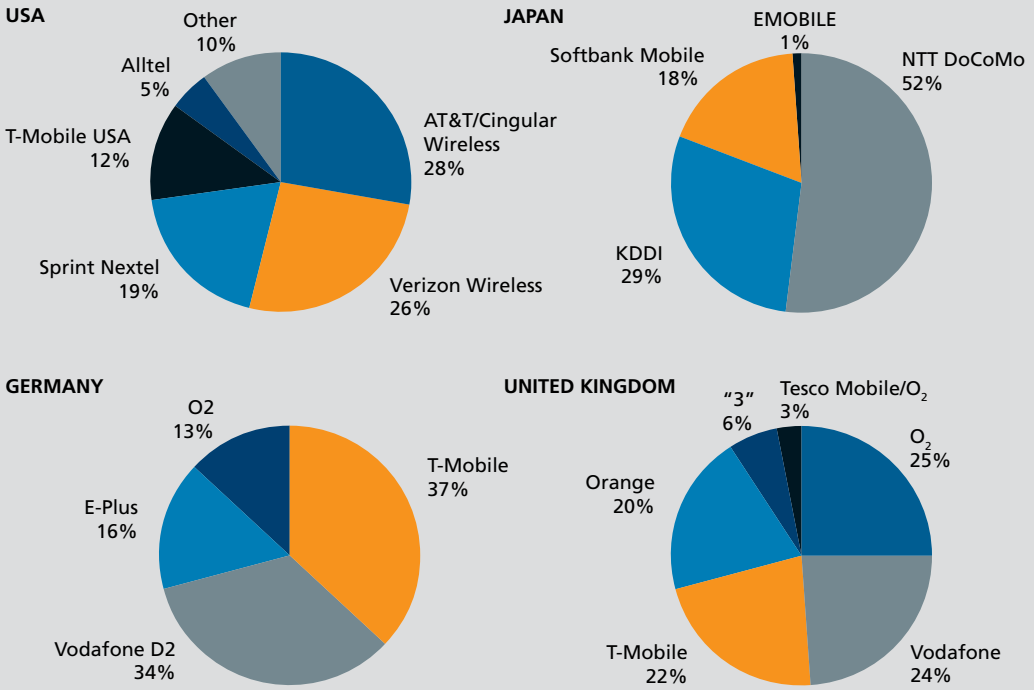
Incumbent carriers' share of fixed telephony service revenue in Europe

	2004	2005	2006	2007
France	72%	69%	70%	72%
Germany	66%	59%	58%	57%
Italy	62%	65%	64%	62%
Netherlands	75%	75%	73%	69%
Poland	96%	90%	81%	78%
Spain	72%	72%	73%	76%
United Kingdom	61%	57%	56%	57%

Source IDATE

Mobile market competition

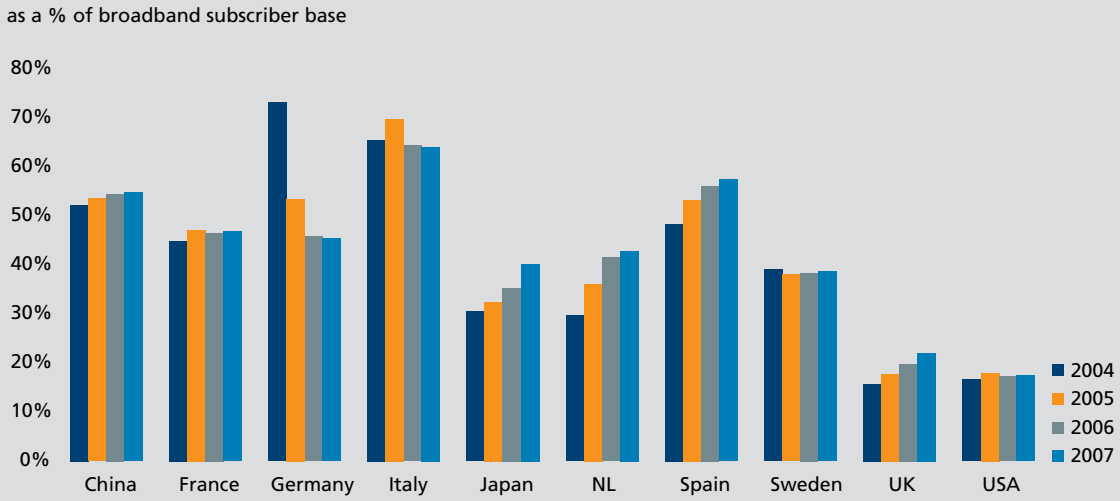
Mobile network operators' market share in the main industrialised countries, as of mid-2008



Source IDATE

Broadband market competition

Incumbent carriers' share of the retail broadband market



Source IDATE

Still sizeable regional disparities

FTTx rollouts

The number of FTTx subscribers around the world rose by 23% between at the end of 2007 and mid-2008. The global FTTx market, which includes FTTH/B, VDSL, FTTLA and Ethernet/LAN, had a base of 41 million subscribers as of 30 June 2008. FTTH and FTTB are still the two main architectures in terms of customers served, accounting for 80% of the global base.

Asia is, unsurprisingly, still home to the largest FTTx market, and especially FTTH/B with 89% of all the world's customers. Japan (14.3 million FTTx subscribers) and South Korea (close to 6 million) remain the largest ultra-fast broadband markets in the world. There are now more FTTH/B subscribers (13 million) in Japan than there are ADSL customers. Asia, and more specifically Hong Kong, is also where the first 1 Gbps subscribers are located.

Nonetheless, despite healthy growth rates and impressive figures, Asia is losing some ground to Europe and North America.

The United States is still the only FTTx market in North America, its subscriber base having grown by around 40% this past year. The subscriber base in the major European markets (see table), grew by 61% in the first six months of 2008, bringing the total base to around 1.3 million in mid-2008 compared to 0.8 million at the end of 2007. There are still sizeable disparities in national markets, however, with Sweden, Italy, France, the Netherlands, Germany and Norway standing out as the pioneers, while others, including Slovenia and Latvia are making real strides. The two countries with the most FTTx subscribers are still Sweden and Italy.

Development of ultra-fast broadband depends on several criteria

In addition to intrinsic national features, national and local policies help explain the various FTTx rollout levels.

A clearly defined government strategy appears to be critical to the development of ultra-fast broadband, either through a dedicated plan, such as South Korea's u-Korea programme, or though involvement in deployments, via energy companies or property managers, for instance, as is the case in Scandinavia. It is, though, the state of the market (high penetration rate, consumers eager for innovative and powerful technical solutions) that truly determine the chances that FTTx has rapid success. From a technical standpoint, the topology of existing telecom networks will influence the choice of ultra high-speed architecture: the length of the copper local loop will determine whether FTTH or FTTN + VDSL is the more obvious choice, for instance. Finally, too, telcos play a central role as they are often the instigators of FTTx rollouts, which they view as a means of diversifying operations to compete more effectively in the marketplace.

Still impediments to the development of FTTH in Europe

Because of the key part that civil infrastructure plays in optical fibre rollouts, it is the target of operators' expectations, especially in Europe with respect to government and local authorities' involvement, specifically their ability to enable operators' access to underground installations and to subscriber premises.

The issues surrounding net neutrality and the role that content providers will play in helping to finance NGA rollouts are starting to become clearer in Europe. The first draft of directives out of Brussels appears to give national regulators the power to resolve potential disputes between NGA operators and content providers.

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FTTx subscribers worldwide (including Ethernet/LAN)

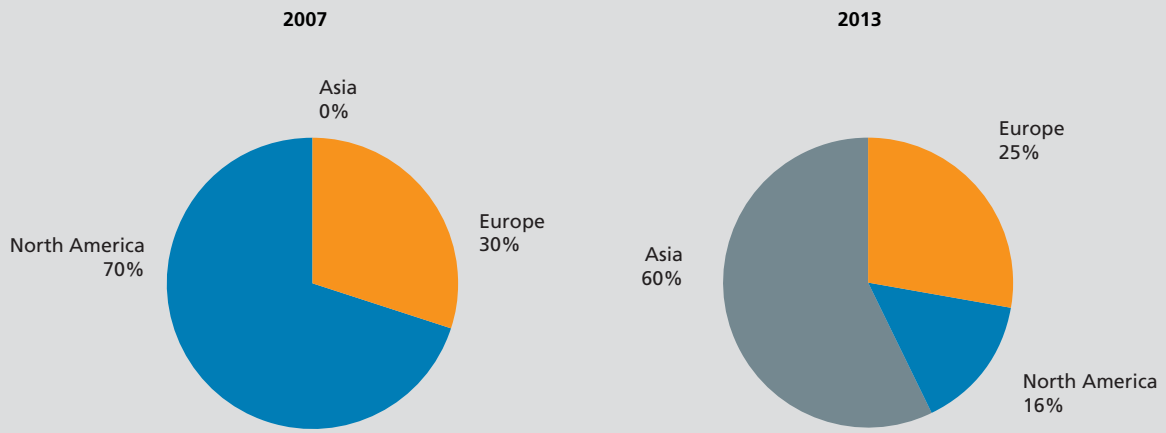
(thousands)		2003	2004	2005	2006	2007	mid-2008
North America							
	USA*	116	160	448	1 035	2 331	3 249
Europe							
	France	0	1	7	14	44	138
	Germany*	0	0	0	20	60	202
	Italy	160	199	233	260	267	297
	Netherlands*	0	50	60	70	95	249
	Spain	2	2	2	2	2	5
	Sweden	194	241	289	300	313	368
	United Kingdom	0	0	1	1	2	2
Asia-Pacific							
	China	2 661	6 311	8 694	13 316	13 680	16 300
	Japan	849	2 435	4 640	7 940	11 329	14 300
	South Korea	910	1 061	1 620	3 400	5 015	5 950
Total World		4 892	10 459	15 994	26 358	33 136	41 057

VDSL included in 2007 and 2008

Source IDATE

Asian operators betting on VDSL

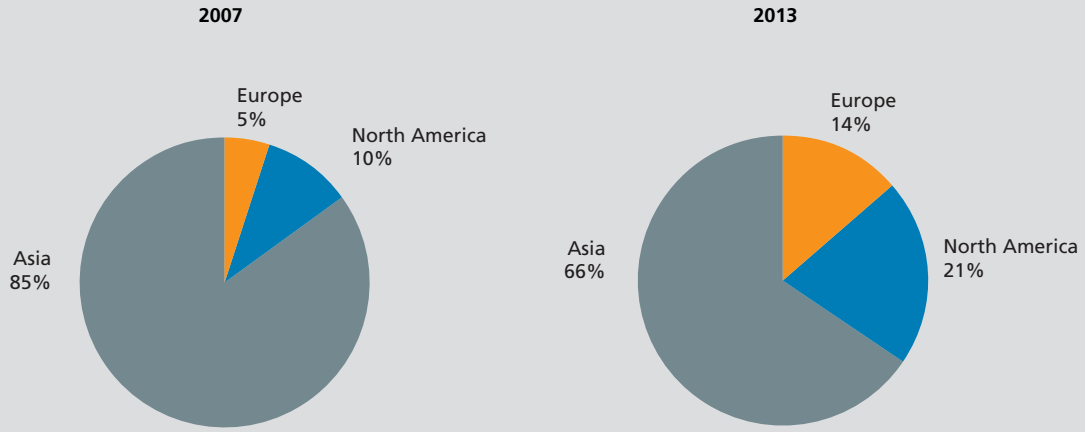
Geographical breakdown of VDSL subscribers by region



Source IDATE

But Asia still the top FTTH market

Geographical breakdown of FTTH/B subscribers by region



Source IDATE

A technical and economic challenge

Mobile broadband

Steady growth of mobile data traffic expected

Mobile operators view data services as a growth path that is critical to their future development. Voice and text messaging services account for between 70% and 90% of operators' income in mature markets, which means that the main threat to their financial well-being in the short term is seeing this revenue decline. Mobile data services are starting to take off, with 3G infrastructure reaching significant coverage levels and the number of 3G customers rising steadily.

A distinction can be made between two types of mobile data service: those carried over from the fixed Web (such as e-mail, IM and Web browsing) and those that are more specific to the mobile ecosystem, such as location-based services, m-payment solutions and enhanced mobile communication services. Improved take-up of data applications, and especially of services carried over from the fixed Internet, has been made possible by the introduction of increasingly attractive high-volume and flat rate date offers. Operators are thus doing away with the dangers of having their voice or SMS revenue being cannibalised. If their data services revenue does shoot up quickly, it will mean an equally swift rise in capacity needs and data traffic. An explosion in traffic volumes and the associated costs could threaten the quality of the services and financial equilibrium.

In the meantime, equipment manufacturers need to develop innovative solutions that satisfy operators' needs. Among the competing technologies, LTE is emerging as the frontrunner.

Mobile broadband economic equation in need of a global approach and a technological choice

Possible directions are becoming increasingly clear. One of operators' most pressing needs is to decrease their capital and operating expenditures at the network level.

Cost effectiveness is improved when switching to LTE, but the roadmap for rolling out the technology will depend ultimately on the availability of radio spectrum and the technical and financial choices that operators make, notably between HSPA and LTE. Even if the use of newly available frequency bands will rapidly reach its limits, a too lengthy spectrum and frequency allocation process could well be detrimental to the development of the mobile broadband ecosystem, delaying both the technology standardisation process and operators' commitments to new investments.

Improving the network's density, which has always been a solution favoured by operators to handle an increase in traffic, could occur again in densely populated areas where restrictions on capacity are felt most keenly for access technologies like HSPA and LTE – although the work would have a sizeable impact on both the environmental and economic front. The femtocell solution, which allows mobile operators to reap benefits on two major cost items, namely collection and energy, provides a low-cost option for overcoming operators' indoor coverage issues for data services, as well as capacity issues at the network core and wireless access network levels. Integrated operators, which have both a mobile and a fixed broadband network, would be the chief beneficiaries of femtocell solutions. They could generate the greatest economies of scale by mutualising their core and collection network for fixed and mobile broadband users.

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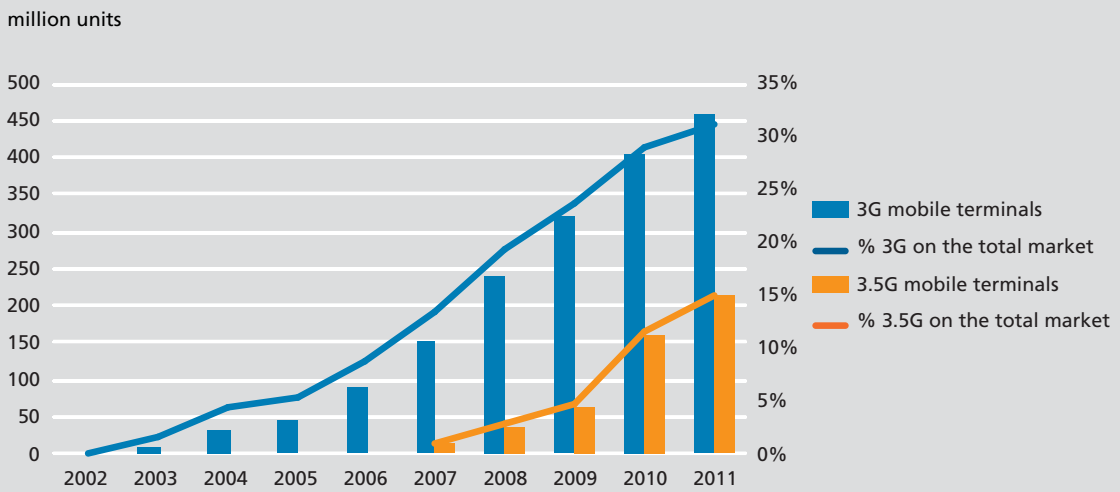
3G customers in the EU-27

(thousands)	2005	2006	2007	2008	2009	2012
France	1 419	4 155	5 879	9 200	16 423	46 118
Germany	2 400	4 745	8 700	15 691	26 757	80 525
Italy	10 764	16 260	23 100	29 000	34 841	63 305
Netherlands	407	2 037	3 840	4 892	7 481	14 327
Poland	40	300	1 363	3 400	5 000	21 205
Spain	100	200	360	1 048	2 689	14 280
United Kingdom	4 527	7 800	12 500	20 817	29 795	65 579
EU-27	22 371	43 884	69 670	111 390	167 527	412 972

Source IDATE

One in five handsets sold in 2008 was 3G compatible

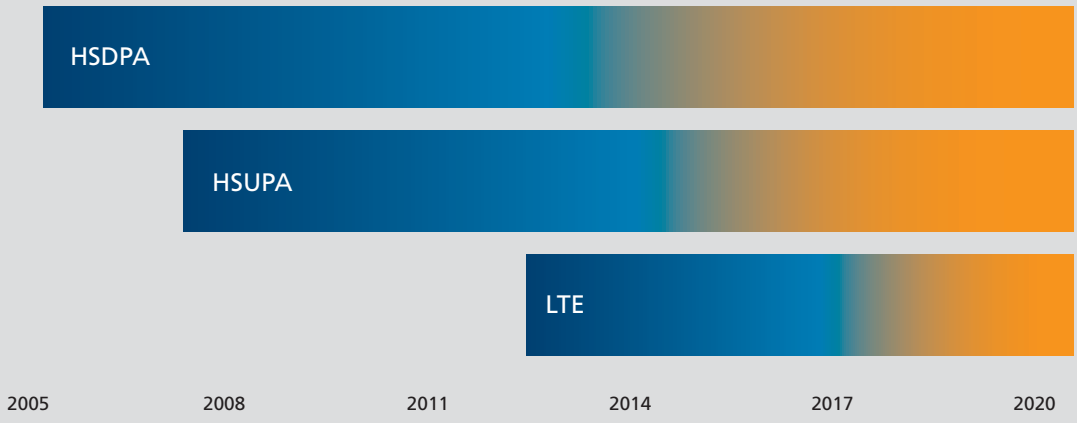
3G and 3.5 handset sales forecasts



Source IDATE

Shift to LTE

Rollout and coverage roadmap for HSPA, HSUPA and LTE in Western Europe



Source IDATE

Beyond complementing terrestrial infrastructures

New satellite markets

Television: satellite consolidating its role

The satellite industry earns roughly 70% of its income from direct-to-the-home TV broadcasting – benefitting from long-term contracts with a single partner, namely the company that markets the pay-TV package. This exceptional visibility, combined with margins unrivalled in the media broadcasting sector, is offset by a certain degree of risk as limiting satellite to pay-TV automatically limits the size of the potential viewership.

Satellite also needs to manage a delicate transition: in some markets, analogue channels still have a very large following, their digitisation would automatically decrease their capacity requirements. Moreover, developed markets have probably hit a peak – having launched a huge number of TV services whose long-term survival is by no means guaranteed. Demand for the excess in unused capacity will be spurred by high-definition TV today, and 3D TV further down the road.

Internet access via satellite

An acceleration in ADSL rollouts in Europe is shrinking the size of the dead zones that would be prime targets for Internet access via satellite, but this niche still represents a potential market of 18 million households.

Emerging markets naturally represent a much more attractive target. Satellite's cost structure is much more suitable than terrestrial networks: low fixed costs for operators and variable costs covered by a small base of users willing to pay high subscription costs. Moreover, government initiatives to decrease the digital divide are creating a positive environment.

Hybrid architectures, which combine satellite and terrestrial infrastructure, are emerging as an interesting solution for providing satellite access. The O3b project (Google, Liberty Global and HSBC), for instance, proposes a satellite backbone feeding cellular or WiMAX ground stations, that would enable the deployment of low-cost access solutions in emerging markets.

New opportunities

In addition to DTH TV broadcasting, satellite's traditional position has been to provide a complement to terrestrial networks. Growing security demands (for people, countries and transmissions) could cause this position to change. Mobile satellite systems (MSS/ATC in North America and CGC for Europe) also allow satellite operators to offer high-speed mobile services in the S or L band. These companies nevertheless need terrestrial partners to operate the network on the ground, and the configuration of the terminal remains a major hurdle.

The rise in Internet traffic, particularly as video becomes increasingly ubiquitous, changes the economic equation of terrestrial backbones, and could enable the emergence of solutions distributed to local hubs. Satellite, which has been gradually eliminated as a CDN (Content Delivery Network) solution, could benefit from this development.

Finally, satellite continues to be an industry characterised by the coexistence of two market segments: civilian applications on the one hand, and military on the other. Gateways between the two are now expanding beyond just an exchange of technologies – two examples being the Galileo GPS project in Europe and the military's growing use of capacity on commercial telecommunications satellites

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Number of transponders dedicated to video and DTH services by region

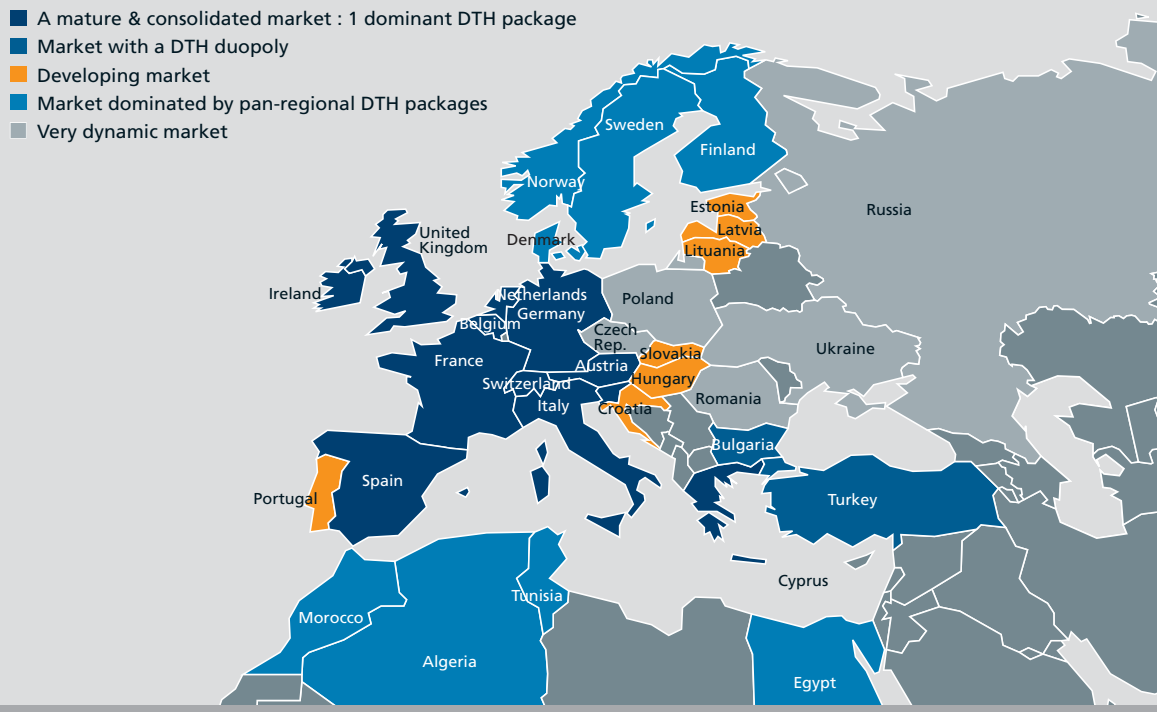
Number of transponders	2008	2009	2010	2011	2012	2013
North Africa	34	36	38	40	43	45
Central and Eastern Europe	149	155	160	168	179	197
Western Europe	405	403	423	446	470	501

Note: equal to 36 Mhz

Source UDA

DTH market growth now chiefly in Eastern Europe

DTH market competition



Source IDATE

Very disparate development scenarios

Internet access market positioning strategies for a satellite operator

	Zone 1 Well developed broadband market Western Europe	Zone 2 Catching up gradually Baltic states, Portugal, Slovenia	Zone 3 Late bloomers Eastern Europe (except Baltic states, Slovenia), Greece	Zone 4 Lasting digitaldivide? North Africa
Most suitable initial strategic positioning	Reduction of the digital divide Partnership with a DTH platform	Reduction of the digital divide Partnership with a DTH platform	Internet pure player Partnership with a DTH platform	Internet pure playerPartnership with a DTH platform
Most suitable longer term strategic positioning	Reduction of the digital divide Partnership with a DTH platform	Reduction of the digital divide Partnership with a DTH platform	Reduction of the digital divide Partnership with a DTH platform	Internet pure playerPartnership with a DTH platform
Potential target market for satellite	++ 8.3 million households not covered by a broadband network at the end of 2006 But wireless network rollouts expected in the coming years	+ 1 million households not covered by a broadband network at the end of 2006 But wireless network rollouts expected, PC penetration rate limited but rising rapidly, and lower GDP per capita than in zone 1	+++ 9 million households not covered by a broadband network at the end of 2006 But wireless network rollouts expected, PC tration rate limited but rising rapidly, and average GDP per capita	+++ 19 million households not covered by a broadband network at theend of 2006 But wireless network rollouts expected, low PC penetration rate and low GDP per capita

Source IDATE

Difficulties of convergence

Fixed/mobile convergence offerings struggling to compete with substitution

2008 was not the year of the long-awaited rise of convergence packages. Although Orange's Unik service has made some inroads, especially in the business world, the disappointments suffered by BT with its Fusion package and by Deutsche Telekom, which is opting instead to support T-Mobile's fixed-mobile substitution offering in Germany, underscore how hard it is for these packages to make a dent. There are several reasons for this: first because the services are based on dedicated devices that are limited in terms of selection, features and user-friendliness, which explains why consumers have not been seduced by them. Second, the need to switch equipment is an automatic turn-off. Third, in many cases, the way these offerings were initially priced was complicated and, last but not least, those offerings whose principal sales argument is price are coming up against stiff competition from the growing number of high volume fixed VoIP packages and homezone deals from mobile operators working to capture as much of their customers' calling traffic as possible. This means that, in most countries where such offerings compete with one another, fixed/mobile substitution and VoIP services are proving more popular than convergence offers.

A few new convergence packages with equipment have seen the light of day, including T-Mobile@home and Sprint Nextel's femtocell deal in the US. Both of these have proven more popular than the examples cited earlier, but are more akin to enhanced fixed/mobile substitution services than actual convergence packages.

Development of high-speed mobile access prompts proliferation of Internet-ready devices

The emergence of the mobile broadband market emergence will bring with it profound changes in the range of network access equipment for subscribers. While the iPhone was widely acclaimed again in 2008 – having generated a lot of buzz even before its release and helping to revive the smartphone segment – the outstanding trend this past year was without doubt the surging popularity of USB dongles and netbooks in particular which accounted for 30% of consumer laptop sales in Q4, and proved particularly popular in Europe (60% of global sales). The latest generations of these machines are equipped with features that rival laptops, operating on the Wintel platform and boasting storage capacities of over 120 Gb. They come for a price almost half that of a comparable laptop, thanks to operator subsidies, and are even being offered for free with two-year contracts in the UK.

In terms of volume, the phenomenon is less spectacular but there is also a growing number of packages that include mobile Internet devices which are halfway between a netbook and a smartphone. They are produced by integrators but carry the distributing operator's logo; their value is still not a given for consumers since they offer a user experience similar to a smartphone, but on a much bulkier device.

Increased competition between fixed and mobile

The commercial success enjoyed in most European countries by mobile broadband offers with a laptop (which account for over 80% of 3G data traffic and up to 50% of some operators' non- SMS/MMS data revenue) will naturally mean increased competition between fixed and mobile platforms for delivering high-speed access, especially to roaming users who generate high ARPU and which are more lucrative. The competitive price points on mobile broadband offers (35 EUR in France, 35 GBP in the UK for 1 to 3 Gb of monthly traffic) combined with ultra-competitive access equipment (free or very cheap netbooks), the speed of the connection (up to 7 Mbps downstream) and the added bonus of mobility (including access to operators' hotspots) together make for a very appealing package, and one which could offer a serious alternative to DSL and cable modem access offers.

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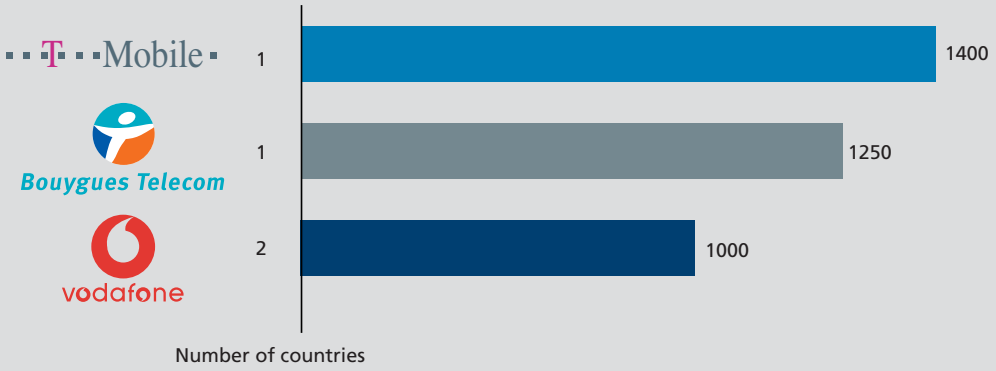
Electronic device sales figures

(million units shipped)	2006	2007	2008
Laptops	87	110	139
Netbooks	0	1	12
Datacards, dongles and other 3G modems	7	10	14
Smartphones	80	150	210
Mobile phones	987	1135	1210

Source IDATE

Swift success for substitution offers…

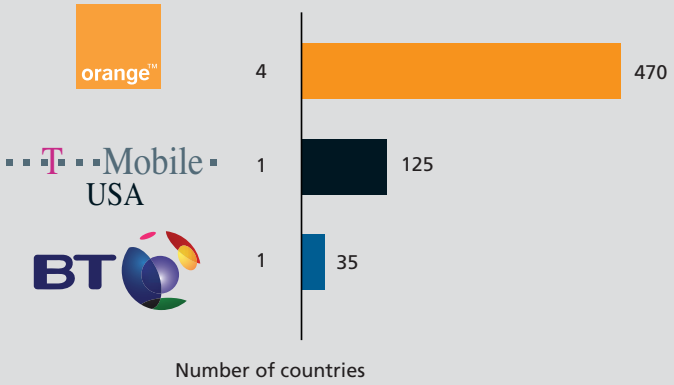
Subscriber take-up in the first 12 months (000s)



Source IDATE

… slower for convergence offers

Subscriber take-up in the first 12 months (000s)



Source IDATE

V Consumer services and contents

Services and content: who will control the user interface?

Web 2.0: reality check

As of March 2008, close to 60% of the world's Internet users had created a profile on a social network, but the leading sites are still struggling to transform their traffic into ad revenue. The promise of a demarcated, qualified audience, which is synonymous with better ad performance, is just not coming true: the CPM (cost per thousand) paid by advertisers is still well below what they pay on traditional media.

The leading social networks (such as MySpace, Facebook, Cyworld or Bebo) need to evolve by:

- incorporating the major Internet functions (search, IM, e-commerce);
- and expanding their content offering through partnerships with professional or semi-professional players.

Among Web 2.0 sites, the issue of reaching break-even on video sharing sites is particularly delicate, and it is imperative that they secure premium or at least professional quality content.

The social networking phenomenon concerns e-commerce as well. The top online merchants are generating revenues high enough to maintain their R&D efforts which are critical to developing intermediation platforms (which they can market to other merchants), and integrating such Web 2.0 features as recommendations as well as geolocated communities.

Although it is taking some time to translate them into ad revenue, consumers' personal data, and its use, are the fundamental currency of Web 2.0. Debates about the social graph pit the proponents of interoperable social networks controlled by consumers against those in favour of proprietary strategies for controlling user profiles. The alternatives lie between an open model, which makes Google the natural platform for indexing and search for personal information, and a closed model, where the beneficiary is the company holding the customer portfolio.

Options available to content producers

The dilemma facing content producers is that of choosing between direct distribution or syndication. If each sub-segment of the entertainment market (print, music and video) has its own distinct set of characteristics – notably with respect to the exclusivity of rights management – two distinct views, which are not entirely mutually exclusive, shape content publishers' strategies:

- the consolidation of a traditional B2C model which is based on the creation of sites that house multimedia content, and which are enhanced on an ongoing basis – in part by users themselves. These sites are competing with the Web's major distributors, namely portals for now and social networks down the road;
- the choice of a B2B model for circulating content on these distributors' sites, and so benefitting from their audience, but at the expense of losing control over ad revenue.

Content providers favour the first approach, at least for premium content. The economic downturn in 2009 could force them to revise their strategy, however, particularly if it means an accelerated shift in ad revenue from traditional media to the Internet.

Whatever strategy they choose to build their online offerings, content publishers are faced with a difficult choice. The switch by consumers from offline to online consumption automatically means decreased ad revenue, in large part because content on the Web competes with a host of other services. The result is that ad revenue per hour of content consumption is by definition lower than earnings on traditional media: the offline vs. online ad revenue ratio is 5:1 for radio and 10:1 for print media. For some groups, this has meant making advertising their central Internet strategy, rather than making their online business an extension of their existing activities.

The device as a gateway

It is devices which are playing an increasingly central role in distributing content and services. In the case of mobile phones, a listing on the operator's portal, and especially the installation of dedicated applications, are key to maintaining visibility. In the globalised mobile phone production market, Web services from the largest markets – especially the United States – are naturally preferred over European services. Because of the inherent restrictions in mobile browsing, listed sites will continue to enjoy a competitive edge, even if 'transparent' access to the Web is developing, and even if Apple, in an effort to counter Google and its Android OS, is opening up the iPhone to third-party applications.

Having access to the device also has a major influence over content consumption in the home. The Web has enabled the emergence of new services that could catch on on the TV set. This Web-TV connection is still difficult to establish due to a lack of seamless home networking solutions.

Service provider boxes do appear to be good candidates for creating this connection in markets where triple play bundles are popular. Their connection to all three services allows them to assemble and market a content offering that benefits from the quality of service (QoS) of their multicasting solutions and, more generally, of their control over the network. This role of the portal is being contested by content producers.

Moreover, with the proliferation of content storage and distribution peripherals inside the home, we are seeing the emergence of Internet-ready television sets that could well be compatible with online services. The absence of guaranteed QoS on the Net could dim the appeal of the services, or force content providers to pay for this quality of service, the beneficiary here being either:

- network operators; or
- Content Delivery Network (CDN) providers whose role is bound to grow as long as network performances have not reached the level of the new demands of video transport.

What is the status of new TV services?

There is a variety of aspects in reviewing the current development status of new television services.

- Major uncertainties still weigh on the business model for broadcast mobile TV, and feedback on existing services has not yet dispelled them. Mobile pay-TV offers launched by mobile operators have not enjoyed the success hoped-for. These disappointing results can be attributed in part to excessively high prices. In addition, while the fact of not charging for them secured the popularity of terrestrial mobile TV offers in South Korea and Japan, it did not translate into profitability. The sole source of income, advertising revenue, is still far too low. Given the cost of rolling out mobile broadcasting networks, the integration of DVB-T chipsets in mobile handsets to provide a basic level of roaming TV viewing is emerging as an increasingly credible solution.
- The video on-demand (VOD) market is split between premium content (especially movies), catch-up TV and video sharing services. Each is being developed according to its own model. Premium VOD, which is generally fee-based, remains a niche market still hampered by piracy. Catch-up TV is spreading, being offered both by pay-TV and ordinary commercial channels, and is their best response to the increasing amount of time that viewers are spending online. Finally, video sharing services need to resolve the difficult equation between meagre ad revenue and high technical costs. In all its forms, advertising is found on less than 3% of YouTube pages that contain video.

- High definition television (HDTV) is entering into a virtuous circle thanks to the steady expansion of the existing base of compatible sets, much more than because of broadcaster investments. Ubiquitous HDTV will mean a shift in the balance of competition between broadcasting networks. The use of the digital dividend in particular will either confirm or harm the relevance of the digital terrestrial network for broadcasting TV. Moreover, even though high definition is far from being the norm, there is already talk of ultra high-definition and 3D TV.

- Commercial approaches to TV over ADSL are becoming more sophisticated. Fewer providers are including a broad selection of TV channels in triple play bundles, limiting their basic offer to free-to-air DTT or satellite channels, and promoting for-pay options and services – and thus putting an end to the demonetisation of channels.

Is a re-examination of the relationship between network operators, distributors and service providers inevitable?

In Europe, Net neutrality seems to be a less pressing issue than the relationship between TV service providers and network operators, especially ADSL and fibre optic networks. The central question here is that of capitalising on the value tied to the role of commercial distributor. The potential conflict between ADSL operators and TV channel operators is, however, ultimately confined to markets where telcos are engaged in a vertical integration policy and where pay-TV companies plan to handle their own distribution. National and European public authorities nevertheless appear to be willing to intervene to encourage an organisation of the sector where vertical integration is limited, in other words one that guarantees the distribution of all audiovisual services on all platforms.

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Which is the right model?

Internet video

Internet video heading towards a mass market

IP video consumption is skyrocketing in all of the major markets. Video will continue to drive the increase in Internet traffic as usage rises, as TV services migrate to the Web and with the expected improvement in picture quality – the turning point here being the increased consumption of high definition programmes.

Internet video services can be segmented according to their revenue model. Short-tail models (premium VOD, catch-up TV) are based on pay-per-view or high CPM (in-stream ads). Long-tail models, meanwhile, target a mass market with a huge volume of more or less amateur videos aimed at large audiences (social networks, sites such as Dailymotion and YouTube), relying on audience-based ad revenue from sites where very few videos are monetised.

Varied results for service-specific business models

- The value generated by each VOD programme makes it possible to cover (and even exceed?) distribution costs, and to generate the highest per-video margins.
- The economic equation of catch-up TV services is improving as their consumption increases. There is a threshold that still needs to be reached, however, below which marginal gains per video are not enough to make the offer profitable.
- Viral or UGC (user-generated content) platforms are not yet managing to generate enough revenue per video to offset distribution costs, but the traffic generated by the service does allow them to recover ad revenue on volume, thus diminishing the handicap of having very little in-stream advertising. Despite their impressive audience figures, it has become vital for these services to segment their offer according to stated user tastes, and to incorporate more and more professional content to achieve a profitable model.

Paths opening up to more profitable services

- The migration of online services to the TV set helps to increase viewership, as is the case with VOD in France where the leading platforms are available on PC and TV via triple play bundle providers. This shift nevertheless involves payment to the service operator. We could see open online services via IP boxes or Internet-ready TV sets, but the mechanics of creating this kind of ecosystem are still very complicated.
- Most leading service providers could improve their financial position by increasing the volumes consumed. Such is not the case, however, with long-tail services where the goal is to demarcate the audience by mid-tail content. In any event, increasing per-video consumption remains key to the monetisation process.
- Ad revenue could be increased by greater monetisation of videos, by the sale of ad space on the site's homepage and from the dual impact of increasing the number and quality of viewers.
- Finally, viral and syndication options are still under-exploited. Using the necessary monitoring tools, there are ways to translate Internet video into growth outlets. What remains is the issue of programme copyright, which is still fragmented, whether on the Web or the embryonic but promising multi-platform distribution market.

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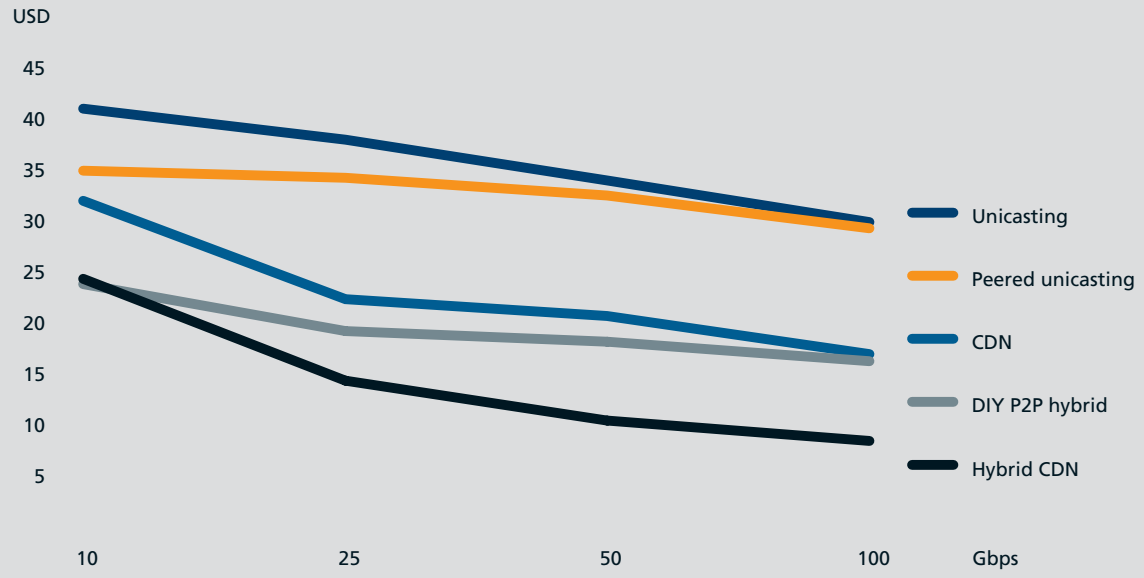
Viral platform business model simulation

Videos viewed per month	496	796	1 096	1 546
Gbps/month	16.07	25.80	35.52	50.10
Net revenues (million EUR)	3.27	5.25	7.23	10.19
Delivery costs per year (million EUR)	4.44	6.12	7.65	9.87
CDN costs per year (million EUR)	4.09	5.72	7.21	9.39
Equipment costs incl. peering (million EUR)	0.35	0.40	0.44	0.48
Gross profit (million EUR)	-1.17	-0.87	-0.42	0.33
Gross margin (%)	-35.9%	-16.5%	-5.8%	3.2%
Sales, administrative and general expenses (million EUR)	2.00	2.00	2.00	2.00
Operating profit (million EUR)	-3.17	-2.87	-2.42	-1.67

Source IDATE

How to reduce IP video costs?

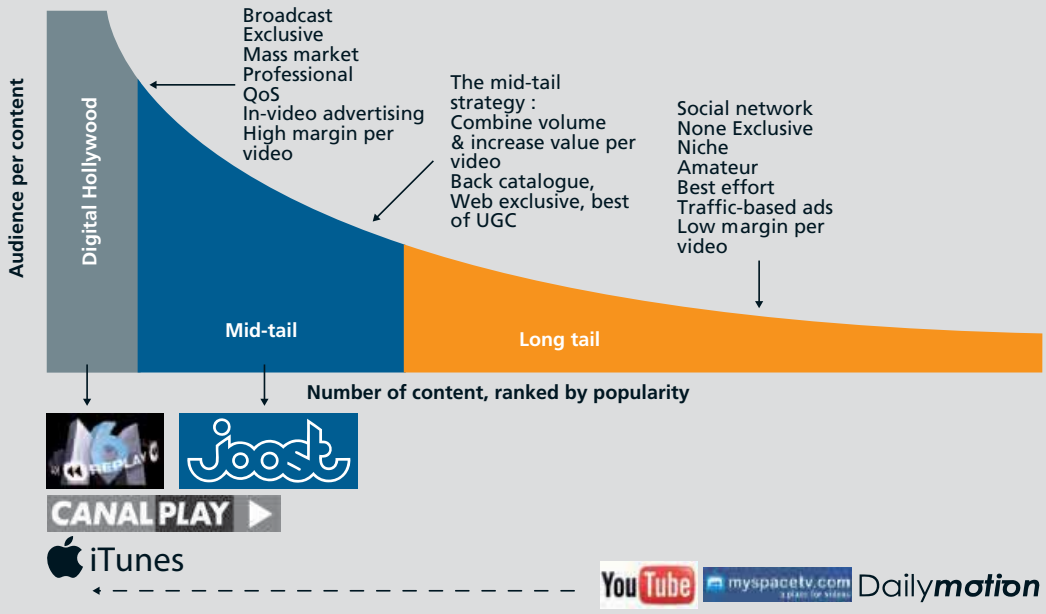
Cost per Mbps according to volume of traffic



Source IDATE

The mid-tail, the central IP video challenge

Strategic positioning for online video services



Source IDATE

New music industry professions

Direct and indirect impact of the dematerialisation of music

The global music market represented 67 billion USD in 2008. It can be broken down into three segments: recorded music (34.1 billion USD), concerts (25.6 billion USD) and music publishing (8 billion USD).

Directly or indirectly, the shift to digital formats affects all three segments:

- the partial shift from physical music sales to digital sales impacts associated recevenue from music publishing;
- the growing number of online music distribution services means a corresponding increase in publishing rights;
- the decline of the global market for recorded music market increases the importance of concerts in the music economy.

The decline in the recorded music market (down by 26% between 1999 and 2007) reflects the growing difficulty in monetising music consumption. This cannot be attributed solely to piracy, as it also results from the abundance of free music offerings (such as FM, online streaming services and podcasts) and the automatic decrease in value due to the shift from a market of physical albums to one of digitised singles.

The biggest sellers in the digital music market as a whole are still derivative products (ringtones for mobiles) rather than the music itself, although in some advanced markets, such as Japan, songs do outsell ringtones.

Host of online pricing models

The fee-based model can be used in a number of pricing models – unit sales being the most prevalent, especially for single songs. We are seeing a growing number of subscription packages, however, which naturally mean lower average prices per song (as low as 0.28 EUR a piece on eMusic, compared to the more common unit price of 0.99 EUR). Another model involves charging users to download songs onto a mobile (Napster offers this as an option for 2 EUR a month).

Ad funding is still marginal, and is based on either a revenue sharing or a flat rate model for copyright holders, as with Last.fm. Integrating music into a social networking environment can also help increase traffic on a site, as with MusicMakesFriends. Having advertisers finance music directly is another potential extension of classic sponsorships by major brands.

Impact on the labels

Digitisation allows record companies to reduce their production costs, which are anyway shouldered in part by the artists. Distribution costs drop too, accounting for 21% of total costs for physical distribution, and only 6% for online distribution).

Rights management thus becomes a strategic component: music publishing is affected in the short term by the decline in physical sales, but the increase in the number of channels for distributing music (Internet, concerts) will reverse this trend. In particular, rights management is shifting from indirect earnings on the rights attached to use of individual works to the implementation of copyright licensing strategies. This shift requires a profound change in the business expertise of record companies. It will affect the relationship between labels and radio stations, which currently enjoy preferred access to their catalogues.

And, lastly, the concert market is now part of a vertical integration strategy. It is growing at a rate of over 10% a year in the United States: spurred by greater professionalism of the concert business and the emergence of specialists (Live Nation), the renovation of concert halls, the growing prominence of sponsorship (which now accounts for 30% of the concert market) and the rise in ticket prices. Going head to head with record labels, some promoters such as Live Nation are adopting a vertical integration strategy, and '360' contracts with a selection of major artists.

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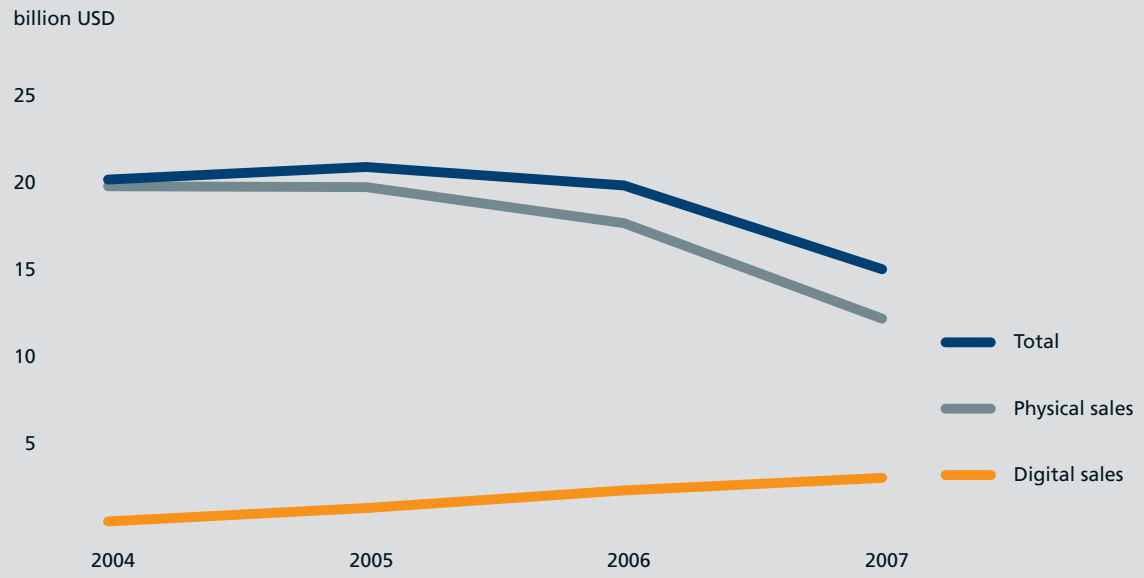
Global music market sales forecasts

(billion USD)	2007	2008	2009	2010	2011	CAGR
Physical recorded music	30.4	27.4	24.3	20.9	17.6	-13 %
Online music	4.1	6.0	8.4	11.4	14.6	+ 38 %
Publishing	8.0	7.6	7.9	8.2	8.7	+ 2 %
Live	25.6	28.2	31.0	34.1	37.5	+ 10 %
Total	68.1	69.2	71.6	74.6	78.4	+ 4 %

Source IDATE

Online music not offsetting the drop in physical album sales

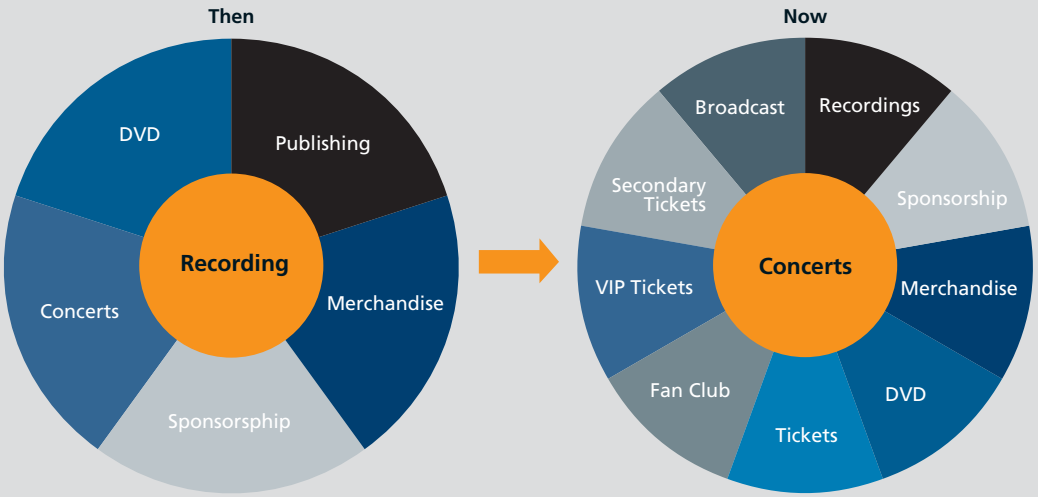
Digital and physical music markets



Source IFPI

Concerts central to the new music market

The Live Nation strategy



Source Live Nation

Divided we fall?

Print media and the Internet

Ad-funded model taking hold

Print media was the first content industry to be affected by the growing popularity of the Web. Information online is both abundant and free, forcing print media to compete with other media (TV and radio), with major generalist aggregators such as Yahoo! and more specialised portals, with pure players from the world of citizen journalism, as with Politico, and even with certain news agencies such as Reuters that address themselves directly to readers.

This is making life tough for print media. Traffic on newspaper Websites may be increasing (+6% in 2007), but the associated income from advertising is not enough to offset the decline in the ad revenue of print editions (a 4.1% drop in paid circulation in Europe between 2002 and 2006 and a 16.5% decrease in classified ad revenue in the United States in 2007). In addition, the shift from a text-based Web to a video-based one is hurting papers in terms of the time users spend on their sites: their share of online traffic is tending to shrink.

To turn the tide, newspapers need to adopt a portal-like strategy that incorporates content from other sources and video which will help increase the time users spend on the site. The critical path here begins by making use of free user-created content, before investing in low-cost video such as Reuters mobile journalism.

Another part of the strategy is to adopt a full range of advertising techniques, in other words not only 'heavy' media advertising (the longstanding specialty of print media) but also below-the-line marketing and e-commerce. More than just a new, hypothetically fee-based channel for distributing news, the mobile is above all a new advertising tool that can help print ads become competitive once again, and for print publications to capture a portion of the monies earned by e-commerce.

Many a professional focus

The wide array of professions and business models involved in the print media business makes it impossible to carry all activities over to the Web. A standalone strategy is possible for their core business, aggregating news in the form of a portal. Their other activities, such as classified ads, need to be viewed as profit centres, and not as a specific resource of the news production and publishing business.

Print media companies have neither the critical mass nor the technological skills to generate all their revenue on classified ads. Alliances with other papers, as on the site Careerbuilder, and perhaps with Internet companies such as Yahoo! HotJobs, are inevitable. An online strategy needs to work to protect the traditional revenue stream generated by classified ads in print.

Furthermore, the local press can be a relevant part of the local social networking market (a good example here being Vorarlberger Nachrichten). Establishing a strong position in this market requires sustained investments in technologies, or partnerships with companies that do master the. Such investments can be more easily amortised through syndication with local social networks (see the example of Topix).

A virtuous circle of Internet-print

There is no shortage of potential synergies between print and online editions: integration of various editions (as with Edipresse), commercial synergies (example of Better Homes and Gardens) and growing circulation.

The issue of capturing online ad revenue goes beyond just achieving break-even on print publication Websites. Building a worldwide audience that can be monetised by advertising can help bring down the price of print editions, and in some cases even make it possible to move towards a free edition.

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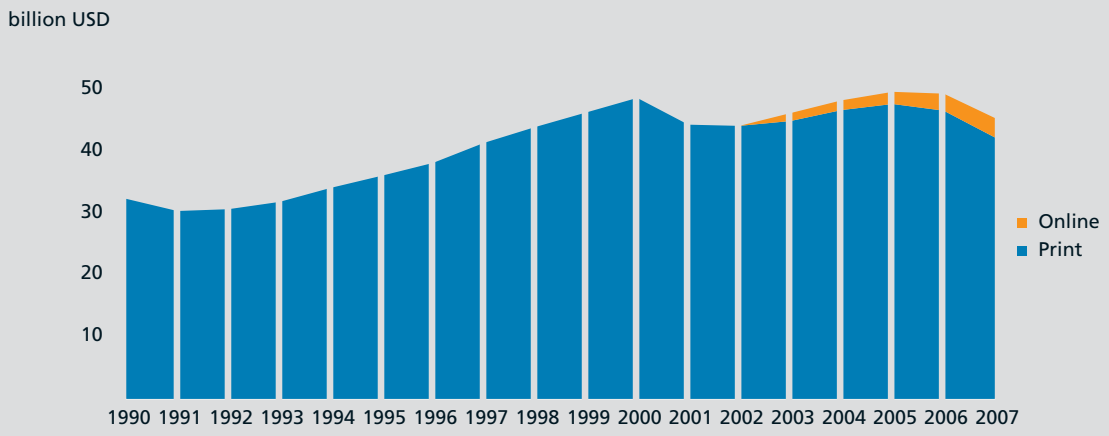
Top 10 news and media sites - USA - February 2008

Rank	Website	Market share
1	Yahoo! News	7.1%
2	The Weather Channel	4.7%
3	CNN.com	3.7%
4	MSNBC	3.0%
5	Yahoo! Weather	2.1%
6	Google News	1.9%
7	New York Times	1.7%
8	Drudge report	1.6%
9	Fox News	1.6%
10	People Magazine	1.4%

Source Hitwise

Online migration and loss of ad revenue

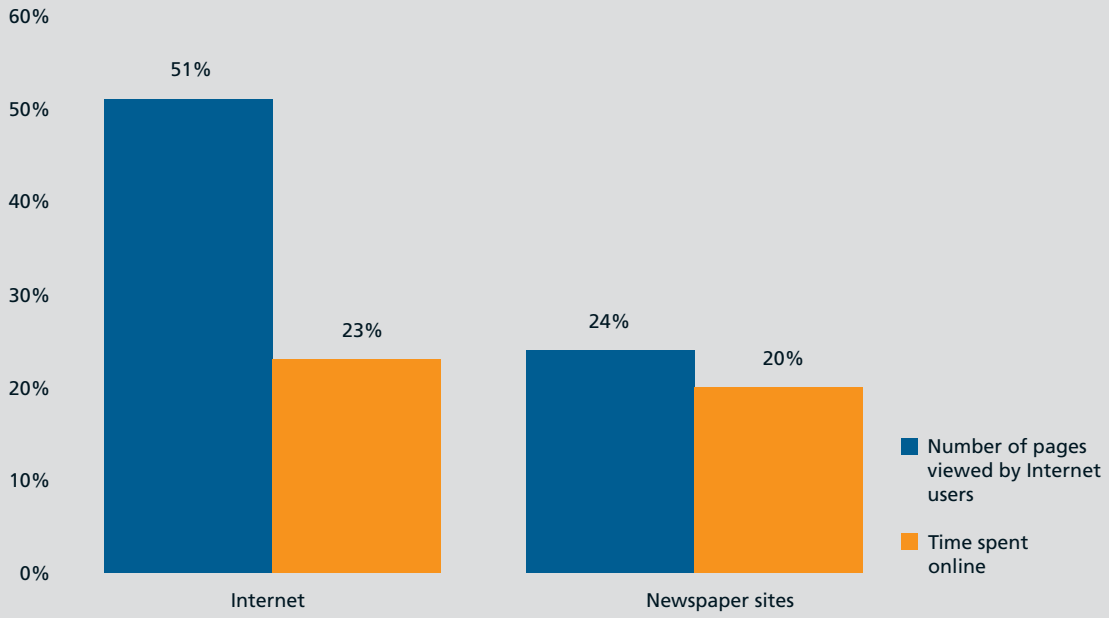
US newspaper advertising revenues



Source NAA

Internet video penalising print media online

Rise in page views and time spent online in the US, 2004 to 2007



Source Nielsen

Is this the way content gets to the Web?

Video games

Online gaming as an extension of traditional games

Unlike the music and video sectors, the video game industry is the using a coherent migration strategy. It is based on the following factors:

- online gaming clearly provides an added service compared to traditional gaming: easy access to casual games, collective experience for networked games;
- strong integration of online and offline dimensions, particularly with online services developed around consoles;
- clientele segmentation by distinct revenue models: ad-funded model for casual gaming (games with little added value and quickly completed), for-pay/subscription model for core gamers, especially players of massively multiplayer online games, and e-commerce (product sales) for social network members;
- efficient protection technologies, linked in particular to the existence of proprietary consoles.

For the past several years, marketing the physical platforms has also involved product stratification, clearly distinguishing premium products from 'budget' offers which lower the appeal of illegal downloads.

Casual gaming expands its potential clientele to all consumers

The casual gaming phenomenon has created a widespread momentum not only in core video game sectors but also in edutainment, communication and media applications. It promises to be a new source of income from a base of gamers that is much larger than the hardcore gamer community.

The fragmentation of usage, which comes with the arrival of a huge swathe of new gamers, is leading to a steady fragmentation of the offer. Consumers now appear to be more inclined to turn to a video game to entertain themselves, and could well find a casual game that suits their purpose much more than a hardcore game would. Tastes and desires vary, and this is leading inevitably towards a wide array of possible responses from content publishers.

From products to service

Service is at the heart of the strategies of all leading casual game companies, in pursuing the same goal: attract gamers, keep their interest and make them loyal. China's top gaming portal, Shanda, is built around a threefold approach based on a fundamental hierarchy: Play-Stay-Pay – marking a departure from the model that was widely deployed in the West up to 2007, namely Pay-Play-Stay.

Service is the key to this strategy. There are several forms of service tailored to users' needs. A good service can provide a specific response to any demand in terms of offering, community services, personalisation, tournaments and more.

Pricing innovations

Achieving widespread popularity for online gaming relies on ongoing innovations with pricing models. These range from Try-Before-You-Buy, in-game ads, micro-transactions (as with the sale of virtual items for a small price so that users can personalise their online space with an avatar, furnishings, clothes or cars); tournaments (entry fees to access the games); retail sale of games; subscriptions; and advergames (free, ad-funded games aimed at promoting a brand and its products).

Casual games combined across all platforms will, according to IDATE forecasts, account for more than 46% of the global gaming industry's earnings in 2012.

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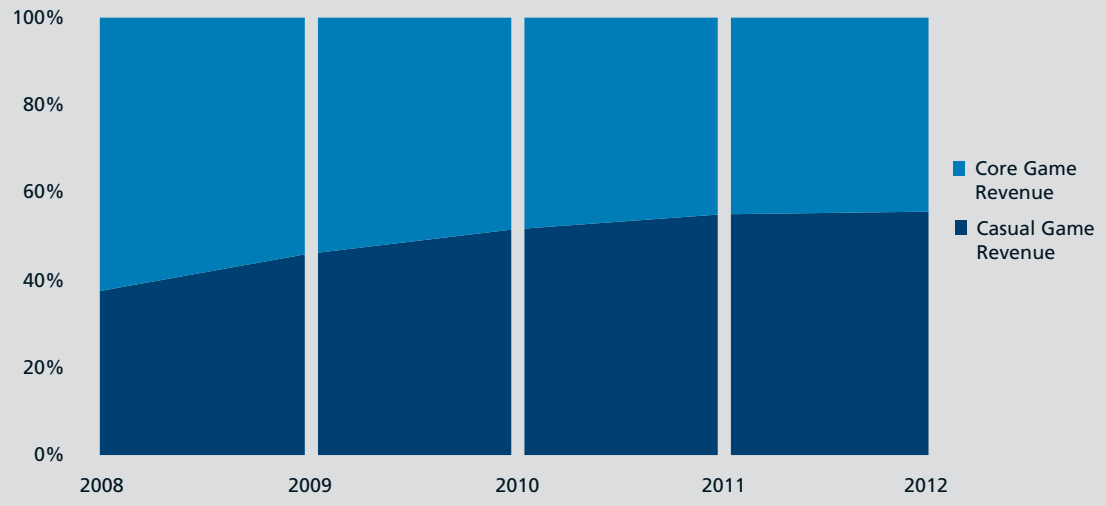
Casual game market forecasts, by segment

(million EUR)	2008	2012
Wireless casual game revenue	1 238.9	3 675.3
Offline computer casual game revenue	539.1	1 075.1
Online computer casual game revenue	3 382.9	8 906.0
Home console casual game revenue	2 771.5	5 863.3
Handheld console casual game revenue	1 247.6	2 292.1
Total casual game revenue	9 180.0	21 811.8

Source IDATE

Casual gaming expanding the video game market

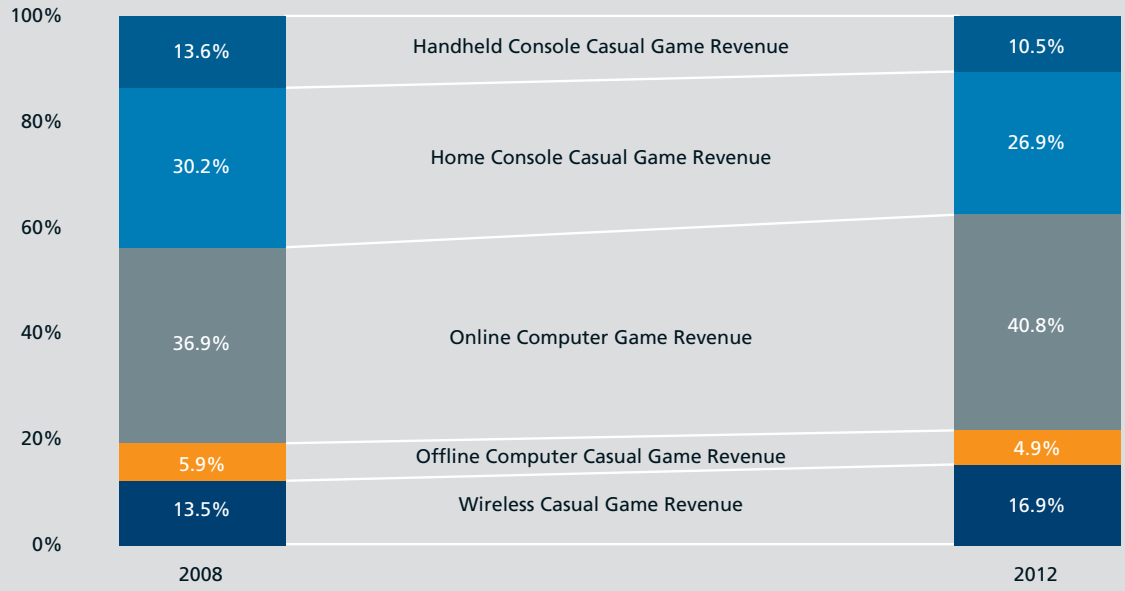
Casual games' forecast share of online gaming revenue



Source IDATE

Casual games taking hold on all platforms

Forecast breakdown of casual game sales wordwide, by segment



Source IDATE

Conditions for take-off

Mobile Internet services

The mobile Internet is still only used by a fraction of mobile phone owners, and chiefly by business people and/or technophiles outside of the most advanced markets such as Japan and South Korea where mobile e-mail, blogging and m-commerce are already widely used.

More propitious technological environment

The technological developments that have taken place over the past several years have made the mobile Internet more user-friendly, and this has naturally facilitated its adoption.

- 3G coverage (delivering speeds comparable to entry-level ADSL solutions) is now available widely enough across Europe and the United States, with more than 70% of the population covered, compared to over 99% in Japan and South Korea. The development of 4G around LTE should make browsing easier still. All the same, users have still not been wooed by 3G, with it accounting for only 15% to 25% of mobile customers in Europe and the United States at the end of 2007 (excluding data usage).
- Mobile handsets have also evolved. A great many of them allow users to connect to the mobile Web and to manage their multimedia content – smartphones especially, of which 145 million units were sold in 2007 (13% of the mobile phone market). More and more handsets are being designed with the mobile Internet in mind, with bigger screens and easier browsing interfaces – the iPhone being a good, but not the only, example.
- The base of 3G handsets is still small, accounting for only 15% of the world's mobile devices (32% by 2012).
- And, finally, while still fragmented, the software environment is based more and more on open source systems, including Linux, Android and, more recently, Symbian. This makes for easier third-party developments and substantially increases the number of applications available. The use of applications borrowed from the fixed Web (via widgets) delivers services tailored to the constraints of a mobile device. Mobile browsers, such as Opera, also handle the automatic adaptation of content to the screen.

All of these improvements have led to some real mobile Internet offerings – they still have a few defects, but are entirely useable.

Gradual development rather than sudden explosion

The mobile Internet will not become a significant market until some time around 2012.

- In 2007, Active mobile Internet users, that is to say those who connect at least once a month, still only represented between 7% to 15% of mobile phone subscribers in Europe (with the UK and Italy leading the way) and in the United States.
- With an annual growth rate of close to 30%, Europe is expected to be home to close to 163 million active mobile Internet users in 2012, compared to close to 110 million in the USA, or between 20% and 30% of the mobile customer base, or between 25% and 40% of the population – given that mobile penetration rates can go as high as 140%.
- Users in these markets will outnumber users in Japan (which has been by far and away the leader since the launch of the mobile Internet back in 1999): in 2010 for Europe and in 2011 for the United States, although still not rivalling Japan in terms of consumption, with the mobile Internet penetration rate forecast to be over 80% there by that time. The other major market is South Korea where penetration will be close to 70% in 2012.

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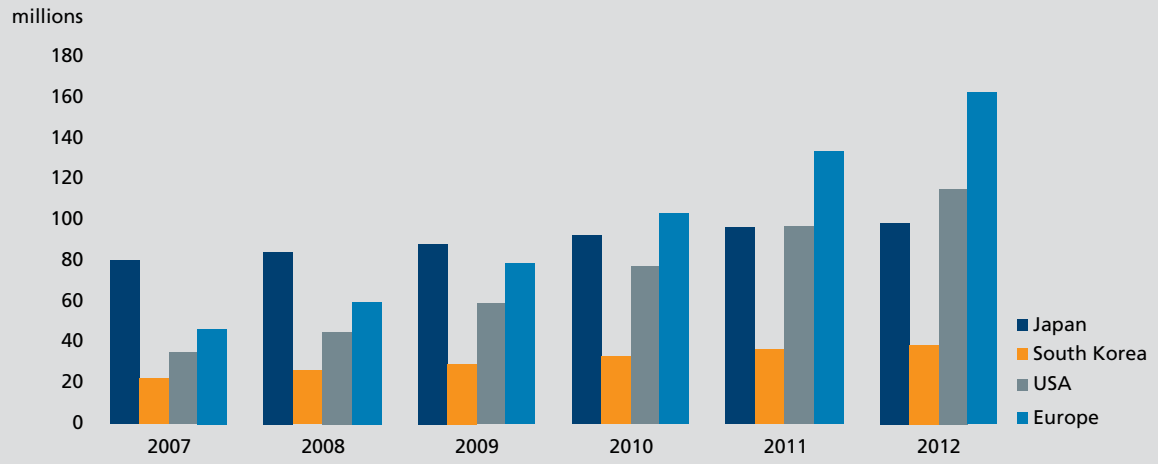
Mobile Internet ARPU (excl. laptop access)

(EUR/month)	2007	2008	2009	2010	2011	2012
UK	7.8	8.2	7.8	7.4	6.9	6.9
France	6.7	6.4	6.0	5.5	5.3	5.4
Italy	4.5	4.8	4.8	4.8	4.8	4.7
Germany	8.6	7.4	6.1	5.0	4.5	4.2
Spain	5.5	5.7	5.7	5.5	5.2	5.0
Japan	14.6	15.1	14.8	14.5	14.4	14.4
South Korea	9.9	9.7	9.3	8.6	8.1	7.8
USA	7.1	8.6	8.3	8.2	8.1	8.0

Source IDATE

Mobile Internet developing gradually

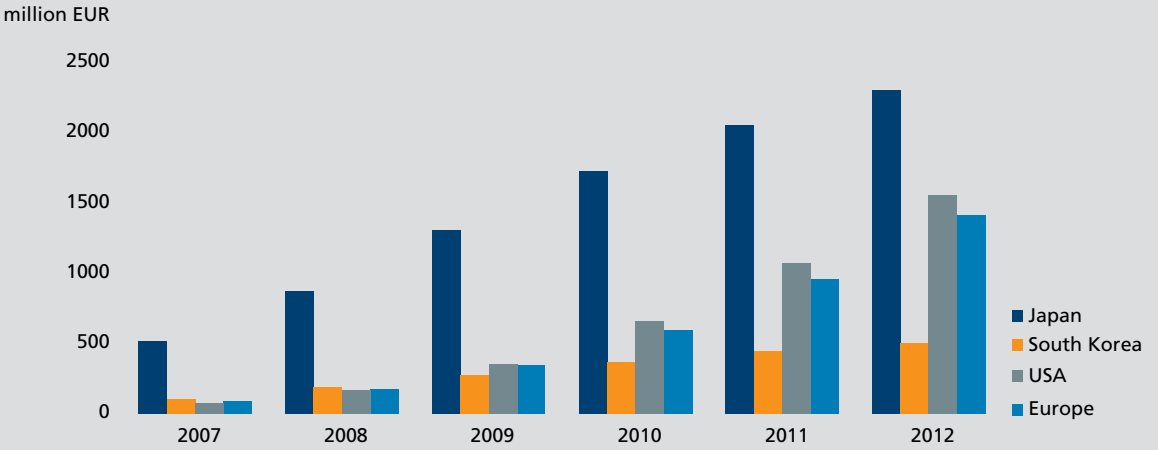
Active mobile Internet user forecasts



Source IDATE

Japan: mobile advertising pioneer

Mobile Internet ad market forecasts



Source IDATE

From the social network to the social graph?

Web 2.0

Web 2.0: driving massive traffic and the emergence of new online giants

The term Web 2.0 does not have any one single definition but the general consensus is that it refers to applications that are based on the principles of collaboration and sharing information and content, putting users and social interaction at the heart of it all. Growing at a tremendous rate, the main poles of attraction on Web 2.0 are social networks, whose top two players worldwide are MySpace and Facebook. In some parts of the world, all the same, these two titans have serious challengers that enjoy tremendous popularity.

The two Web 2.0 giants are now neck and neck. Although Facebook appears to be gaining ground over its rival on the international stage, rival MySpace continues to generate three times more revenue, and to enjoy top spot position in the United States which is by far the largest source of ad monies for social networks.

The social graph: interoperable platforms and portable data

The notion of opening up and sharing data between social networks, which is tied to the concept of the social graph, involves both making tools available for developers, also known as application programming interfaces (API), and enabling the portability of users' personal data. All of the major Web 2.0 players have their own development platform, allowing third parties to create two types of application: those destined to be used on the site itself, and those that can be used on partner sites whose API are interoperable.

A host of data portability initiatives have already been rolled out: projects that group several sites (OpenID, DataPortability…) and others launched by a single player (MySpace DataAvailability, Facebook Connect, Google Friend Connect…). Two competing models for enabling platform interoperability are currently emerging: an open system proposed by Google (OpenSocial) and a proprietary system backed by Facebook.

The real challenge in opening up social networks lies in the battle between the Internet giants to gain control of and tap into users' personal information, which constitutes the very core of the dominant Web 2.0 business model, namely advertising.

An Internet-wide social graph?

The spread of 2.0 principles to the whole of the Web could eventually lead to the ubiquitous use of the social graph. Although social graphs currently concern social networks above all, some 1.0 services are working to take advantage of their assets. The social graph represents a real opportunity for e-commerce players that will be able to tap into its potential to provide customers with personalised offers based on recommendations from their network of friends.

Uncertain business model

Advertising is and will no doubt remain the main source of income for social networking sites. Such 2.0 sites do have other avenues to explore: sale of generic brand technology, marketing premium services and e-commerce – the latter being an area with real potential to generate money for Web 2.0 players, but is still largely under-exploited.

The economic future of Web 2.0 nevertheless remains uncertain and Internet companies are still looking for a viable and robust model, rooted in the control and monetisation of their users' personal data.

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Breakdown of social network traffic in June 2007, by geographical provenance

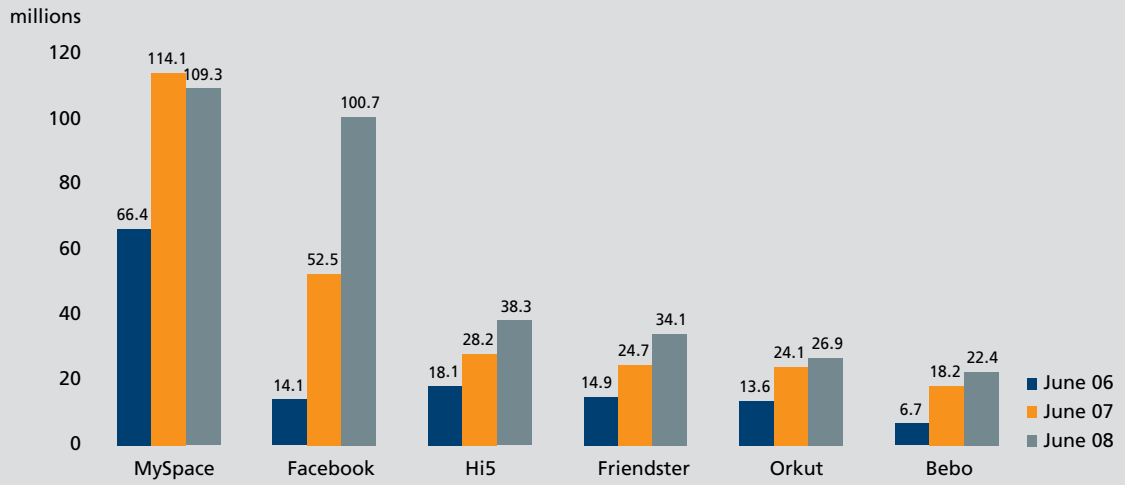
	MySpace	Facebook	Hi5	Friendster	Orkut	Bebo	Tagged
North America	62.1%	68.4%	15.3%	0.4%	2.9%	21.8%	22.7%
Latin America	3.8%	2.0%	24.1%	7.7%	48.9%	0.5%	14.6%
Europe	24.7%	16.8%	31.0%	2.5%	4.6%	62.5%	23.4%
Africa/Middle East	1.3%	5.7%	8.7%	0.8%	0.6%	1.3%	10.0%
Asia/Pacific	8.1%	7.1%	20.8%	88.7%	43.0%	13.9%	29.2%

Base = 15 year-old+ internet users, connected at home and/or at work

Source comScore World Metrix

Social networking: two global leaders

Growth worldwide of monthly unique visitors to the top social networks



Source IDATE

An Internet-wide social graph?

Recent Web 2.0 initiatives from media and telecom sector companies

Media company	Web 2.0 initiatives
News Corp. Viacom	• Acquisition of MySpace, acquisition of Photobucket • Acquisition of Xfire, community-centric video game platform, development of a series of virtual universes based on MTV programmes
CBS	• Acquisition of Last. fm
BBC	• Launch of Backstage
Skyrock	• Launch of Skyblog, France's largest blogging platform
M6	• Acquisition of Wideo and YooTribe, partnership with Habbo Hotel for the French version
TF1	• Launch of Wat, backed by DailyMotion, acquisition of a 95% stake in "1,001 listes" (e-commerce), 26% stake in the Overblog blogging platform
ProSiebenSat.1	• Takeover of German video site, MyVideo, 30% share of German social network, Lokalisten.de, majority stake in German knowledge sharing service, Wer-Weiss-Was
Axel Springer	• Acquisition of a 68.15% stake in Auféminin, online women's community

Telecom company	Web 2.0 initiatives
Comcast	• Launch of Ziddio, video site that can be accessed on cable
SK Telecom	• Acquisition of Cyworld and Egloos (blogging)
Orange	• Development of a Web 2.0 portal for FTTH subscribers, and for Voilà, launch of Pikeo, a geo-centric photo sharing service, takeover of CityVox (nightlife and entertainment guide)
Vodafone	• Betavine, texting and WAP-based mash-up development platform Takeover of the Zyb mobile social network
3 UK	• Launch of video site, See Me TV
Hutchison Whampoa	• 120 million USD investment in Facebook
Nokia	• Acquisition of the Twango online content sharing siteTakeover of Plazes, a mobile social network based on geo-location

Source IDATE

Hyper-local online markets

Promises of the Geoweb

The Geoweb, the Internet's baby

The geospatial Web, or Geoweb, is a notion of relatively recent coinage that refers to the process of merging geographical or mapping data with a range of online content such as photos, videos, business link and news, This makes it possible to create new environments for viewing maps, placing location-based services front and centre. Use of Geoweb applications by PC users increased by around 11% over the course of 2008.

The current shape of the Geoweb is characterised chiefly by such online mapping services as Google Maps, Windows Live Local and Yahoo! Maps. With driving directions (ViaMichelin, Mappy, Google Maps), travel services, or individual geolocation (Yahoo! Fire Eagle, Google My Location), consumers are gradually adopting this medium, which simplifies all searches. The Geoweb also has promise in the business world, especially for applications such as fleet or property management (Zillow).

Making mapping a mass medium

What we are seeing, then, is the information contained on the Web (shops, events, monuments, photos, videos and especially users) being indexed based on location, alongside the digitisation of the planet's surface. The Internet is becoming more and more 'local' while, at the same time, a growing body of digital data is being attached to actual locations, the link being provided by geographical coordinates, and made legible by mapping interfaces.

Technical innovations, and in particular advances in picture resolution, are propelling these services forward. The next stages of development will focus on 3D and mobile services. The natural extension of building online services around the notion of proximity is to provide mobile services (as with the mobile version of Google Maps, or the location-based search model integrated into the Yahoo! Go 2.0 portal), while 3D will provide users with an immersive experience.

Geoweb monetisation models

Several business models will coexist:

- Local advertising on the Net has the potential to be a major market for Geoweb players. Local media sites (print, TV and radio) and online directories earned 48% of local ad revenue on the Web in 2007.
- E-commerce. Based on the principle of affiliation, some Geoweb services are forming partnerships with online retailers who pay the Geoweb service a set commission or a percentage on the sales made as a result of links to their site. The products and services for sale on Geoweb sites naturally have a direct tie-in with user- performed searches such as online hotel booking, and with airline companies and car rentals.
- As a complement to their free services, some Geoweb players, whether Internet giants or more specialised players, offer a range of fee-based services, most of them geared to the business market: from an enhanced user experience, privileged access or a broader range of services. Some use the term 'freemium' when referring to the mixed business model employed by Websites and online applications that offer both a basic, ad-funded free service and optional fee-based ones.

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Net spending on local and regional advertising in 2007

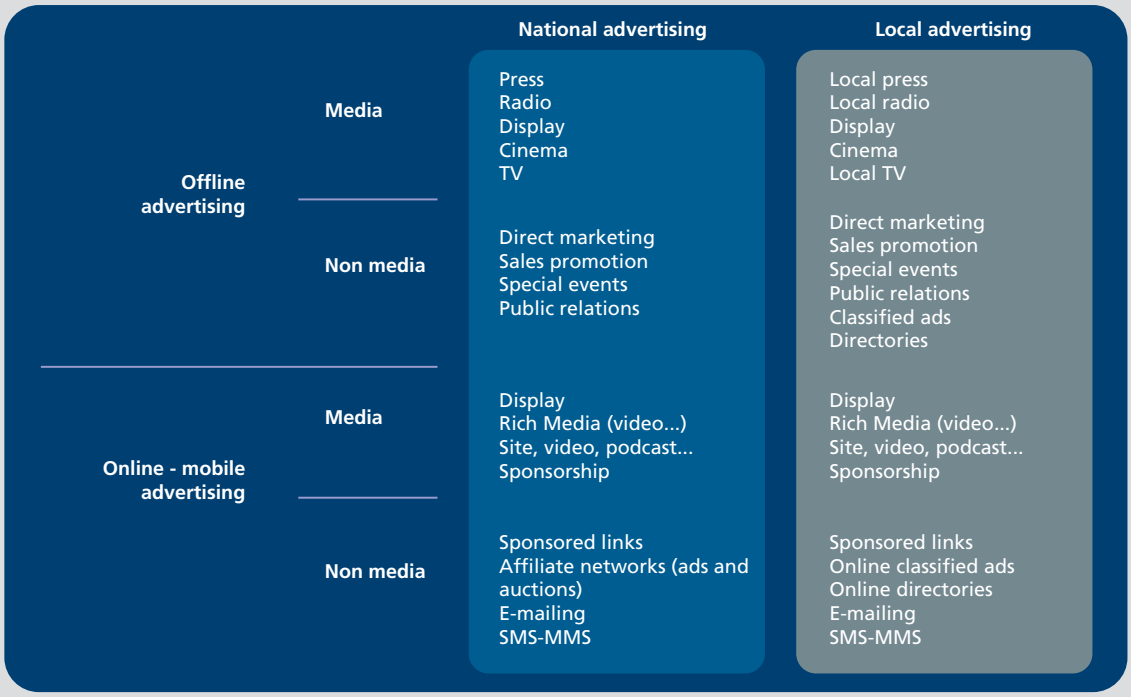
(billion EUR)	Local and regional spending		
	by national brands	by local and regional advertisers	total spending
Press and other print media	207	2 212	2 419
Radio	127	425	552
Display	206	612	818
Cinema and TV	32	113	145
Internet	78	72	150
Total media	**650**	**3 434**	**4 084**
Directories and guides	361	789	1 149
Direct marketing	1 095	2 647	3 742
Promotion	259	791	1 050
Special events and PR	255	744	999
Total non media	**1 970**	**4 971**	**6 940**
Total	2 620	8 405	11 024

** Classified ads and news outlets*

Source UDA

Integrating the geoweb into local advertising

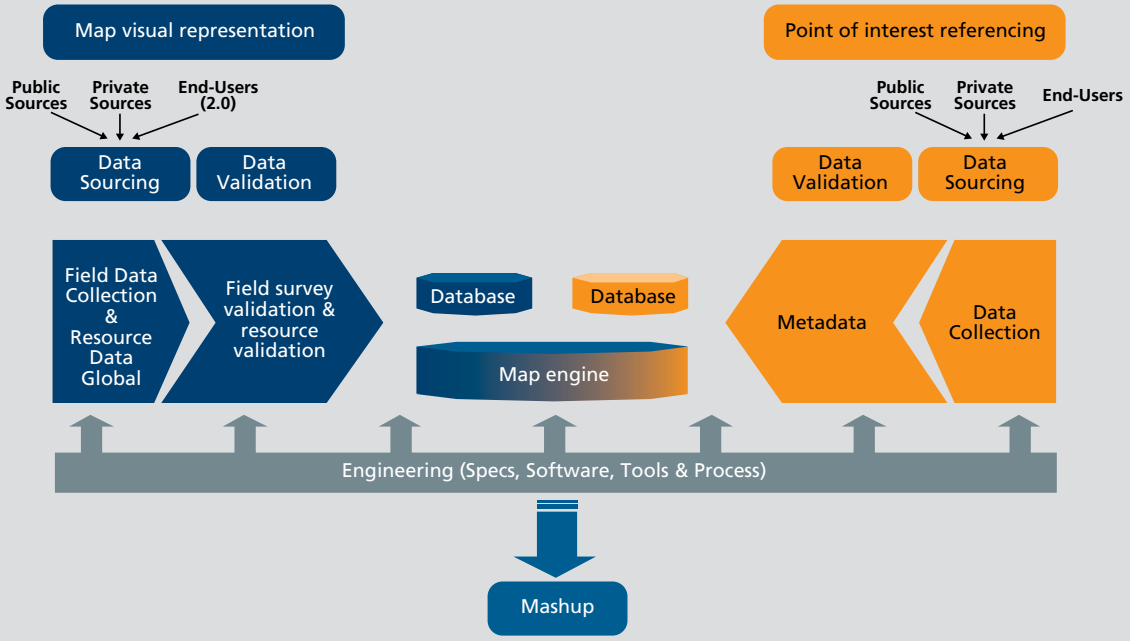
Main forms of local and national, offline/online, above/below the line advertising



Source IDATE

The geoweb: mapping and tagging

The online mapping value chain



Source IDATE

New Gen CE

New generation consumer electronics (CE) refer to the combination of Internet-ready devices equipped with storage capabilities, telecommunications capacities and a content distribution or broadcasting service.

The shift to Internet-ready devices

Three paths have the potential to spur the ubiquity of Internet-ready CE devices.

- The first comes from the Internet connection provided by ISPs in the home, with devices other than computers free-riding on the connection.
- The second is an additional connection dedicated exclusively to a mobile Internet device, or MID.
- The third involves providing independent mobile access (via a 3G USB key) that can be connected to a compatible device.

Native connection (integrated by definition in ISPs' home gateways) is already found widely in the latest generation of gaming consoles and digital TV sets. Other types of equipment are also beginning to be made Internet-ready in the factory: amongst them, televisions, digital media adapters, digital video recorders and HD DVD players.

One of the chief contributors to the ubiquity of Internet-ready devices will be a simple and recognisable interface that works the same way on all devices. There is no shortage of initiatives in this area, some of which are open source. It does seem unlikely, nonetheless, that we shall see a universal solution emerge in the medium term that has won the approval of all players along the new gen CE chain.

(Re)-emergence of the Web on TV to strengthen the TV ecosystem

The first generation of interactive TV services was a flop. Internet-ready televisions are nevertheless enabling the emergence of a better adapted second generation of the Web on TV. These new services can require interaction from the viewer or be distributed in push mode. In many cases they take the form of widgets delivering practical information.

New content distribution strategies: the video example

The use of a television set's connection to the Internet can help TV channels counter ISPs' walled garden approaches to delivering content to households. With a connection in the home, ISPs can deliver a set of services that satisfy an entire household's entertainment, media, communication and Web browsing needs.

Open access, wired or wireless, to the connection makes it possible for other player to piggyback their device onto the home gateway. Gaming consoles, mobile handsets, TV sets, STBs or hybrid boxes can free ride on the connection provided by the ISP.

It is in the VOD and HD VOD segment in particular that ISPs, TV channels and new gen CE manufacturers will be going head to head. Some TV channels provide dedicated VOD boxes connected to the Web and to the TV set; pay-TV companies manage a base of set-top-boxes that are also connected to the Web. These initiatives are proof of channels' desire to access viewers directly. But in an environment where high definition is expected to become the norm, can content providers afford to fall short of the quality of service that distribution by ISPs provides them?

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Worldwide shipments of Internet-ready CE equipment

(million units)	2005	2006	2007	2008	2009	2010	2011	2012
Cable Set-top Boxes	4.4	6.6	8.5	12.2	14.4	16.2	18.4	19.6
Satellite Set-top Boxes	0.5	1.3	1.7	3.7	5.0	7.5	10.0	11.2
TV Sets	0.4	1.5	2.7	4.9	9.6	14.0	19.5	25.9
DVD Components	2.5	5.7	8.6	11.4	15.1	19.3	26.2	44.9
Video Game Consoles	9.2	14.9	30.1	40.5	39.4	34.6	31.2	29.3
Audio Equipment	1.0	2.2	4.0	7.0	12.0	20.0	32.0	45.0
Digital Media Adapters	0.5	0.5	1.5	2.0	2.5	3.0	3.5	3.8
Media Servers	0.1	0.3	0.6	0.9	1.2	1.6	2.2	2.5
Total	18.6	33.0	57.9	82.6	99.2	116.2	143	182.3

Source IDATE

A new generation of interactive TV services

Selection of web on TV applications

Application	Interaction	Push
RSS feeds		●
TV programming-synchronised information		●
Weather widgets		●
Stock exchange widgets		●
Sports alert widgets		●
Email	●	●
Programme-related interactive games	●	
Electronic programme guide		●
Catch-up TV	●	
Programming of recordings	●	
Ticketing	●	
Web surfing	●	
eShopping	●	

Source IDATE

Device-network-service integration

Examples of new gen CE solutions

Company offering the service	Device supplier	Access provider	Content provider
Amazon	Amazon Kindle	Sprint	Publishers, Wikipedia
Apple	Apple TV	ISP	YouTube
LG	LG	ISP	Netflix
Matsushita/Panasonic	Panasonic	ISP	Google
Microsoft	Microsoft Xbox 360	ISP	ESPN, Paramount, Warner Bros, Europa Corp.
Nokia	Nokia nGage, N series	Mobile telecom operators	OVI Nokia
Orange	Orange Read&Go	Orange	Le Monde, Le Parisien, Les Echos, L'équipe, Télérama, Dupuis, Dargaud, Lombard, Mango, Kana
Samsung	Samsung	ISP	USA Today
SFR	Archos 5	SFR	Paramount
TomTom	TomTom GO 940 Live	SFR	Google

Source IDATE

From M2M to the Internet of things

Smart machines

From Machine to Machine…

The M2M market boasts considerable potential, with already more than two billion machines around the world (630 million in Europe). The market for internal, wired applications is already well developed, but the most dynamic segment is wireless M2M (cellular, satellite, other wireless solutions). This opens the way to new opportunities that could not otherwise be implemented (roaming object or object in an open environment).

The technological complexity inherent in M2M solutions delayed the market's development for a long time. It was initially confined to proprietary approaches to applications employed in-house by a handful of sectors for which M2M held obvious economic advantages.

…to the Internet of things

More recent technological developments make it possible to imagine making any object capable of communication, even one devoid of electronic components. An array of innovations from the field of electronics will act as catalysts. The miniaturisation of circuits makes it possible to target any size of object; progress being made with batteries ensures long lifespans without the need to recharge. Alternative solutions, such as e-paper, allow an object to serve as a display medium. And, finally, multiple sensors make it possible to collect a range of information (physical or geographical characteristics).

The most outstanding innovation nevertheless remains RFID. Using HF and UHF technologies, passive RFID tags make it possible to supply an ID that can be consulted remotely without using power. These are the most transparent identification technologies from the user's perspective, enabling the creation of an Internet of things. Capable of adapting to uneven surfaces, an RFID tag can be stuck or printed (chipless tag) onto any object.

Associating the code embedded in the tag with a database managing the codes, and then with different applications via an Internet connection opens the way to a whole range of new applications whose purpose is to provide additional information. In the food industry, for instance, users could automatically obtain contraindications on a product (allergy, dietary, presence of a GMO…). Tourists could obtain useful information about a location. One of the core applications will no doubt be price comparison, reproducing on the spot what online price comparison engines do. All of these new applications go more towards improving customer service with respect to physical products, rather than to creating new standalone services.

What business model to satisfy everyone along the chain?

For the market to develop, some players will need to redefine their business models. The system primarily enables cost reductions for players at the end of the logistics chain (distributors/retailers). The producers of different objects are thus making slow progress in the area of RFID, despite the demands of retail chains (the technology being confined for now to palettes, and thus not equipping individual items) as it principally represents a cost and generates little new income. Manufacturers are also in no hurry to tag products since the prime beneficiaries would likely be third parties who would use the tags only to enhance their own services, such as for the purpose of price comparison.

The Internet of things does hold promise, but it will be some time before it expands beyond manufacturing circles. It does not involve a transition, the way M2M does, but rather a new paradigm that requires sizeable investments at all levels, with no real certainty as yet on the returns. It does seem likely that the Internet of things will not take off until retailers or manufacturing consortia, or other types of player (local authorities for tourism or environmental purposes) become involved in installing the first building blocks of the future infrastructure.

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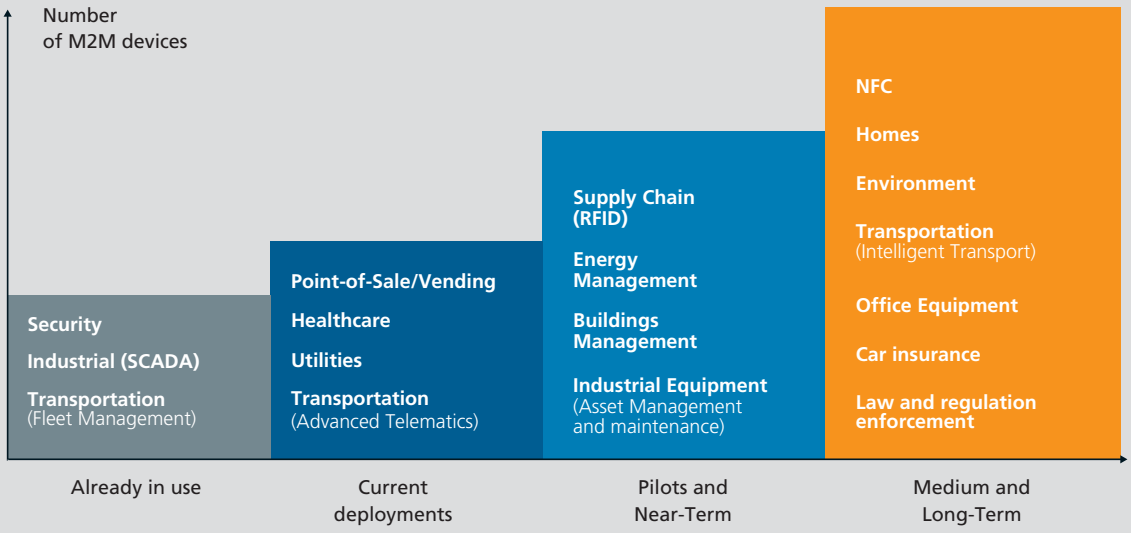
Potential communicating device market in Western Europe in 2008

Type of machine	Number of machines (million units)	
Meters (electricity, water, gas)	300	
Personal vehicles	200	(of which 15 new more a year)
Company/private vehicles	30	(of which two new more a year)
Vending machines	10	
Alarm and security systems	30	
Lighting systems	20	
Point of sale systems	10	
Office equipment (photocopiers)	10	

Source IDATE

M2M: the new application domains

M2M development by vertical industry



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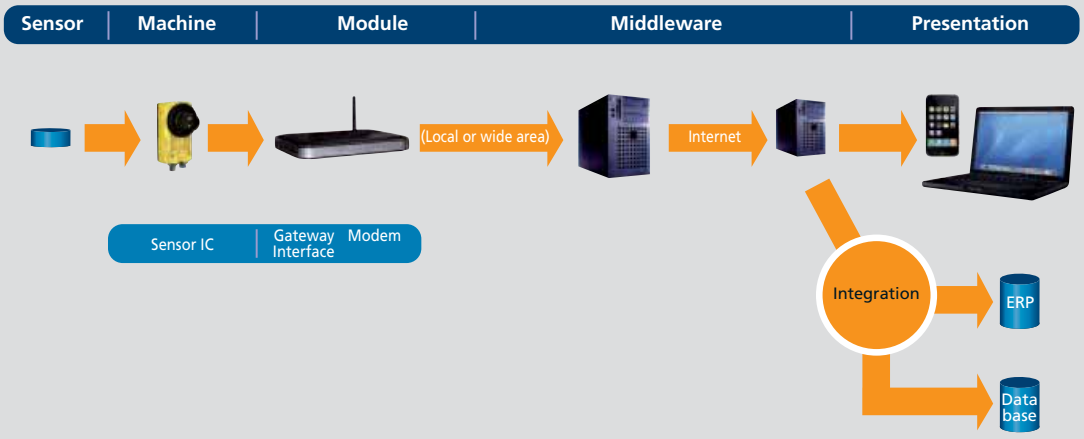
M2M: the complexity of technical integration

Architecture of an M2M solution



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DigiWorld Chronicle

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- Telecom equipment supplier **Nokia Siemens Networks** takes control of **Apertio**, a UK-based firm specialised in fixed and mobile network software, for around 140 million EUR.
- **Microsoft** tables a takeover bid for Norwegian firm **Fast Search & Transfer**, developer of the AllTheWeb search engine, for 1.2 billion USD.
- Launch of open source, community search engine and **Google** rival, Wikia Search, whose results are based on user contributions.
- The President of France states that he is "considering the complete removal of advertising on public television channels which could be financed by a tax on ad revenue earned by private channels, and an infinitesimal tax on new forms of communication, such as internet access and mobile telephony".
- American video game publisher **Electronic Arts** acquires **BioWare** and **Pandemic Studios** from **VG Holdings** for 810 million USD.
- **Ticketmaster** takes control of the second largest online ticket seller, **TicketsNow**, for the sum of 265 million USD.
- After having had its first offer rejected for being too low, **Oracle** acquires **BEA Systems** for 8.5 billion USD.
- American IT heavyweight **Sun Microsystems** acquires Swedish firm **MySQL**, a developer of open source software for databases, for a total one billion USD, including 200 million USD in debt takeover.
- **Safran** has finalised the sale of a 70% stake in its **Sagem Communications** subsidiary to **Gores Group**, based on a company valuation of 383 million EUR.
- Spanish incumbent telco **Telefónica** will increase its stake in **China Netcom** (CNC) from 5% to 7.22% for 309 million EUR.
- **Sprint Nextel**, the number three cellco in the US, has announced a restructuring plan that includes the layoff of 4,000 employees (over and above the 5,000 layoffs in 2007), the closure of 125 points of sale and a reduction in outsourcing contracts, to generate savings of 700 to 800 million USD a year.
- **Saudi Telecom**, the largest telecom carrier in the Arab world, in terms of market value, acquires 35% of **Oger Telecom** for 2.6 billion USD.
- Via its Hungarian subsidiary, **Magyar Telekom** Nyrt, **Deutsche Telekom** is one of the three candidates selected by the Slovenian government for the acquisition of a 49.13% stake in the county's incumbent carrier, **Telekom Slovenije**.
- Brazilian fixed telco **Telemar** is negotiating the takeover of rival **Brasil Telecom**, for a sum that could reach 2.7 billion USD.
- Japanese mobile operator **NTT DoCoMo** increases its share of Philippine operator, **PLDT** (Philippine Long Distance Telephone), from 6.7% to 13.34%, for the price of 86.7 billion JPY (560 million EUR).
- In exclusive talks since October, **Sanyo Electric**, the world's tenth largest manufacturer of mobile phones, at last signs a deal with **Kyocera** for the sale of its mobile division, for 40 billion JPY (260 million EUR).
- French media regulator, CSA (Le Conseil Supérieur de l'Audiovisuel français) has received 36 applications, including two from **Orange** (France Télécom group), for 13 personal mobile TV channel licences, which are due to be awarded in April 2008.
- Software giant **Microsoft** is working to beef up its virtualisation technologies by taking over California-based firm, **Calista**, and through a collaboration agreement with **Citrix**, another virtualisation specialist.
- **Nokia** announces the closure of its last mobile handset plant in Germany (2,300 employees) and its move to Romania.
- Media titan Rupert Murdoch, Lachlan Murdoch, and Australian gambling magnate, James Packer, launch a joint takeover bid of 3.3 billion AUD (2 billion EUR) for the firm **Consolidated Media** Holdings (CMH), which owns 25% of pay-TV operator, **Foxtel**, 27% of job search site, Seek, and 25% of PBL Media.
- **Walt Disney** enters the fiercely competitive mobile market in Japan, announcing the launch in March of the country's first MVNO, which will be based on the **Softbank** network.
- Japan's leading mobile operator, **NTT DoCoMo**, signs a partnership deal with **Google** that covers four areas of operation: integration of the Google search engine in the NTT DoCoMo mobile portal, gradual addition of other Google applications on the operator's i-mode platform, the joint development of phones based on Google's Android OS and the creation of new marketing tools.
- In a bid to strengthen its position in the digital TV market, Franco-Italian semiconductor maker **STMicroelectronics** acquires **Genesis Microchip**, an American firm specialised in ICs for video processors, based on a corporate valuation of 336 million USD.
- **Nokia** takes control of Norwegian software publisher **Trolltech** for roughly 844 million NOK (106 million EUR).
- The British government orders **BSkyB** to reduce its stake in **ITV** to below 7.5% – from the current 17.9% that it has controlled since November 2006.
- American IT hardware giant Cisco launches a new ultra-fast broadband data transfer platform, the Nexus 7000, a switch capable of data transfers running at 15 TBPS.

Mobile TV: growing number of rollouts

2008 will stand out as an important year in the development of broadcast mobile TV, marked as it was by the launch of four services: in Switzerland, the Netherlands, Austria and Germany. A number of major uncertainties persist on the issue of the business model to be used, and results of pioneer services have not managed to eradicate them.

An initial model, which is applied in Italy, the Netherlands, Switzerland, Germany and the United States, is built around a fee-based service marketed by a mobile operator solely to its own customers, with the operator subsidising compatible handsets in exchange for customers' commitments to a 12- or 24 month contract. The success of TV packages launched with this model has fallen short of expectations, which can be attributed largely to excessive prices that are out of sync with how much time users spend watching mobile TV. This is especially the case given that it is not yet a standard part of mobile users' consumption habits, and operators need to find ways to encourage regular and lengthy viewing. In other words, watching TV programmes on a mobile phone is still in its early days: something that is done occasionally by a minority of mobile users for whom these fleeting viewings do not justify increasing their monthly bill by 10 or 20 EUR a month.

In addition, the selection of programmes offered on broadcast mobile TV service often falls short of users' expectations as well, as the most common desire is to have their favourite shows available to watch on their cellphone.

The second model, namely a free service, is the one used in Japan and South Korea. Their appeal is sustained by being cost-free and offering an attractive selection of programmes including the simulcast of the top free-to-air terrestrial channels. These services are very popular: South Korea's T-DMB package had a base of 10.3 million users as of March 2008, while Japan was home to just over 20 million mobile phones compatible with the One-Seg mobile DTT package at the end of 2007. Although the fact of being free has ensured the popularity of the mobile terrestrial TV offers in South Korea and Japan, it has not ensured their profitability. In both cases, channel operators have opted to be financed solely by advertising, which has proven a largely insufficient source of income so far. In 2007, the T-DMB service in South Korea generated only 6 million USD in revenue, compared to operating expenses totalling 40 million USD. To compensate for the inadequacy of this income, equipment manufacturers have been obliged to help finance broadcasters' operating costs in South Korea, paying them the equivalent of 2 EUR per T-DMB-compatible handset sold.

The business model used by these free-to-air services could evolve in the near future: in South Korea, mobile TV service providers plan on capitalising on the size of their viewership to develop fee-based services (content downloads and such practical services as weather and traffic) and to diversify their sources of revenue to relieve them from being dependent solely on advertising.

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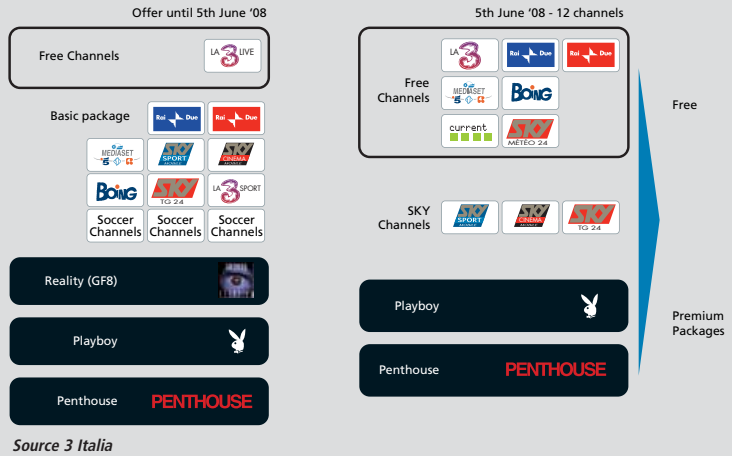
Changes in 3 Italia's DVB-H mobile TV solution



Source 3 Italia

- As announced in July 2007, and having got the green light from the competition authority, French cellular operator **SFR** takes control of MVNO **Debitel** in France (100,000 clients, 63 Videlec retail outlets).
- **Microsoft** tables a 44.6 billion USD takeover bid, in cash and shares, for internet giant **Yahoo!.** To counter the move, Yahoo! is rumoured to be examining an alliance with rival titan, **Google**, and has officially rejected Microsoft's offer.
- In France, the professional football league (LFP) announced that it had sold the broadcasting rights to premier league (Ligue 1) football for 2008 to 2012 to **Canal+** and **Orange** for 668 million EUR a year (of which 465 million EUR for Canal+).
- European commissioner for Information Society, Ms. Viviane Reding has asked that mobile operators make significant cuts to their data roaming tariffs by 1 July 2008 to avoid the consequences of new regulation.
- Equipment manufacturer **Alcatel Lucent** and Japan's **NEC** have created a joint venture devoted to developing 4G mobile infrastructure (LTE).
- India's **Tata** conglomerate is moving all of its telecom infrastructure provider activities under the **Tata Communications** umbrella, a new division that combines the operations of **VSNL** (Videsh Sanchar Nigan Limited), an operator and ISP serving the business and residential markets, **Tyco Global Networks** (undersea cable provider), Canadian firm **Teleglobe** (supplier of international voice, wireless and IP data services, acquired by Tata in 2006) and **Cipris**.
- The French government unveils its legislative measures for stimulating ultra-fast broadband rollouts in apartment buildings: pre-wiring in new builds, a provision similar to antenna rights to facilitate co-owners' access to fibre and operator sharing of the infrastructure installed in buildings.
- **Telecom Italia** announces the creation of an autonomous division in charge of managing access to its fixed network that will operate independently of the group's commercial business.
- Incumbent carrier **Belgacom** acquires **Scarlet**, a broadband ISP that operates in Belgium (180,000 clients) for 185 million EUR.
- In France, the Conseil d'État states that the 619 million EUR price tag for country's fourth mobile licence could be had in staggered payments if the market conditions changed between 2002 and 2008.
- American cellcos are allowed to put an end to their analogue network operations which began in the 1980s.
- American firm **West Corporation** signs a takeover agreement for **Genesys**, a French company specialised in teleconferencing solutions for businesses, for around 182.9 million EUR.
- Japanese CE heavyweight **Toshiba** confirms that it is putting an end to the production of HD-DVD players and recorders, confirming victory in the standards war for **Sony**'s Blu-ray.
- **Orange** (**France Télécom** group), **Thomson** and **Sagem Communications** create the **SoftAtHome** joint venture (Orange, 60%; **Thomson** and **Sagem** 20% each) dedicated to promoting a common standard that would allow different brands of home equipment to communicate.
- South Korea's Ministry of Information and Communication (MIC) gives its conditional approval to **SKT**'s acquisition of a 39% stake in **Hanaro Telecom**.
- The **Lagardère** group takes control of the **Doctissimo** website for 138 million EUR.
- Six international telecommunications companies (**SingTel**, **Bharti Airtel**, **Global Transit**, **Google**, **KDDI** and **Pacnet**) join forces to install a new undersea telecom cable between Japan and the United States, at a cost of 300 million USD (scheduled to be operational by Q1 2010).
- Russia's largest operator, **OAO Mobile TeleSystems** files a bid for a stake in **VAT Ukrtelecom**, of which the Ukraine government currently owns 92.8% but is looking to sell off 67.7% for 7 billion USD.
- Morocco's incumbent telco **Maroc Telecom** takes control of **Gabon Telecom** (51%) for 150 million EUR.
- To maintain a balance between French and Italian State-owned shares (13.75% each), the French government decides to acquire roughly 2.85% of the world's leading semiconductor supplier, the Franco-Italian joint venture **STMicroelectronics**, from Italian firm **Finmeccanica** for around 260 million EUR.
- The FCC (Federal Communications Commission) gives the go-ahead for the deal between **News Corp**. and **Liberty Media**: Liberty Media will sell back its stake in News Corp. in exchange for control of **DirecTV**.
- Brussels slaps **Microsoft** with a new record fine of 899 million EUR for abuse of dominant position, bringing to 1.68 billion EUR the total fine levied on the Seattle giant.
- WiMAX licences, which have brought in a total 136 million EUR for the Italian government, are altering the competitive landscape, ushering in three new operators (**AriaDSL**, **eVia** and **AFT-Linkem**) while veteran players **FastWeb** and **Mediaset** were left out in the cold.

The future of mobile communications

Whilst mobile revenue growth is slowing down, data is showing a better growth rate. Data revenue shares are increasing at the expense of voice, and data ARPU is on the up. SMS accounts for the lion's share of data revenue, but SMS alone can no longer sustain revenue growth. Growth can come from new communication services.

Users are now familiar with dedicated communication services on the fixed Internet:

- Instant messaging (IM) is showing huge penetration especially among the young users. There are also interesting geographical disparities regarding IM applications used. Social networking services (SNS) are the other communication methods seeing a huge rise in usage.
- Facebook leads the pack, and also contributed to spreading its use across elder generations by allowing users to find and keep in touch with childhood friends and old classmates.
- Other forms of communication are also coming into play, such as wall-to-wall communication and micro-blogging, which can be seen as more synchronous approaches on top of SNS.

Today, users want both Internet and mobile telephony worlds, to take advantage of unlimited usage and presence features that exists in the world of fixed messaging, together with the mobility and total interoperability present in the world of mobile.

IDATE believes that there will be two main movements working in parallel to shape the near future of mobile communication. This will be the Rich Communication Suite (RCS) initiative, and advancements in mobile SNS.

- The RCS can be seen as an enhancement of the current mobile phone. Key success factors discussed include the supporters of the initiative, network interoperability, handset interoperability, the presence enabled phonebook and pricing strategies. It is expected to launch firstly in Western Europe by end-2009.
- The mobile SNS applications provide users with community activity capabilities like those available on the fixed applications, and its influence in the mobile environment is set to increase. Interoperability exists between mobile and fixed on the same SNS applications, but whilst there are promising signs of progress, interoperability between differing applications will still take time.
- Where there is overlap between RCS and SNS is in messaging. Both provide IM for synchronous communication, and SMS (RCS) or posts (SNS) for asynchronous communication. IDATE predicts that messaging through SNS will be used for contacts within the SNS as an easy-to-use extension to community activities, whilst the RCS services will be used for other contacts.
- Potential threats for operators lie in mobile VoIP and over-reliance on partnerships with Web 2.0 services. However, VoIP still has many barriers of entry to overcome and hence IDATE predicts it will not have a great effect in the near future. In the latter case, operators need to ensure not all messaging ends up being done through the SNS, as this could cannibalise the current messaging (mainly SMS) revenue.

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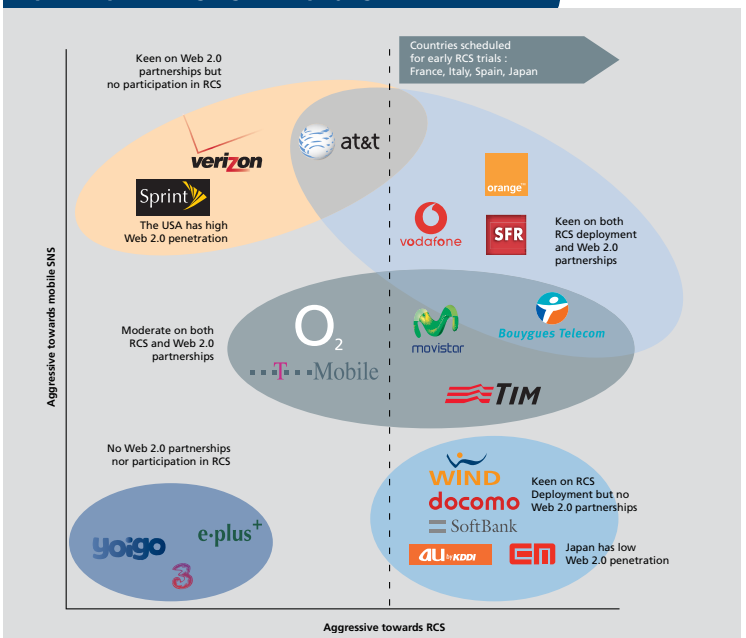
Operator positioning regards deploying RCS/SNS services



Source IDATE

- **Walt Disney** Japan, the Japanese subsidiary of the American entertainment giant, becomes the first mobile virtual network operator (MVNO) in the country by launching the "Disney Mobile" brand, in collaboration with Japan's third largest local operator, **Softbank**.
- Taiwanese IT giant, **Acer**, the world's third largest PC manufacturer, takes control of **E-Ten Information Systems**, a local company specialised in producing portable devices (pocket PCs, smartphones) for around 9 billion TWD (289 million USD) in a share swap.
- **Mitsubishi Electric** is pulling the plug on its mobile handset production to focus on other telecom-related activities, industrial machinery and production chain automation.
- **France Télécom** acquires **Cityvox**, a company specialised in online "going out" and entertainment guides.
- Having obtained the unconditional approval of the European Commission, after having got the green light from the US Federal Trade Commission back in December 2007, **Google** is able to go ahead with its takeover of online ad specialist, **DoubleClick**, for 3.1 billion USD.
- The European Commission gives the nod to a French subsidy of 99 million EUR for audio and video search engine, **Quaero**, which became an essentially French concern after Ger-man investors pulled out in late 2006.
- **AOL** takes over the **Bebo** social network (40 million users and the number one social network in England, New Zealand and Ireland, and number three in the United States) for 850 million USD (545 million EUR).
- Germany's incumbent carrier, **Deutsche Telekom**, acquires a 20% stake in its Greek counterpart, **OTE**, for 2.5 billion EUR and hopes to increase its share down the road.
- Auctions for mobile frequency licences brought in 19.6 billion USD to US government, in line with what financial analysts had predicted. **Verizon** (which only just edged out **Google** in its bid for a block of national frequencies) and **AT&T**, were the two big winners, spending a combined total of more than 16 billion USD.
- Having got the go-ahead from American authorities, the takeover of **XM Satellite Radio** by rival **SIRIUS**, for 1.3 billion USD, goes into effect and gives birth to the country's largest, subscription-based satellite radio company.
- US private equity firm, **Carlyle Group** finalises its acquisition of a 37.8% stake in France's leading cableco, **Numericable** and investment in telecom operator, **Completel**, for a total 1.1 billion EUR.
- American telecom equipment titan, **Motorola**, announces the spin-off of two of its divisions, which will be listed separately on the stock exchange: mobile handsets (currently in the red) and network infrastructure.
- **Gilat Satellite Networks** has been acquired by a consortium of private investors for 475 million USD.

CBS Radio launches a new player

Play.it, the new online media player from CBS was launched in May 2008. It brings together all of the CBS network's radio stations (around 150 broadcast stations and 20 purely Internet radio stations) and the 200 stations from the AOL network. It also makes it possible to listen to stations created by users.

In addition to listening to live broadcasts, the service, which draws on a catalogue of some 1.3 million songs, offers users the ability to create their own station based initially on the music of a given artist: once the listener has input that name into the site, Play.it generates a station of similar musicians/groups. The user can then streamline the station in several ways such as rate the songs or remove a group.

Registered listeners can also have more complete access to Play.it tools. In their personal space, they can record and edit customised stations composed of their favourite singers, albums and songs. To do so, they need to put their names on a target; they then place the artist, album or song near the centre of the target – the closer it is to the bull's-eye, the more influence it will have on what is suggested for their station, although items can be tagged as equal so they will have the same degree of influence on the choice of other music.

Users can also affect the content of their radio station by indicating the depth of range by dragging the cursor over a graded scale that goes from 1 to 11: from "The hits" to "Go deep".

The launch of the CBS Radio player has a strong strategic component to it. Some radio networks have opted to create sites built around their own brand, but they automatically risk losing listeners to the more open audio services being offered by their online competitors. The ultimate outcome is to incorporate listening to the radio into the main Internet applications of instant messaging, search engines and social networking. Moreover, as users spend more and more time on the Web, the added value for radio stations drops a notch, from production to aggregation. This means that for those involved in open radio syndication strategies, control over the player is key but also a strategy available only to the heavyweights – the player allowing them to earn a portion of the advertising revenue generated by the circulation of radio streams, whereas other stations will need to develop in-stream advertising.

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Three models of Web radio development

Model	Spinoff	Aggregation	Syndication
Vision	Radio brands and formats are transferred to the Internet	Radio website is a portal and community network Player aggregates online broadcast radio streams.	Radio streams are integrated with Internet consumption.
Key position in the value chain	Publishing	Aggregation	Distribution
Web radio formats	Broadcast radio simulcasts Broadcast radio spinoffs Enhanced video content and e-commerce	Content adapted to online consumption Smart radio features and functions ntroduced in connection with broadcast brands	Smart radio service launches
Social network	Interaction of listeners and radio hosts/journalists	Interaction between listener and radio stream and listener-to-listener.	Integration of radio streams with major community sites, portals, and instant messaging.
Distribution	Destination site	Destination site + player available on third-party sites	Provision of streams
Advertising formats	Advertising banners on destination site	Advertising banners on site plus instream advertising	Instream advertising
Ad sales	Broadcast and online sales integrated	Broadcast and online sales integrated	Specialized Internet sales with syndicated advertising space
Strengths	Control of audience and of advertising revenue	Traffic repatriated to destination site Multiple advertising formats on the player	Facilitates online radio consumption despite competition (from PC-based audio content and smart radios integrated with community networks)
Weaknesses	Competition between destination site and main consumption sites on the Internet	Player installation difficult for user.	Audience measurement and monetization difficult Banner advertising model evolving to instream advertising mode

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- Dutch-American audience rating and market survey specialist, **Nielsen**, announces its takeover of **IAG Research**, an American firm that specialises in measuring ad performance, for 225 million USD in cash. The deal is to be finalised in the second quarter of 2008.
- **Lagardère Active** acquires **Digitalspy.co**.uk, touted as the largest independent entertainment portal in the UK (over 2.1 million unique visitors a month to its main site and 3.1 million on its forums).
- Franco-Italian semiconductor manufacturer, **STMicroelectronics** and Dutch firm, **NXP**, create a joint venture (80% STM; 20% NXP) dedicated to incorporating the two companies' components and wireless technologies businesses. Also integrated into the venture will be the wireless operations of **Silicon Laboratories** and **Glonav**'s GPS business, which were recently acquired by NXP.
- The Australian government launches a call to tender worth 9.4 billion AUD (5.5 billion EUR) for the construction of a national ultra-fast broadband fibre optic network, in a bid to make up for lost time and to improve the country's competitiveness on the world stage.
- Slovenia's telecom regulator, Apek, awards a 3G licence to local operator, **Tusmobil**, for free as no other candidates bid on the licence at auction.
- Swedish firm, **Ericsson**, the world's largest mobile network supplier, has signed two contracts with China's top two cellular operators, worth a total 1.44 billion USD (909.3 million EUR) for the extension of their GSM networks (1.3 billion USD for **China Mobile** and 144 million USD for **China Unicom**).
- **Time Warner**'s internet division, **AOL**, acquires blog search engine, **Sphere**, which was created back in 2005. Time Warner has also begun the spin-off of the two AOL divisions (con-tent and online services).
- The American subsidiary of Japanese consumer electronics giant, **Sony**, will be acquiring California-based firm, **Gracenote**, best known for its internet-accessible databases of the contents of music CDs, for 260 million USD (163 million EUR).
- **Apple** takes over **PA Semiconductor**, designer of a dual-core 64-bit Power PC chip, for 278 million USD.
- Seven mobile industry heavyweights, **Alcatel Lucent**, **Ericsson**, **NEC**, **NextWave Wireless**, **Nokia**, **Nokia Siemens Networks** and **Sony Ericsson** finalise a licensing framework for their patented technologies as part of the LTE project (Long Term Evolution, 4G network technical specifications), agreeing to a «principle of fair, reasonable and non-discriminatory licensing terms for essential patents.»
- Brazilian carrier, **Oi**, takes control of rival operator, **Brasil Telecom**, for 2.25 billion EUR. The takeover will give birth to a national titan with control over roughly 70% of Brazil's telephony market and capable of competing with Spanish giant, **Telefónica**, and Mexican heavyweight, **America Movil**.
- German operator, **Freenet**, acquires its competitor, **Debitel**, from British private equity firm, **Permira**, for 1.63 billion EUR and so becomes Germany's third largest cellco.
- Japanese telecom operator, **Japan Telecom**, announces the upcoming launch of a 3G mobile offer that will be the first ever to use IP to transport voice over a cellular network.
- American media company, **Cox Enterprises**, which owns newspapers, TV channels, radio stations and the country's third largest cableco, **Cox Communications**, acquires the start-up **Adify** (specialised in ad network solutions) for 300 million USD.
- **France Télécom** subsidiary, **Orange Slovakia**, has won the tender for Slovakia's fourth mobile telephony licence, for 40 million SKK (around 1.23 million EUR).
- Japanese telecommunications giant, **Softbank**, will be acquiring up to 40% of Chinese social network, **Oak Pacific Interactive** (OPI, an online community for students, with some 22 million members) for roughly 40 billion JPY (257 million EUR).
- Europe's number one video game publisher, **Infogrames**, will be acquiring the remaining 48.6% stake in US firm, **Atari**, for 11 million USD (7.12 million EUR).

Green Telecom

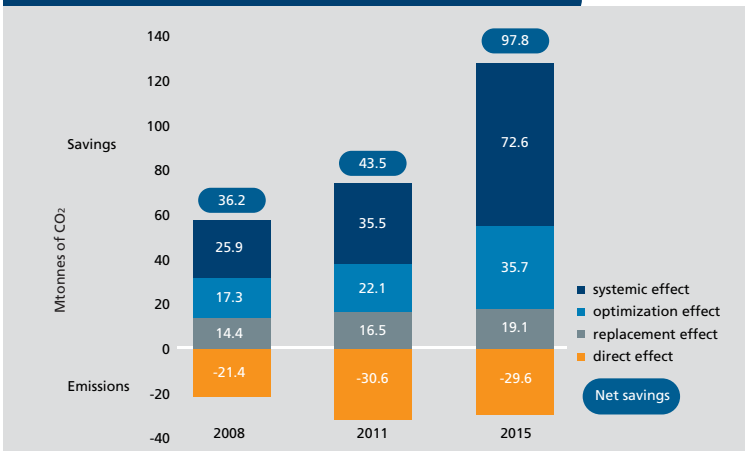
The worldwide telecommunications industry is currently responsible for 183 million tonnes, or 0.7% of CO_2 emissions, a very reasonable amount considering that it represents around 2% of global GDP. The average European mobile phone user is responsible for around 17 kg of CO_2 emissions per year, equivalent to a journey of 111 km ride in an economy car. The average fixed and Internet user will emit 44 kg, as much as a 289 km trip. These remarkably sober performances are only slightly influenced by the desire to be green: mobile phones are very power-efficient in order to have longer battery life, and power savings in fixed networks are mainly driven by the desire to control costs.

The telecoms industry could easily promote itself as an environmentally sound one, yet this would lend itself to much criticism for there is still room for significant improvement in its own behaviour. Each part of the value chain is responsible for significant CO_2 emissions.

As the telecommunications market grows, so too will its emissions, unless specific measures are implemented by all players in the carbon chain. Four carbon 'hotspots' have been identified where significant CO_2 savings can be made: datacentres, radio base stations, fixed network access equipment and mobile handsets.

Emissions are expected to continue to grow over the next four years (see figure), as the industry continues to expand and CO_2 savings measures are slow to implement. However, in the medium and long term, savings should outstrip industry growth and lead to a reduction in emissions throughout the industry.

Balance of internal CO_2 emissions and external CO_2 savings



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An opportunity for the telecoms industry

Telecommunications have the potential to help to reduce other industries carbon emissions in three ways:

- the use of telecoms by companies in other sectors helps them to replace CO_2-intensive activities with CO_2-light alternatives;
- telecoms can help to optimise supply chains and reduce transportation of goods, or allow more precise management of office lighting and heating, or industrial equipment;
- the spread of telecoms throughout society brings vast amounts of social and organisational change. New consumption patterns emerge, and new ways of organising business appear.

Balancing direct emissions and savings enabled

The telecommunications industry can reduce its own CO_2 emissions, but its most important role in stopping global warming is the possibility it gives to other sectors and the general public to save carbon. By replacing or optimising emissions in all industries, and enabling structural change that leads to a world less reliant on fossil fuels, telecoms generate savings far greater than their own footprint.

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- The President of Bolivia announces the renationalisation of **Entel**. **Telecom Italia**, which had taken control of the incumbent carrier and was poised to acquire it outright, was hit with several million USD in fines for poor quality of service and a lack of investments.
- **Microsoft** pulls its offer for **Yahoo!**, the world's second largest earner of online ad revenue, having failed to reach an agreement on the price tag after three months of negotiations.
- **Microsoft** plans on investing 280 million USD in a research centre in China, devoted in large part to 3G telephony, and which would be the company's largest R&D centre outside the United States.
- **Intel**, **Google**, **Comcast** and **Time Warner** join forces with **Sprint** and **Clearwire** to relaunch the latter's WiMAX project, in response to announcements from **AT&T** and **Verizon** on the introduction of LTE-based offers in 2009. The joint venture, carrying the Clearwire brand, will build a mobile broadband access network that will be operational within two years, and use the frequencies licensed to Sprint and Clearwire.
- The European Commission launches a public consultation on roaming to determine, first, whether to perpetuate measures for supervising Eurotariffs for voice services beyond mid-2010 and, second, whether to extend the measures to roaming tariffs for text messaging and mobile internet.
- Five operators, **TeliaSonera**, **Telenor**, **Tele2** (LTE technology), **Intel Capital Corporation** (mobile WiMAX) and **HI3G Access** (a subsidiary of Hutchison Whampoa Investor which could launch the service using HSPA+) have been awarded 15-year 4G cellular licences at auction in Sweden.
- **Best Buy**, the world's largest consumer electronics retail chain, has put 2.1 billion USD into Europe's largest mobile phone retailer, Carphone Warehouse to create a joint venture that will own 2,400 points of sale carrying the **Carphone Warehouse** and Phone House brands, and operating in nine countries across Europe.
- **Alcatel Lucent** and Indian firm, **Reliance Communications**, create a joint venture for providing managed network services to CDMA and GSM network operators the world over.
- American cable company **Cablevision** takes over the newspaper, Newsday, from the **Tribune** media group for roughly 650 million USD.
- European competition authorities give their unconditional approval for the takeover in the Netherlands of digital map specialist, **Tele Atlas**, by fellow Dutch firm, **TomTom**, Europe's leading manufacturer or handheld GPS devices, for 2.9 billion EUR
- Radio and display giant, **Clear Channel**, signs a 17.9 billion USD (11.5 billion EUR) takeover agreement with private equity firms, **Thomas H. Lee Partners** (THLPartners) and **Bain Capital Partners**.
- **Deutsche Telekom** acquires an additional 3% stake in incumbent carrier, **OTE**, from the Greek State, bringing its total share to 25% after the acquisition of a further 2% on the public market.
- Having got the green light from the financial markets authority in France, cellular operator **SFR** can go ahead with its simplified takeover bid for the remaining 20.13% share of **Neuf Cegetel**.
- American TV network **CBS** takes over online news specialist, **CNET Networks**, for around 1.8 billion USD and so becomes one of the 10 largest online companies in the United States in terms of traffic, reporting 24 million unique visitors a month.
- **Vodafone** gets the go-ahead from telecommunications group Arcor's minority shareholders, **Deutsche Bahn**, **Deutsche Bank**, for the sale of their 26.4% stake in the company, for the price of 474 million EUR.
- The globe's largest media company, Time Warner, sells **Time Warner Cable**, the second largest cableco in the US, of which it owned 84%.
- Talks with **Bharti Airtel** having broken down, South African mobile telephony group, **MTN**, begins exclusive negotiations with Indian conglomerate, **Reliance Communications**.
- China is reorganising its telecom operators with the award of 3G licences. The long-awaited reform of the country's telecommunications sector confirms the creation of three integrated (fixed-mobile) operators: **China Mobile** will be given the fixed services assets controlled by the railroads, **China Telecom** will acquire **China Unicom**'s CDMA operations and **Netcom** will take over Unicom's GSM business.
- Japanese electronics specialist, **OKI**, will be spinning off its semiconductor business in October which it will then sell, almost entirely, to its Japanese rival, **ROHM**, for an estimated 85.5 billion JPY (535 million EUR).

The Internet generation changes habits when entering the workforce

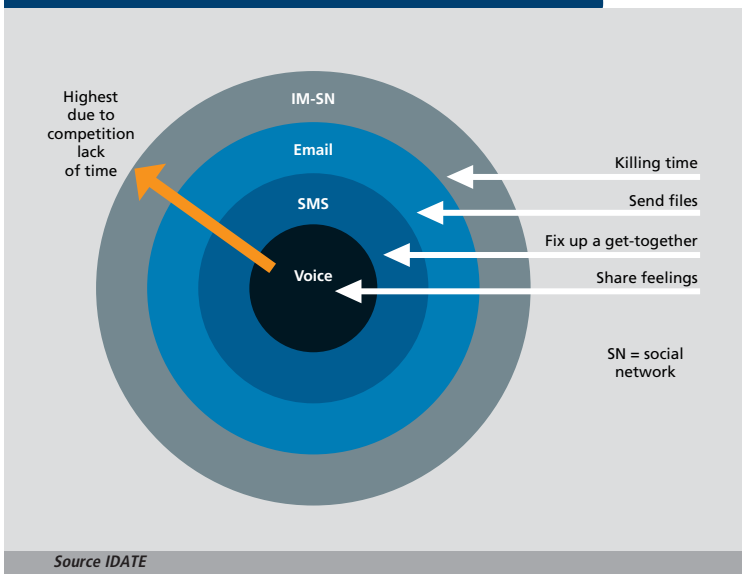
IDATE's annual Use-IT survey has revealed that young consumers' calling habits change when they enter the workforce.

Young users have established a clear hierarchy for their communications: voice for communicating with close friends and family, texting for arranging to meet with friends, e-mail to send files, and instant messaging and chatting over social networks – both of which are considered pastimes.

Voice is still the preferred means of communication for teenagers, including those who belong to a social network. Most young consumers say they use voice calls more once they have entered the workforce, and make more mobile calls especially. In addition to the phone, young workers make greater use of e-mail and texting, and spend less time on IM, social networks and online message boards.

Social networking has enabled the emergence of new and innovative forms of communication, one example being wall-to-wall communication that lets users post messages, photos and other items. to another member's page. Unlike instant messaging, these do not require an immediate response.

Time trade-offs / means of communication once in the work force



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Another example is micro-blogging, as embodied by Twitter, which lets users send short messages out to keep friends informed of what they are doing at any given moment.

Young consumers appear to have no great expectations of the mobile Internet, viewing it largely as an extension of fixed Internet access, for urgent or occasional use. From a more general perspective, mobile calls are viewed as a complement and not a substitute for fixed line communications.

As a result, we can expect four trends in particular to develop over the medium term:

- growing use of mobile e-mail and its convergence with SMS;
- stagnation of instant messaging: the number of users will increase with the addition of mobile but consumption will not be heavy;
- social networks will benefit from being carried over to mobile, but only a small fraction of the services they offer will be compatible with the constraints of a mobile handset;
- the still poor ergonomics of video telephony will limit its development potential.

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- **France Télécom** announces that it is making a friendly takeover bid for its Nordic counterpart, **TeliaSonera**. France Telecom is offering 32 to 34 billion EUR, including debt, to take control of the Swedish-Finnish group. After several weeks of back and forth, having failed to reach an agreement and facing market opposition, the French incumbent puts an end to negotiations.
- After a failed bid in 2006, US telco **Verizon** takes over America' fifth largest mobile operator, **Alltel**, for 28.1 billion USD from private equity firms that had bought it seven months earlier, making Verizon the largest mobile operator in North America, ahead of **AT&T**.
- Canadian telecommunications equipment manufacturer, **Nortel,** transfers its WiMAX business to a joint venture with Israeli firm, **Alvarion**, and concentrates its direct investments on LTE technology, in preparation for 4G mobile telephony.
- Seven Japanese CE giants (**Sony**, **JVC**, **Pioneer**, **Sharp**, **Panasonic**, **Hitachi** and **Mitsubishi Electric**) along with movie studios and producers (**Walt Disney**, **Sony Pictures**, **Paramount**, etc.) create an association in Japan devoted to speeding up the adoption of the Blu-ray high capacity DVD format designed by Sony, and now the only one in the market.
- American internet giant **Yahoo!** announces that discussions with **Microsoft** for a full or partial takeover have ended thus closing the saga that began back in February when Microsoft had made a buyout offer of 47.5 billion USD. At the same time, Yahoo! announces an agreement with **Google** in the area of online advertising.
- German radio and television conglomerate, **ProSiebenSat1**, will be selling its pay-TV division, **C More**, which operates in Scandinavia (Denmark, Norway, Finland and Sweden), to Sweden's **TV4** (Bonnier Group), for around 320 million EUR.
- Joining forces with **General Electric**, **Blackstone** and **Bain Capital Partners**, US media giant **NBC Universal** has begun negotiations for the takeover of the **Weather Channel** cable network for 3.5 billion USD.
- Japan's leading telecom carrier, **NTT DoCoMo**, will be acquiring a 30% stake in its Bangladeshi counterpart, **TM International** (Bangladesh) Limited (TMIB), for around 350 million USD.
- French IT company, **Bull**, acquires **CSB Consulting**, a specialist in value-added IT services (consulting, infrastructure management, project management) from European institutions from the public and banking sectors in Belgium and Luxembourg.
- **Alcatel Lucent** signs a one-billion USD framework agreement with operator **China Mobile** for upgrading and expanding its mobile network.
- The Supreme Court of Canada gives the green light on the sale of national telecom giant, **BCE** (Bell Canada), to Canadian and American private equity firm, opening the way to the country's largest ever takeover (51.7 billion CAD), and the world's largest ever leveraged buyout.
- **Microsoft** is ordered to pay **Alcatel Lucent** 368 million USD (235 million EUR) for copyright infringement, plus interest on the sum ordered in the initial ruling, or a total 512 million USD.
- **Telecom Italia** and **FastWeb** decide to share development costs for their new generation optical fibre networks, to better manage their ultra-fast broadband rollout investments.
- Finnish firm, **Nokia**, the world's largest producer of mobile phones, will be taking over the remaining 52% share of British mobile O/S specialist, **Symbian**, for 264 million EUR.
- The European Commission gives the go-ahead for American media giant **News Corp**'s takeover of German pay-TV operator, **Premiere**, contingent on commitments guaranteeing third-party access to the Premiere satellite platform.
- Indian mobile operator, **Idea Cellular** Ltd., acquires a 40.8% stake in its rival, **Spice Communications** Ltd., for around 507.2 million USD.
- Belgian telco **Belgacom** takes over Swedish carrier **Tele2**'s operations in Luxembourg and Liechtenstein for roughly 212 million EUR.
- The European Commission approves joint ownership of Spanish satellite operator, **Hispasat**, by **Abertis** (Spain) and Spanish public sector enterprises, SEPI, CDTI and INTA.
- **NEC**, Japan's leading mobile phone producer, acquires American telecommunications software publisher, **NetCracker Technology** (service administration and customer management solutions for fixed and mobile networks) for 300 million USD.

What potential for satellite TV in North Africa?

The television market in North Africa (Algeria, Tunisia and Morocco) is dominated by two broadcasting networks: terrestrial and satellite, with cable being very little developed. Less than 10% of TV households receive a digital signal and only 10% have access to a pay-TV service, in large part because of piracy.

Satellite is widely used: 40% of households are equipped, chiefly for receiving free-to-air channels, although several digital pay-TV packages are available in the region.

DTT launches in North Africa are creating a new source of competition for satellite, which is working to cut its costs and enhance its offering to lessen the chances of viewers switching to the new network. Beyond that, once it has consolidated its position in the free-to-air TV market and ensured that it has a large enough base of households equipped with a satellite dish to minimise the rise of terrestrial technologies, satellite TV providers will be able to work on building their share of the pay-TV market.

In addition to the two dominant players, Eutelsat and Astra, other operators are also targeting the North African market. Arabsat is already hoping to take advantage of the replacement of its fleet which will endow it with additional resources at 26.0°E and 30.5°E. It will, however, be competing both with Eutelsat's Eurobird 2 satellite positioned at 25.5°E (formerly called the Hotbird 5 and being leased by Arabsat up until recently) and with Egyptian operator Nilesat which has proven particularly efficient in recent years, boasting a close to 100% fill rate.

Outside of North Africa, 2008 was also the stage for the launch of Daarsat, a satellite pay-TV service aimed at the Nigerian market. Daarsat markets a package of some 50 digital channels, of which a small portion is high definition.

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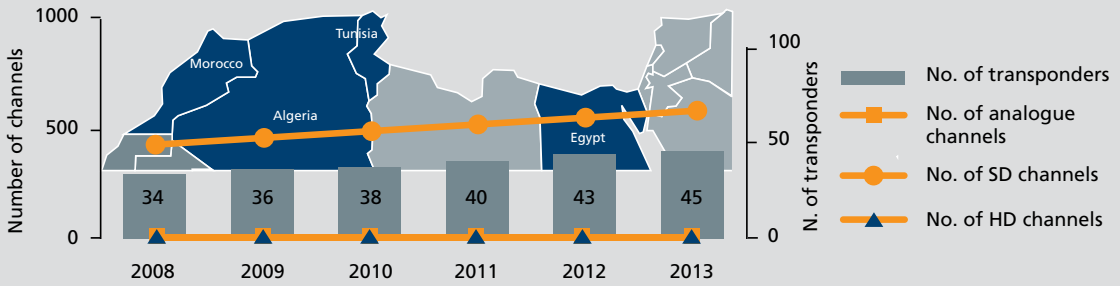
Change in the number of TV channels and transponders in North Africa



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- After getting approval from European anti-trust authorities, Finland's **Nokia** finalises the takeover of digital mapping specialist, **Navteq**, which first announced back in October 2007.
- Russian mobile operator, **Vimpelcom**, whose shareholders include Norwegian operator, **Telenor**, joins forces with the Vietnamese State (Global Tele-communications Corporation and its TSC division) and **GTEL-Mobile** to create a joint venture (40% owned by Vimpelcom) which will require an 1.8 billion USD investment over five years, with the goal of gaining a 15% to 20% share of the Vietnamese mobile market.
- **Vivendi** concludes the takeover originally announced on 2 December 2007, of American video game publisher, **Activision**, through a share swap and cash outlay of 1.7 billion USD. **Activision Blizzard**, the firm created following the takeover, becomes the world's largest video game publisher, ahead of **Electronic Arts**.
- Three days after the release of the new 3G iPhone on 11 July in the United States and some 20 other countries (including the UK, Germany and Japan), **Apple** reports the sale of over a million units, or twice what analysts had predicted.
- British incumbent carrier, **BT**, announces a 1.5 billion GBP (1.88 billion EUR) investment to equip 10 million homes with fibre optic access by 2012.
- Indian mobile operator, **Reliance**, puts an end to two months of negotiations for the takeover of South Africa's **MTN**, having failed to reach an agreement on the price tag with the two brothers who own Reliance.
- In Canada, auctions for licences to spectrum reserved for advanced wireless services (SSFE) and to other frequencies in the 2 GHz band (a total 282 licences awarded to 15 enterprises) brings in 4.25 billion USD for the government.
- **Brocade** Communications Systems, an American firm that specialises in shared storage solutions, will be taking control of US Company, **Foundry Networks**, maker of internet network equipment, for 3 billion USD.
- **Millicom International Cellular** will be taking full control of cable operator, **Amnet Telecommunications**, for 510 million USD, in a bid to increase its foothold in Latin America.
- Struggling American operator, **Sprint Nextel**, has announced that it will be selling 3,300 of its relay antenna to **TowerCo** for 670 million USD in cash, some of which it will then lease back from the firm.
- A 15-year cross-licensing agreement is expected to put an end to the quarrel between **Nokia** and **Qualcomm** over the value of some of their 3G patents. Covering all of their 2G and 3G mobile network technologies, and beyond (HSDPA, OFDM, WiMAX, LTE, etc.), the agreement allows each to use the other's patents freely, with payment of outstanding royalties to Qualcomm (Nokia had frozen its payments) and acknowledgement for Nokia that some of its patents are essential to GSM, WCDMA and OFDM.
- After having taken over **China Unicom**'s CDMA network as part of the Chinese market's restructuring plan, **China Telecom** announces that it will be investing 11 billion USD in its mobile net-work over the next three years.
- Following the announcement of more losses in Q2 2008 (-1.1 billion EUR) after five consecutive quarters in the red, the President and CEO of **Alcatel Lucent** announce their upcoming resignation.
- Turkish mobile phone giant, **Turkcell**, will acquire an 80% stake in Byelorussia's third largest operator, **BeST**, for 600 million USD – the remaining 20% being owned by the State.
- The firm **Safran** announces the sale of its mobile phone division, which it inherited from **Sagem**, to French private equity firm, **Sofinnova Partners**: Safran will keep temporary control of 10% of the new entity, Sagem Wireless, which will specialise in producing handsets for other companies and in custom designed models.

Sony launches its e-book reader

Launched in Europe in autumn 2008, the Reader is Sony's response to Amazon's Kindle. After the failure of earlier endeavours in this area, these initiatives offer proof that the technologies associated with e-paper are approaching maturity. In terms of readability and energy consumption, performance is now satisfactory, making it possible to imagine new applications. The e-book nevertheless remains a niche market with a global base of around only one million readers at the end of 2008.

In the field of publishing, e-paper seems to be best suited to business-related editorial or more arcane content, with a more educational or encyclopaedic style. The e-paper device can hold large volumes of content and be used when on the move, even in extreme environments. E-paper is already used in aerospace applications and is being tested by the legal profession and by various manufacturing sectors (for example, with maintenance manuals). In the realm of consumer applications, e-paper could be used initially for such applications as travel guides.

Several other sectors that are already involved in digitisation are turning to e-paper as well.

- There has been a widespread trend in supermarkets towards smart shelves and electronic tags. Both offer real advantages, thanks to low energy consumption (longer use), good legibility and design. An e-paper tag can display several pieces of information and, for matrix screens, be altered to comply with changes in regulations (such as environmental and nutritional standards). Tags can also be used outside the point-of-sale in logistics chains, in combination with bar codes and RFID tags to allow staff members to read the tags in locations that have not been automated.
- The various display products used for advertising and information purposes in public areas are also natural candidates for e-paper, but both remain under-developed. Even though it does not require great technical performance, signage initiatives are still confined to a handful of trials, most of them by transportation companies on metro, railway and airport, sites in Japan.
- The situation is almost the reverse for advertising, for both billboards and in PoS (point-of-sale advertising). Advertising has already started a migration to digital (4% of display advertising in 2008). Though it remains expensive, the system can generate new revenue, thanks to faster and more automated scheduled rotation of an ad. The package still falls short on the technical front, because of a lack of colour and, in particular, size restrictions.

E-paper could find applications in the area of mobile telecommunications: among the initiatives being developed by operators are reader projects connected directly to the Web, and e-paper screens that act as companions to the mobile phone. There are no plans as yet, however, for a convergent device, despite some pioneer trials by Telecom Italia with the Readius.

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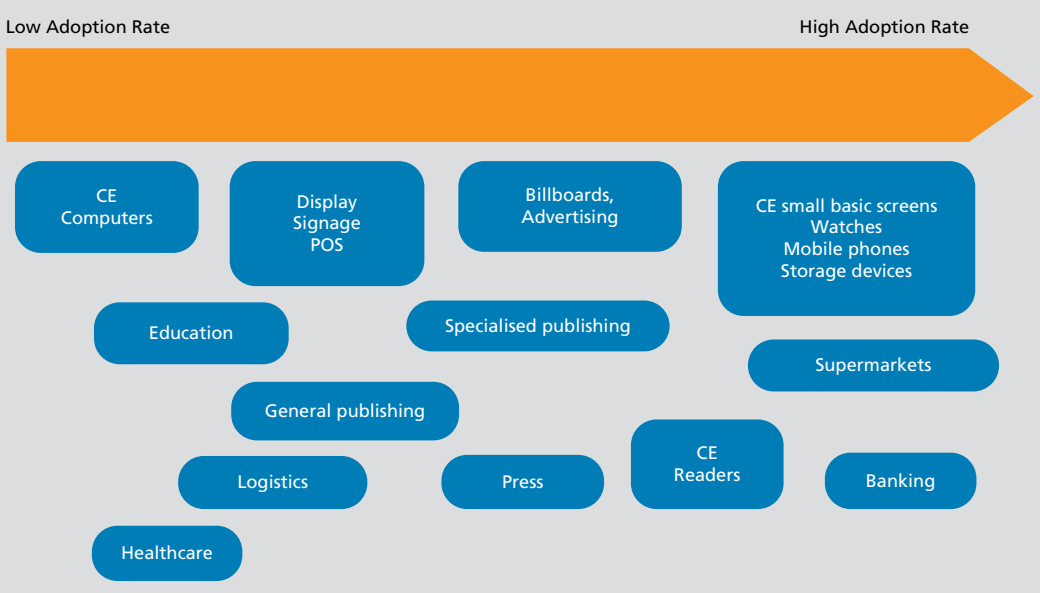
Status of e-paper adoption by sector



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- Continuing its withdrawal from the sector, **Siemens** sells off its cordless phone business (2,100 employees, 792 million EUR in turnover) to German firm, **ARQUES Industries**.
- The FCC has forbidden the country's leading cableco, **Comcast**, from restricting the internet access of its customers who download films. Comcast argued that it was not blocking access to certain sites, but was preventing some users from clogging the network and undermining the quality of service delivered to the majority of its customers.
- The European Commission launches a single selection procedure for satellite communication services providers for the whole of Europe, as opposed to the previous system which was on a country-by-country basis.
- American cable giant **Comcast** acquires the website, **DailyCandy** for 125 million USD.
- **Google** has depreciated the value of its 5% stake in **AOL**, and so implicitly recognizing the overvaluation of AOL whose capitalisation has dropped by half since the share acquisition in late 2005.
- **HP** acquires **Colubris Networks**, an American firm that specialises in wireless data transmission equipment for transportation and medical services companies.
- Software publisher **JDA Software** acquires rival firm **i2 Technologies** for 346 million USD in cash.
- Dutch consumer electronics heavyweight **Philips** has sold its share in Taiwanese semiconductor supplier, **TSMC**, for 455 million EUR.
- **Telenor** was ordered by the Russian courts in the first instance to pay 2.8 billion USD in damages to **Vimpelcom**, the country's second largest mobile operator, of which Telenor owns 29.9%.
- American semiconductor manufacturer, **Vishay Intertechnology** has launched a takeover bid of 1.6 billion USD for US firm, **International Rectifier**, offering 13% over its latest market price.
- Having received the green light from the Ghanaian parliament, **Vodafone** finalises its acquisition from the State of a 70% share of the incumbent carrier, **Ghana Telecom**, for the planned price of 900 million USD.
- Swedish telecom equipment manufacturer, **Ericsson** and Franco-Italian semiconductor supplier, **STMicrolectronics**, are forming a joint venture for producing cellular chips, a market that is largely dominated by **Qualcomm** and **Texas Instruments**.
- **Electronic Arts**, which had got the go-ahead from American anti-trust authorities for its takeover of rival, **Take-Two**, continued discussions, despite an offer (2 billion USD) that Take-Two shareholders have rejected as too low. EA finally threw in the towel in early September, focusing now on internal growth, while Take-Two has taken up negotiations with other potential buyers.
- After waiting several years, the Indian government has announced the terms for awarding 3G mobile licences. The auction procedure, whose bidding will begin at 20 billion INR (310 million EUR) for a national licence, is expected to take place before the end of the year, according to market observers. WiMAX licences are due to be awarded at the same time.
- India's second largest software company, **Infosys**, takes control of British IT consultancy, **Axon**, whose target clientele is multinationals, for 753 million USD in cash.
- Having got the green light from European competition authorities and with no reservations expressed by authorities in the US, American computer maker **HP** finalises its takeover of IT services company, **EDS** for around 13.9 billion USD. HP then announced a restructuring plan that includes a 7.5% reduction in its staff, or the layoff of 24,600 people over three years (of which half in the United States).
- American telecom equipment heavyweight, **Cisco Systems** will be taking over **PostPath**, a company specialised in e-mail and collaboration software, for 215 million USD in cash.
- **Iliad**, parent company of French ISP, **Free**, has signed an agreement with **Telecom Italia** to take control of its ISP **Alice**'s operations in France (850,000 broadband subscribers) for 800 million EUR, including debt. This agreement allows Free to take over second place spot in France's broadband market from **Neuf Cegetel**, behind **Orange**.
- Kuwait has launched a takeover bid for the country's number three cellular operator, which is to begin operations in late 2008.
- **Microsoft** will be spending 486 million USD to acquire Greenfield Online, owner of the price comparison site, Ciao.com.

The next generation of NGA challenges

In the light of increasing bandwidth demand by customers and the need to offer more sophisticated triple play bundles, telecom operators will soon be reaching the point where their traditional copper access networks become saturated. To remedy this bottleneck, operators essentially have three NGA options:

- Fibre to the Cabinet (FttC)
- Fibre to the Building (FttB)
- Fibre to the Home (FttH)

Each option differs in its capability to deliver services to the client and meet investment requirements but all NGA layouts share the fact that civil engineering represents by far the single largest cost item. Obviously, these costs tend to rise the closer the fibre cable is laid to the customer's premises. It is commonly accepted that civil engineering work typically accounts for 50% to 80% of the total investment requirements.

Given the multitude of NGA announced or already launched, achieving regulatory certainty is a priority for all stakeholders. Stakes are high for NRAs; an unbalanced regulatory approach might be disastrous for both investment and infrastructure competition. NRAs in the EU have developed more or less comprehensive approaches for their national markets; in order to foster regulatory consistency, the Commission prepared a draft recommendation for NGA regulation.

In the medium term, competition between different NGA infrastructures will only occur in areas where several favourable circumstances coincide:

- Competitive rollout of several infrastructures in the same region will be limited to areas that are densely populated and ideally have some kind of ducts readily available. In other areas, competition will need to take place at bitstream level.
- At present, the Netherlands seems to be well-positioned to maintain its rank as European broadband leader. Several factors contribute to this. On the one hand, demographic aspects and the existence of strong cable players put the country in a favourable starting position. On the other, the national regulator OPTA plays an effective role in managing the transition to NGA.
- For instance, OPTA encouraged KPN and ANOs to reach a negotiated solution regarding MDF switch-off. This approach creates substantial regulatory certainty and reduces regulatory micro-management in later stages.
- Other countries are less well-endowed for a rapid development of NGA infrastructure competition, as in Germany. Not only is Germany less densely populated than the Netherlands but also less densely covered by broadband cable, with the result that infrastructure competition comes almost only from LLU players. Furthermore, the question of a light-touch approach to NGA continues to put a strain on the market. The ongoing dispute between the EC and the German government over potential exemption of NGA from regulation creates a highly uncertain environment for companies to make investment decisions.
- Europe needs to define a regulatory framework for NGA that is consistent but sufficiently flexible to adapt to local circumstances. This framework must strike the right balance between incentives to invest in NGA and the avoidance of a re-monopolisation of the access network.
- Beyond infrastructural issues, NGA may in the long term also influence the net neutrality debate. While NGA alleviate congestion, they can also lead to a substantial increase in traffic generated by certain heavy users of UGC or P2P-sharing platforms, for instance. Operators may be inclined to demand compensation for preferential treatment of traffic on certain platforms.

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Selected NGA initiatives

									
									
NGA architecture	FttC	FttC	FttC/FttH	FttH	FttH	FttH	FttC/FttB	FttC/FttH	FttC/FttH
Actual or planned coverage (HH)	60% (Spring 08)	30% (end 2010)	40% (end 2010)	4% (end 2009)	15% (end 2012)	4% (end 2009)	65% (2016)	99% 5 cities FttC 5 cities FttH	40% (end 2012)

Source operator reports, press

- Switzerland's incumbent carrier, **Swisscom** will be selling off its **Minick Holding** subsidiary to German firm, **Net Mobile**, a specialist in mobile multimedia services, in exchange for a minority share in the telco.
- **Google** launches its own browser, Google Chrome, and a direct challenge to **Microsoft**'s Internet Explorer.
- **Telefónica** will spend up to 1.1 billion EUR to increase its stake in China's second largest fixed, **China Netcom**, which could go from the current 5% to 13%.
- Through a public-private partnership, the Greek State will be investing 2.1 billion EUR in an optical fibre network.
- **Google**, in association with cableco **Liberty Global** and the bank, **HSBC**, launches O3b Networks (Other 3 billion) aimed at bringing the internet via satellite to emerging countries. The company plans on launching a constellation of 16 satellites, at a cost of 500 million EUR, becoming operational in 2010 and covering 150 countries in Latin America, Asia, Africa and the Middle East.
- Spain's incumbent carrier, **Telefónica**, has issued a takeover bid for Chilean telco, **CTC**, of which it already owns 44.9%, valuing the operator at 703 million EUR.
- American consumer electronics retail chain, **Best Buy** takes over online music swapping veteran, **Napster**, for 121 million USD.
- American memory card manufacturer, **SanDisk** has rejected the takeover bid from **Samsung**, which offered 5.9 billion USD (4.1 billion EUR), while remaining open to a future agree-ment, albeit at a price that reflects the company's "intrinsic value".
- Indian conglomerate **Reliance ADAG** will be investing 1.2 billion USD to create a new company with Steven Spielberg's **DreamWorks** studios.
- UAE telecom carrier, **Etisalat**, has signed an agreement to acquire a roughly 45% stake in mobile operator, **Swan Telecom**, for 900 million USD.
- Draft regulation from the European Commission plans on setting a cap on the price of text messages sent from abroad up to 2013: 0.11 EUR, excl. VAT (compared to the current average price of 0.29 EUR). This cap will be combined with a ceiling wholesale price for SMS of 0.04 EUR.
- Private equity firm, **GHL Acquisition** is taking over American satellite operator, **Iridium**, for 591 million USD.
- On first reading, members of the European parliament adopt an important series of measures aimed at revising telecoms regulation by 2010. Among the amendments to the Commission's initial programme are increased powers to the current European Regulators Group (ERG), instead of creating a European "super-regulator", stricter terms for the imposition of functional separation, a proposal for possible risk sharing for ultra-fast broadband investments and changes to the measures aimed at optimising wireless frequency management.
- Swedish-Finnish operator, **TeliaSonera** will acquire an 80% stake in **Spice Nepal**, Nepal's second largest mobile operator, and take complete control of **Applifone**, Cambodia's fourth largest cellco, for a total outlay of 3.2 billion SEK (484 million USD).
- Several computer, IT and telecom heavyweights (laptop computer manufacturers **Asus**, **Dell**, **Lenovo** and **Toshiba**, US software giant **Microsoft**, components suppliers and telcos **Orange**, **Telefónica**, **Telecom Italia**, **T-Mobile** and **Vodafone**) have announced the launch of a joint initiative called Mobile Broadband, aimed at promoting the use of 3G telephony systems for accessing the Web on laptops. The venture plans on investing over 1 billion USD in 2009 in a marketing campaign and in pre-installing dashboards that allow consumers to manage their 3G devices from their laptops.
- British telco **Cable & Wireless** has acquired an over 85% stake in its rival, **THUS**, which specialises in the enterprise market.

E-commerce: opportunities and challenges

The development of e-commerce has been particularly swift in Europe over the past few years. With sales totalling 100 billion EUR in 2007, online shopping in Europe is nearing levels comparable to the United States (cf. figure), although the market still remains concentrated in just a few large countries: chiefly the UK, Germany and France which together account for more than 70% of e-commerce sales in Europe.

Beyond this general picture, the e-commerce market is a very disparate one, composed of:

- mature markets in the North (the UK, Germany, Scandinavia) where 60% to 80% of Internet users shop online;
- developing markets in the South (France, Italy, Spain) where currently only 35% to 50% of Internet users shop online, but where the number of transactions is rising swiftly;
- and, finally, the more fledgling markets in the East although, there too, the situation varies a great deal from country to country but a lack of statistics makes it difficult to properly assess its size.

Half of the market is based on a few major international e-commerce sites, mainly American or European in origin, but sales, both direct and via dedicated platforms, by small and medium vendors are increasing at a healthy pace.

The challenge for these smaller players, whose business often remains confined to their home market, is to continue to grow locally while also targeting the international market. The search for growth outlets abroad becomes critical when growth in their domestic market is naturally slowing. In the United States, the world's most mature e-commerce market, the more than 30% annual growth rate being reported since the late 1990s began to diminish in 2007 while, over in Europe, although the largest markets are still enjoying 50% growth rates, the momentum will gradually taper off.

As a result, online vendors will have to contend with issues that are both many and various:

- on the marketing front, with the need to find a balance between global approaches and marketing messages and the demands of local consumers;
- in the area of payment methods: when the market broadens geographically, the range of payment solutions will need to expand, increasing the technical complexity and creating interoperability issues, amongst other problems;
- on the legal and regulatory front, with the different rules and laws that apply in each country regarding, inter alia, the status of an order placed via e-mail, of online sales and enforceability of agreements;
- and, finally, in the area of logistics which has its own set of rules, quality of service issues and costs that can vary a great deal from country to country.

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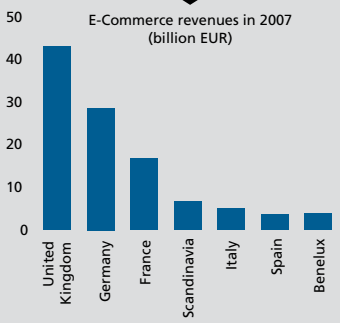
E-commerce revenues in 2007

	Europe	USA
Internet users (M)	250	220
e-shoppers (M)	125	140
e-commerce revenues (billion EUR)	106	130



Source ACSEL-Copilot Partners

- American computer manufacturer, **HP**, acquires US data storage solutions provider, **LeftHand Networks**, for 360 million USD.
- **Microsoft** opens three research centres in Europe (in Paris, London and Munich) to develop products dedicated to online search (videos, photos, sounds…).
- South African-based operator **MTN** acquires **Arobase Telecom**, the second largest mobile operator in Côte Ivoire, along with Ivorian ISP **Afnet**.
- Japanese giant **Sony** completes its takeover of its German partner, **Bertelsmann**'s 50% share in their joint record company, **Sony BMG**, for 1.5 billion USD, and renames the company, **Sony Music Entertainment**.
- Struggling American semiconductor manufacturer, **AMD**, transfers its production assets to a new entity, temporarily named The Foundry Company, of which 55.6% is owned by the Abu Dhabi-based private equity firm, ATIC. At the same time, another equity firm from Abu Dhabi, Mubadala, will increase its stake in AMD from 8.1% to 19.3%. AMD has also sold off its digital TV business to **Broadcom**, for 141.5 million USD.
- After having taken over **Vontu** in 2007 for 350 million USD, California-based antivirus software publisher **Symantec** acquires British firm, **Messagelabs**, a provider of instant messaging and online security services, for 695 million USD.
- Chinese company **Alibaba.com** announces a 5 billion CNY (541 million EUR) investment in its online auction site, **Taobao.com**, over the next five years.
- **France Telecom** and Ugandan operator, **Hits Telecom Uganda,** create a joint venture, **Orange Uganda**, of which the French incumbent owns 53%.
- The French Secretary of State for the development of the digital economy has announced the outline of the *France Numérique 2012* (Digital France 2012) plan, which includes 154 measures and constitutes one of the responses to the current crisis. Among other things, the plan aims to provide all residents of France with high-speed access to the Internet, and includes call for candidates in 2009 for the provision of a universal high-speed Internet access service starting in 2010. The goal for ultra-fast broadband services, meanwhile, is to have 4 million households connected by 2012.
- American telecom operator, **CenturyTel,** acquires its rival, **Embarq**, which manages local telephony operations inherited from Sprint, for 5.8 billion USD in a share swap.
- Chinese equipment manufacturer, **ZTE** is awarded a 400 million USD contract to extend **Aircel'**s GSM network in India. Aircel is India's fifth largest mobile operator, with a base of 11 million customers, and a subsidiary of the Malaysian conglomerate, **Maxis**.
- According to IDC, Americans bought more laptops than desktop computers for the first time ever in Q3 2008. Laptops accounted for 55.2% of computers sales between July and September, which translates into 9.5 million units: 18% more than the year before. Global PC sales – which rose by 15% in the third quarter of the year, with 80.5 million units sold, according to Gartner – are being driven by netbooks.
- Dutch telco, **KPN**, has taken over **Debitel'**s MVNO business in the Netherlands (530,000 customers).
- According to Strategy Analytics, mobile phone sales worldwide were up 5% in Q3 2008 to 303 million units. This is the smallest rate of increase reported by the sector since 2002.
- Norwegian telco, **Telenor** acquires 60% of Indian mobile operator, **Unitech Wireless**, for 1.07 billion USD. Unitech has mobile licences in all of the country's regions, and is set to begin operating around mid-2009.

FTTH/B makes strides in Europe

In Europe, local authorities and power companies are still very involved in FTTH/B deployments, accounting for 58.5% of all projects. Their share nevertheless decreased in the second half of 2008, as alternative operators began to make strides. Some incumbent carriers have also confirmed their FTTH rollout plans (Telefónica) and most have now opted for FTTH/B instead of VDSL for new projects (KPN, Swisscom, Belgacom).

In terms of subscribers, alternative operators dominate the market: the combined customer base for FastWeb (Italy), B2 (Sweden), Illiad/Free, Numericable, SFR (France) and T2 (Slovenia) at the end of 2008 totalled 657,000 subscribers, or nearly 40% of Europe's FTTH/B subscriber base.

By the end of 2008, there were 1,661,895 FTTH/B subscribers in the EU-312 and around 11.2 million homes/buildings passed. The number of homes and buildings passed increased significantly in the second half of 2008 (+27%), while the number of FTTH/B subscribers rose slightly at a slightly lower rate during that period (+25%).

The majority of subscribers is still concentrated in six countries: 79% of FTTH/B subscribers are located in Sweden, Italy, France, Norway, the Netherlands and Denmark.

The increase in homes passed versus subscribers is proof that commercial and marketing efforts still need to be made: this could well be one of the main challenges for 2009 as players cannot content themselves with being known as very proactive in their deployments but also need to begin to recoup their investments.

New players – be they local authorities, alternative operators or incumbent carriers – are still entering the arena. A good example is Telefónica which rolled out an FTTH network in a matter of months, and was reporting around 250,000 homes passed by the end of 2008 (versus zero one year earlier).

In terms of homes/buildings passed, France was ahead of all other European countries at the end of 2008, with 4.5 million homes passed (80% for cable company Numericable). Slovakia is also a very dynamic market and is now in sixth place in terms of homes passed. During the second half of 2008 coverage also expanded rapidly in Southern Europe: the increase in the number homes passed totalled 593% and 245%, respectively, in Spain and Portugal where players have finally begun their deployments after months of talk and announcements.

Scandinavian countries, and notably Sweden and Norway, still lead the way in Europe in terms of penetration rate with 44.1% and 65.6%, respectively. Sweden could, however, fall from the top spot if the growth rate seen over the past six months in the Netherlands and France, and even in countries that only recently entered the FTTH market (notably Spain) continues.

On the matter of technologies, the momentum during the last six months has favoured GPON, even if Ethernet still largely dominates FTTH/B rollouts in Europe, and particularly in the Nordics. This can be attributed to the involvement of power companies in Denmark (EnergiMidt for instance) and of Telefónica in Spain.

Regarding technical architectures, FTTH – which was already the main architecture being deployed a year ago – now represents nearly 53% of all FTTH/B rollouts in Europe. This is further proof of the fact that players often opt for FTTB to avoid the issues involved in installing fibre on private properties, and especially MDUs.

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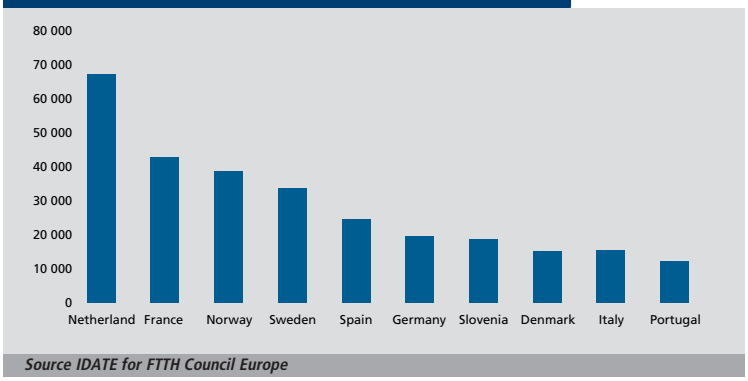
New FTTH/B subscribers between June 08 and December 08



Source IDATE for FTTH Council Europe

UE-27 + Norway, Island, Switzerland and Andorra

- **Fujitsu** signs an agreement with German conglomerate **Siemens** to acquire its 50% stake in the **Fujitsu Siemens Computers** joint venture by April 2009, for 450 million EUR.

- The FCC has decided to open up the blocks of frequencies liberated by the switchover from analogue to digital broadcasting, which has been set for 17 February 2009 (since postponed) – and which have not been reserved for TV broadcasters or telecom operators – to all users who want it to run high-speed wireless home networks.

- Telecom equipment manufacturer, **Alcatel Lucent**, has been awarded a contract by British carrier, **BT**, to overhaul its networks outside the UK which include most of the networks that currently supply **BT Global Services** customers: the seven-year contract will begin with the operation of five national and international fixed networks in 27 countries.

- Mobile telephone giant, **Vodafone**, will be acquiring a 15% stake in South Africa's largest mobile operator, **Vodacom** – of which it already owns 50% – from its South African partner, **Telkom**, for around 1.8 billion EUR.

- **BT** announces 10,000 layoffs, mainly the UK and including some staff working for sub-contractors.

- After having got the green light from Europe's competition authorities, American video game distributor, **GameStop**, can proceed with its takeover of French rival, **Micromania**, for 700 million USD.

- Japan's number one mobile operator **NTT DoCoMo** (54 million subscribers) acquires a 26% stake in **Tata Teleservices**, India's sixth largest mobile operator, for 2.15 billion EUR. NTT DoCoMo will also be acquiring up to 20% of the remaining ordinary shares in Tata Teleservices Maharashtra through its joint offer with Tata Sons, the Tata family's holding company.

- American electronic components manufacturer, **ON Semiconductor**, has withdrawn its 2.3 billion USD proposal to acquire its competitor, **Atmel**, 'due to the unforeseen deterioration in the semiconductor market'. The other firm associated with the offer, **Microchip Technology**, indicates that it will be looking at 'potential alternatives for pursuing a transaction' without ON Semiconductor.

- **Yahoo!** resells **Kelkoo** to British private equity firm, **Jamplant**, for less than 100 million EUR (Yahoo! had acquired Kelkoo in 2004 for 475 million EUR).

- **Siemens** will pay a provision of 255 million EUR to compensate its mobile phone production division which it had sold to Taiwan's **BenQ**, and which ended in financial and social disaster – filing for bankruptcy in 2006.

- In accordance with regulation governing market concentration, the European Commission approves the creation of a joint venture between **EMP**, the wireless platform owned by Swedish group Ericsson, and **ST-NXP Wireless** – **STMicroelectronics**' wireless semiconductor production division.

- Unable to find a buyer, **Lycos Europe** will be putting an end to its Internet portal and website hosting business, and will sell off its remaining assets.

- Very early on, financial negotiations over **Panasonic**'s takeover of **Sanyo** have been cut short by one of the main shareholders, **Goldman Sachs,** which considers the offer too low. The transaction is still part of Panasonic's plans for 2009, however.

- Finland's **Nokia**, the world's leading supplier of mobile phones, will no longer be selling its handsets in Japan where it held only a 1% market share. It has also announced the release in late 2009 of its first 3G mobile compatible with the Chinese standard TD-SCDMA, to be launched by **China Mobile**.

- The plan to sell **BCE** to a group of private investors for 52 billion CAD appears to be seriously compromised, following a negative assessment of the deal from accounting firm, KPMG.

- Turkey's telecom authorities have finalised the sale at auction of three 3G mobile operators' licences, for a total sum of 822 million EUR.

- Sweden's **Ericsson** signs a contract with Mobile Broadband Network Limited (MBNL), a joint venture between **T-Mobile** and **3** in the UK, to improve the coverage of their 3G network.

- After having sold off its Kertel subsidiary in 2007, French company, **Iliad,** parent company to ISP **Free**, sells the operator **Intercall**, which specialises in prepaid calling cards, to **Financière LR**.

Battle for managed services

In a fast moving environment and to counter fierce competition from new entrants, telecommunications service providers are having to transform their traditional business models by focusing onto customer-oriented activities. There is a switch in the carriers core competences: service providers now regard customer relationship management, customer retention, and other marketing activities as their new core activities. To be able to allocate sufficient resources to these activities, carriers outsource non-value added operations.

Managed services are part of them. They can be described as a service which is process based and which results in recurring opportunities. These managed services are different from traditional services which are product dependent or project based. It encompasses a variety of outsourcing activities from network outsourcing to hosted applications through middleware outsourcing.

As of today, 70% of the managed services deals are for the outsourcing of the network operations. The remaining 30% includes outsourcing of OSS/BSS, billing platforms as well as hosted applications. During the first half of 2008, we identified 24 hosted applications deals and we estimate that this figure will double within two years as service providers tend to outsource more and more the basic applications such as messaging-based services.

Telco equipment vendors faced with IT suppliers

Traditional telco equipment suppliers are the best positioned to offer managed services related to network outsourcing. In the years to come, however, most managed services opportunities will come from the outsourcing of the upper layers of the network. In these areas, namely OSS/BSS, Billing platforms and hosted applications, competition from IT vendors and smaller telco application providers will turn to be intense. The managed services market was worth 6 billion USD in 2007 and telco players get around 50% out of it. IT suppliers secured around 30% of the market and other smaller vendors get the 20% remaining.

The battle in the managed services area is like to be a passionate one, but at the end of the day, each player might get its own fair share regarding their core competencies.

Telco giant equipment suppliers will remain strong in the outsourcing of the network infrastructures. IT vendors will still get their hands on the business process optimisation field, and smaller telco applications players might keep significant part of the hosted applications market. The grey area is into the middleware layer, for OSS/BSS and billing platforms outsourcing. Indeed, each of the main protagonists have their chances to secure business in this field as they can leverage their respective core competencies to differentiate themselves.

Immediate actions

Every single player in the telecommunications Industry can benefit from the managed services market. End-users benefit from outsourcing activities as they can enjoy a wider applications offering and better customer care services.

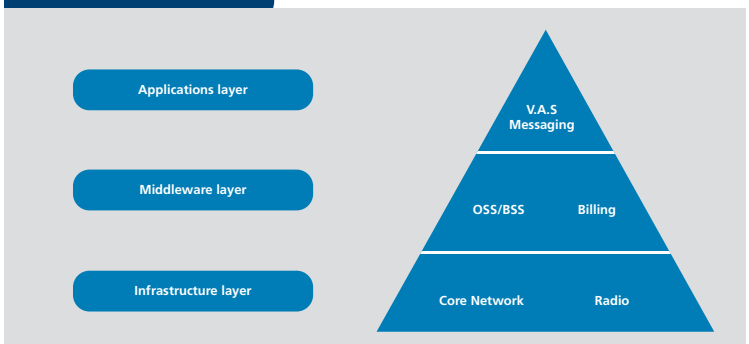
Service providers can be more competitive by outsourcing their network infrastructures, OSS/BSS, billing platforms, application platforms and business process optimisation.

Telco vendors can create a stronger bargaining power, achieve significant economies of scale and secure close partnerships with their customers.

IT vendors, who have already a strong footprint in outsourcing activities in many industries, can leverage their past experiences to break in this new lucrative market.

Smaller applications providers can utilise the managed services as a new business model to enter into a partnership mode with telecommunications carriers.

Managed services layers



Source IDATE

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- **France Telecom** and **Etisalat**, the largest telco in the United Arab Emirates, have signed a strategic cooperation agreement concerning triple play bundles (Internet, voice, TV), content and undersea networks. Etisalat will be adopting **SoftAtHome** solutions for its future broadband rollouts, and will acquire a 16.6% stake in this joint venture between **Thomson**, **Sagem** and France Telecom.
- The 218 million EUR offer from Canadian firm **Sierra Wireless** to acquire **Wavecom** is approved by the latter's board of directors – putting digital security specialist, **Gemalto**, out of the running.
- Japan's second largest mobile operator, **KDDI**, has chosen Japanese supplier, **Hitachi**, in association with Canadian firm **Nortel** to build an LTE standard mobile network, and is thus coming on board with the future standard that will be employed by its local competitors.
- French cable manufacturer, **Nexans**, will join forces with Japan's **Sumitomo Electric Industries** to develop optical fibre telecommunications cables in Europe, with the latter acquiring a 40% stake in **Opticable**, Nexans's Belgium-based subsidiary.
- **Sony** will be undertaking a vast, global restructuring plan which includes 8,000 layoffs in its electronics division (5% of staff), and a 30% reduction in the investments planned for the coming year.
- German manufacturing giant **Siemens** will pay 800 million USD (600 million EUR) as part of a settlement reached with the SEC in the US over a sprawling corruption scandal. It is also close to reaching an agreement with authorities in Germany where it also faces corruption charges, and where it will be forced to pay a settlement of around 400 million EUR.
- Poland's electronic communications regulator, UKE, has launched the functional separation procedure with incumbent carrier, **TP**, after having ruled that previous measures to pressure the telco, namely fines, had not helped improve competition conditions in the market, notably in the broadband access market.
- As a protective measure, France's competition authority has suspended **Apple'**s exclusivity agreement with **Orange** for marketing the iPhone, a deal which the authority felt made even more rigid a market where competition was already lacking. Orange has appealed the decision. Over in the United States, Apple has signed an agreement to have the iPhone distributed in most of the 2,500 points of sale of the country's largest retail chain, **Walmart**.
- Australian media mogul, Rupert Murdoch, who is the main shareholder in German TV group **Premiere**, which is currently in the throes of a restructuring, has committed to guaranteeing a 450 million EUR increase in capital via **News Corp.**, which will make it possible to open new lines of credit up to 525 million EUR.
- China's largest entertainment portal, **Sina.com**, will be acquiring most of the assets of **Focus Media** (including its **Allyes** online ad agency) by acquiring 1 billion USD worth of the advertising agency's stock.
- **Deutsche Telekom** is cooperating with **Vodafone** for the deployment of VDSL access networks in two German cities (100,000 premises passed). These two pilot projects could lead to additional cooperation agreements with other competitors, such as **Versatel**, **Hansenet** and **QSC**.
- On the verge of bankruptcy, Canadian telecom equipment manufacturer, **Nortel**, is planning on selling off more assets, while also having received several offers for its Ethernet division which has been up for sale since September.
- With a new team at the helm, **Alcatel Lucent** announces a 750 million EUR savings plan, which includes the layoff of 1,000 managers, to help the company through the recession.
- Russian's court of appeal in Omsk cancels the 2.8 billion USD fine that Norwegian telecom operator, **Telenor**, had been ordered to pay Russian mobile operator, **VimpelCom**.
- China's State Council gives the go-ahead for the long awaited launch of 3G telephony licence awards – which include the Chinese standard, TD-SCDMA, alongside the two other main 3G standards – to the three operators to emerge from the sector's restructuring, namely **China Mobile**, **China Unicom** and **China Telecom** which will be investing an estimated 30 billion EUR in their networks.

DTT introduces interactive services

Having to contend with competition from IPTV, digital terrestrial TV is experimenting with new interactive services delivered over the set-top box's connection to the Internet or a built-in hard drive.

The notion of interactive TV encompasses an array of services that create added value for the central broadcast TV offer, and meant to enhance the viewing experience. The first interactive TV services have also been introduced on mobile TV, notably on the DVB-H network in Finland – in some cases requiring a UMTS (3G) return path.

A broad selection of services and data applications is available over interactive DTT set-top boxes, including:

- electronic programme guides (EPG);
- enhanced TV, or ETV: allowing viewers to access additional information while watching a programme, take part in a contest or vote on the show;
- send live comments and votes;
- teleshopping;
- contests and quizzes;
- bonus content related to the programme: programme notes, interviews with the actors, a peep backstage, deleted scenes and more;
- an array of data services delivered in the form of text (teletext), audio, fixed or animated pictures or video: news, weather, stock market, horoscope and similar;
- interactive advertising;
- VOD;
- Internet access.

Alongside interactive applications, strictly speaking, are other services that aim to enhance the actual physical viewing experience, which can involve creating a more practical and enjoyable viewing experience for disabled viewers in particular.

These services can include:

- a choice of viewing language (original version or dubbed/subtitled);
- subtitles in a selection of languages, including for the hearing impaired;
- ability to increase the size of the subtitles (available on Spanish interactive channel, Campus HD), for the visually or hearing impaired;
- translation into sign language (provided for two hours a day on the DTT service in Denmark).

In Finland, this type of service has already been well developed on the DTT platform, and touted as a valuable added feature for viewers who can watch their programmes in the original version with subtitles, and to choose from several languages for the subtitled and dubbed versions.

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Examples of interactive data services over DTT in Europe (excluding VOD)

Country	Operator/service	List of interactive services available on DTT
Finland	Mobiili TV	As part of the Finnish Mobile TV project, various interactive services are available on the Finnish mobile TV offer, using the cellular upstream path : • Vote during a broadcast directly from the telephone (without having to send a separate text message or place a call) • Games • Tele-shopping • Data services (news, sports, weather, etc.)
Italy	RTV38	Since October 2004, the regional Italian channel, RTV38, has offered DTT interactive services, notably including: an interactive weather application, a personalisable general news and sports banner, applications associated with TV programmes such as "Golden Goal" and "Idea Weekend", a voting service, practical tools (tax calculator, local administrative news, electronic messaging, SMS, etc.), as well as interactive advertising.
Spain	RTVE	EPG, digital teletext, weather, traffic, and a database of complementary employment ads called "Aqui hay trabajo"
	Telecinco	News, weather, stocks, traffic and EPG
	Antena 3	A3 Portal (portal with sports news, stocks, weather, traffic, horoscopes, programming news (presentation with photos, reviews, etc.)), EPG, banners superimposed on TV content, instant messaging, voting and games.
	Sogecable	EPG, SMS forums, CNN+ news
	Vocento	EPG
United Kingdom	Freeview	Several interactive services are available on Freeview, the British free TV platform: • Enhanced television service, including among others, bonus video, notably during retransmissions of major sporting events such as Wimbledon or the Six Nation Tournament. • BBCi, BBC's interactive service which offers bonus content, quizzes, etc. • Weather • Vote • EPG

Source IDATE

Country profiles

France

Markets

(billion EUR)	2004	2005	2006	2007	2008
Telecom services	36.9	37.5	38.0	39.2	40.4
Fixed telephony	14.0	13.5	12.9	12.3	11.7
Internet & data	7.0	6.6	7.1	7.8	8.6
Mobile services	15.8	17.3	18.0	19.1	20.1
Telecom equipment	-	7.2	7.5	7.6	7.8
Terminals	-	2.5	2.6	2.7	2.7
Enterprise equipment	-	1.5	1.5	1.5	1.5
Network equipment	-	3.2	3.4	3.4	3.6
TV services	9.0	9.2	9.7	10.2	10.2
Subscription	4.1	4.2	4.5	4.8	4.7
Public funding	1.6	1.8	1.8	1.9	2.1
Advertising	3.2	3.2	3.4	3.5	3.4

Subscribers

(million)	2004	2005	2006	2007	2008
Fixed access lines	33.6	33.1	31.6	28.7	26.0
as a % of inhabitants	54.0%	53.0%	50.3%	45.6%	41.2%
Cellular customers	44.5	48.0	51.5	55.3	58.1
as a % of inhabitants	71.5%	76.8%	82.1%	87.9%	91.9%
Broadband subscribers	6.8	9.4	12.6	15.6	17.8
as a % of inhabitants	10.8%	15.1%	20.1%	24.7%	28.1%
Multichannel TV homes	10.3	11.0	12.9	13.7	15.0
as a % of TV homes	43.8%	45.4%	52.6%	55.5%	60.0%
Digital TV homes	5.6	7.4	13.3	16.4	19.4
as a % of TV homes	23.7%	30.4%	54.2%	66.1%	77.3%

Macro-economic data

	2004	2005	2006	2007	2008
Population (million inhabitants)	62.3	62.5	62.8	63.0	63.2
GDP (billion EUR)	1660.2	1726.1	1807.5	1868.0	-

Germany

Markets

(billion EUR)	2004	2005	2006	2007	2008
Telecom services	54.6	54.4	53.8	52.6	50.9
Fixed telephony	20.2	19.6	18.4	17.2	15.9
Internet & data	11.1	11.5	12.1	12.8	13.2
Mobile services	23.4	23.3	23.3	22.6	21.8
Telecom equipment	-	8.3	8.6	8.8	9.0
Terminals	-	3.0	3.1	3.2	3.2
Enterprise equipment	-	2.0	2.1	2.2	2.2
Network equipment	-	3.3	3.4	3.5	3.5
TV services	12.3	12.9	13.2	13.6	13.9
Subscription	4.4	4.5	4.4	4.5	4.5
Public funding	4.1	4.6	4.7	4.8	4.8
Advertising	3.9	3.9	4.1	4.3	4.5

Subscribers

(million)	2004	2005	2006	2007	2008
Fixed access lines	54.6	54.9	54.5	53.7	51.6
as a % of inhabitants	66.2%	66.6%	66.1%	65.2%	62.6%
Cellular customers	71.3	79.3	85.7	97.2	104.6
as a % of inhabitants	86.5%	96.2%	103.9%	117.9%	127.0%
Broadband subscribers	6.9	10.7	14.9	19.6	22.2
as a % of inhabitants	8.3%	13.0%	18.0%	23.8%	27.0%
Multichannel TV homes	25.3	25.7	25.6	25.9	26.1
as a % of TV homes	67.4%	68.3%	67.9%	68.9%	69.3%
Digital TV homes	5.8	7.6	9.0	12.2	14.1
as a % of TV homes	15.4%	20.1%	23.8%	32.3%	37.3%

Macro-economic data

	2004	2005	2006	2007	2008
Population (million inhabitants)	82.4	82.4	82.4	82.4	82.4
GDP (billion EUR)	2211.2	2244.6	2322.2	2428.3	-

Italy

Markets

(billion EUR)	2004	2005	2006	2007	2008
Telecom services	30.0	30.8	31.2	31.6	31.4
Fixed telephony	12.7	12.0	11.7	11.1	10.5
Internet & data	3.4	3.8	4.5	4.9	5.1
Mobile services	14.0	15.0	15.0	15.6	15.9
Telecom equipment	-	6.7	6.7	6.7	6.7
Terminals	-	2.6	2.7	2.7	2.7
Enterprise equipment	-	0.9	0.9	0.9	0.9
Network equipment	-	3.1	3.1	3.1	3.1
TV services	7.6	8.2	8.8	9.2	9.8
Subscription	1.6	2.0	2.6	3.0	3.3
Public funding	1.6	1.6	1.6	1.6	1.7
Advertising	4.4	4.7	4.6	4.7	4.8

Subscribers

(million)	2004	2005	2006	2007	2008
Fixed access lines	29.1	28.0	27.1	25.8	24.7
as a % of inhabitants	50.1%	48.2%	46.6%	44.4%	42.6%
Cellular customers	62.7	71.5	80.5	89.9	92.5
as a % of inhabitants	107.9%	123.1%	138.5%	154.6%	159.0%
Broadband subscribers	5.1	7.1	8.8	10.1	10.7
as a % of inhabitants	8.7%	12.2%	15.1%	17.4%	18.5%
Multichannel TV homes	3.3	3.8	4.4	4.8	5.3
as a % of TV homes	14.7%	17.0%	18.8%	20.4%	22.4%
Digital TV homes	5.4	8.8	10.6	12.6	14.7
as a % of TV homes	24.1%	38.8%	45.9%	53.3%	61.9%

Macro-economic data

	2004	2005	2006	2007	2008
Population (million inhabitants)	58.1	58.1	58.1	58.1	58.1
GDP (billion EUR)	1391.5	1428.4	1480.0	1535.4	-

Russia

Markets

(billion EUR)	2004	2005	2006	2007	2008
Telecom services	10.1	12.4	15.7	20.2	23.2
Fixed telephony	3.8	4.2	4.6	5.0	5.2
Internet & data	1.2	1.6	1.9	2.3	2.6
Mobile services	5.1	6.5	9.2	12.9	15.5
Telecom equipment	-	7.8	7.6	8.0	8.3
Terminals	-	4.2	4.0	4.2	4.3
Enterprise equipment	-	1.0	1.0	1.0	1.0
Network equipment	-	2.7	2.6	2.8	2.9
TV services	1.6	1.9	2.7	3.6	4.5
Subscription	0.2	0.2	0.4	0.5	0.6
Public funding	0.0	0.0	0.0	0.0	0.0
Advertising	1.4	1.7	2.3	3.1	3.8

Subscribers

(million)	2004	2005	2006	2007	2008
Fixed access lines	39.0	40.1	42.0	45.0	45.7
as a % of inhabitants	27.2%	28.1%	29.6%	31.8%	32.5%
Cellular customers	69.2	126.3	156.0	174.0	187.1
as a % of inhabitants	48.2%	88.5%	109.8%	123.1%	133.0%
Broadband subscribers	1.1	2.1	2.6	5.4	6.3
as a % of inhabitants	0.8%	1.4%	1.8%	3.8%	4.5%
Multichannel TV homes	5.6	9.5	13.7	17.9	23.1
as a % of TV homes	11.0%	18.8%	27.2%	35.3%	45.6%
Digital TV homes	0.5	1.4	2.6	4.7	5.3
as a % of TV homes	1.1%	2.7%	5.2%	9.2%	10.6%

Macro-economic data

	2004	2005	2006	2007	2008
Population (million inhabitants)	143.5	142.8	142.1	141.4	140.7
GDP (billion EUR)	486.9	617.6	767.7	942.1	-

Spain

Markets

(billion EUR)	2004	2005	2006	2007	2008
Telecom services	21.5	23.7	24.6	25.7	26.1
Fixed telephony	7.9	8.0	7.5	7.3	7.0
Internet & data	3.3	3.8	3.8	4.3	4.7
Mobile services	10.3	12.0	13.3	14.2	14.4
Telecom equipment	-	5.4	5.8	5.9	6.0
Terminals	-	2.3	2.3	2.4	2.4
Enterprise equipment	-	0.7	0.7	0.7	0.7
Network equipment	-	2.4	2.7	2.8	2.9
TV services	4.8	5.2	6.0	6.0	6.0
Subscription	1.7	1.8	1.9	2.0	2.1
Public funding	0.7	0.7	1.2	0.8	0.9
Advertising	2.4	2.7	2.9	3.1	3.0

Subscribers

(million)	2004	2005	2006	2007	2008
Fixed access lines	20.9	22.6	21.9	21.9	19.9
as a % of inhabitants	48.6%	51.6%	49.3%	48.5%	43.5%
Cellular customers	39.2	43.1	47.0	48.4	52.4
as a % of inhabitants	91.1%	98.5%	106.0%	107.3%	114.6%
Broadband subscribers	3.5	5.1	6.8	8.0	9.1
as a % of inhabitants	8.0%	11.6%	15.3%	17.7%	20.0%
Multichannel TV homes	3.2	3.4	3.7	4.0	4.3
as a % of TV homes	23.1%	23.4%	25.6%	26.8%	28.2%
Digital TV homes	2.4	4.2	6.3	8.3	11.1
as a % of TV homes	17.1%	29.2%	43.3%	55.6%	73.9%

Macro-economic data

	2004	2005	2006	2007	2008
Population (million inhabitants)	43.0	43.8	44.4	45.1	45.7
GDP (billion EUR)	841.0	908.5	981.0	1049.9	-

United Kingdom

Markets

(billion EUR)	2004	2005	2006	2007	2008
Telecom services	44.0	45.3	46.4	48.2	48.8
Fixed telephony	17.9	16.9	16.2	15.8	15.4
Internet & data	7.2	7.5	7.9	8.2	8.7
Mobile services	18.8	20.9	22.2	24.1	24.8
Telecom equipment	-	10.2	9.8	10.4	10.5
Terminals	-	3.8	3.9	4.0	4.0
Enterprise equipment	-	1.7	1.8	1.9	1.9
Network equipment	-	4.8	4.2	4.5	4.7
TV services	13.7	14.4	14.6	15.3	15.7
Subscription	5.2	5.7	5.9	6.3	6.5
Public funding	3.4	3.6	3.7	3.8	3.9
Advertising	5.1	5.2	5.1	5.2	5.3

Subscribers

(million)	2004	2005	2006	2007	2008
Fixed access lines	33.7	34.1	33.6	33.7	31.7
as a % of inhabitants	56.0%	56.4%	55.4%	55.4%	52.0%
Cellular customers	62.1	68.8	71.9	75.8	77.1
as a % of inhabitants	103.1%	113.8%	118.7%	124.8%	126.5%
Broadband subscribers	6.2	9.9	13.0	15.6	17.1
as a % of inhabitants	10.4%	16.4%	21.4%	25.7%	28.1%
Multichannel TV homes	10.6	11.1	11.6	12.2	12.4
as a % of TV homes	41.4%	43.1%	45.1%	47.2%	48.0%
Digital TV homes	14.9	17.6	19.8	22.2	23.7
as a % of TV homes	58.1%	68.1%	76.7%	85.9%	91.4%

Macro-economic data

	2004	2005	2006	2007	2008
Population (million inhabitants)	60.3	60.4	60.6	60.8	60.9
GDP (billion EUR)	1731.2	1803.8	1906.0	2024.7	-

Brazil

Markets

(billion EUR)	2004	2005	2006	2007	2008
Telecom services	24,4	28,1	30,4	33,4	36,0
Fixed telephony	14,2	15,1	14,9	14,4	14,1
Internet & data	2,4	3,0	3,7	4,2	4,7
Mobile services	7,8	9,9	11,8	14,8	17,1
Telecom equipment	-	-	-	-	-
Terminals	-	-	-	-	-
Enterprise equipment	-	-	-	-	-
Network equipment	-	-	-	-	-
TV services	3,6	4,8	5,5	6,4	7,0
Subscription	1,5	1,7	2,1	2,5	2,7
Public funding	-	-	-	-	-
Advertising	2,1	3,0	3,5	3,9	4,3

Subscribers

(million)	2004	2005	2006	2007	2008
Fixed access lines	39,6	39,9	38,8	37,9	36,8
as a % of inhabitants	21,5%	21,4%	20,6%	19,9%	19,2%
Cellular customers	65,2	86,9	100,8	122,3	148,7
as a % of inhabitants	35,4%	46,7%	53,6%	64,4%	77,5%
Broadband subscribers	2,6	3,8	5,6	8,1	10,5
as a % of inhabitants	1,4%	2,0%	3,0%	4,3%	5,5%
Multichannel TV homes	3,9	4,2	4,6	5,3	5,7
as a % of TV homes	8,5%	9,2%	9,4%	10,6%	11,0%
Digital TV homes	1,6	1,6	1,8	2,4	3,4
as a % of TV homes	3,4%	3,5%	3,6%	4,8%	6,6%

Macro-economic data

	2004	2005	2006	2007	2008
Population (million inhabitants)	184,1	186,1	188,1	190,0	191,9
GDP (billion EUR)	728,5	805,7	875,4	960,1	-

United States

Markets

(billion EUR)	2004	2005	2006	2007	2008
Telecom services	199,1	206,6	211,7	220,1	223,0
Fixed telephony	83,9	79,7	74,0	68,8	63,7
Internet & data	40,5	44,0	46,1	49,8	52,7
Mobile services	74,6	83,0	91,7	101,5	106,6
Telecom equipment	-	46,6	48,5	47,5	48,0
Terminals	-	16,5	17,2	17,6	17,3
Enterprise equipment	-	10,7	11,1	11,1	11,5
Network equipment	-	19,4	20,2	18,8	19,2
TV services	82,5	86,8	93,2	97,4	101,8
Subscription	38,1	41,7	44,7	48,6	52,0
Public funding	0,4	0,4	0,4	0,4	0,4
Advertising	44,1	44,7	48,1	48,3	49,4

Subscribers

(million)	2004	2005	2006	2007	2008
Fixed access lines	177,7	175,2	167,5	160,0	151,9
as a % of inhabitants	60,6%	59,2%	56,1%	53,1%	50,0%
Cellular customers	182,1	207,9	233,0	256,8	272,7
as a % of inhabitants	62,2%	70,3%	78,1%	85,3%	89,8%
Broadband subscribers	36,3	46,7	57,6	68,7	80,0
as a % of inhabitants	12,4%	15,8%	19,3%	22,8%	26,3%
Multichannel TV homes	90,3	93,0	95,1	96,8	100,4
as a % of TV homes	82,4%	84,4%	85,2%	86,3%	89,1%
Digital TV homes	50,8	60,2	68,4	78,3	86,7
as a % of TV homes	46,4%	54,6%	61,3%	69,8%	76,9%

Macro-economic data

	2004	2005	2006	2007	2008
Population (million inhabitants)	293,0	295,7	298,4	301,1	303,8
GDP (billion EUR)	8537,7	9084,2	9640,0	10112,5	-

China

Markets

(billion EUR)	2004	2005	2006	2007	2008
Telecom services	51.6	56.8	62.5	67.4	72.2
Fixed telephony	19.8	20.2	19.9	18.0	16.4
Internet & data	4.0	4.9	6.0	7.5	9.5
Mobile services	27.8	31.7	36.6	41.9	46.4
Telecom equipment	-	19.8	21.0	24.1	27.2
Terminals	-	9.5	10.1	11.3	12.4
Enterprise equipment	-	1.0	1.1	1.1	1.2
Network equipment	-	9.4	9.9	11.7	13.5
TV services	5.5	6.1	6.9	8.1	9.6
Subscription	2.6	2.8	3.2	3.8	4.2
Public funding	-	-	-	-	-
Advertising	2.9	3.3	3.7	4.3	5.5

Subscribers

(million)	2004	2005	2006	2007	2008
Fixed access lines	311.8	350.4	367.8	365.4	361.8
as a % of inhabitants	24.0%	26.8%	28.0%	27.6%	27.2%
Cellular customers	317.1	374.4	443.6	531.8	631.8
as a % of inhabitants	24.4%	28.7%	33.8%	40.2%	47.5%
Broadband subscribers	25.9	39.1	51.9	64.9	82.6
as a % of inhabitants	2.0%	3.0%	3.9%	4.9%	6.2%
Multichannel TV homes	120.0	125.1	130.2	133.7	140.0
as a % of TV homes	35.5%	36.7%	36.7%	36.2%	36.5%
Digital TV homes	0.7	4.5	13.8	31.7	65.6
as a % of TV homes	0.2%	1.3%	3.9%	8.6%	17.1%

Macro-economic data

	2004	2005	2006	2007	2008
Population (million inhabitants)	1298.8	1306.3	1314.0	1321.9	1330.0
GDP (billion EUR)	1539.3	1812.1	2124.0	2368.5	-

India

Markets

(billion EUR)	2004	2005	2006	2007	2008
Telecom services	9.3	10.3	12.5	15.0	17.5
Fixed telephony	5.7	5.6	5.1	4.6	4.1
Internet & data	0.9	1.2	1.9	2.4	2.9
Mobile services	2.7	3.6	5.4	8.0	10.5
Telecom equipment	-	3.8	6.4	8.6	12.2
Terminals	-	2.5	4.4	5.3	7.2
Enterprise equipment	-	0.1	0.2	0.3	0.4
Network equipment	-	1.2	1.8	3.1	4.6
TV services	2.8	3.5	4.0	4.7	5.1
Subscription	2.2	2.4	2.6	3.0	3.3
Public funding	0.0	0.0	0.0	0.0	0.0
Advertising	0.6	1.2	1.5	1.6	1.8

Subscribers

(million)	2004	2005	2006	2007	2008
Fixed access lines	44.9	48.8	40.3	39.3	38.3
as a % of inhabitants	4.2%	4.5%	3.6%	3.5%	3.3%
Cellular customers	48.0	75.9	149.6	233.6	338.5
as a % of inhabitants	4.5%	6.9%	13.5%	20.7%	29.5%
Broadband subscribers	0.2	0.9	2.5	3.1	5.5
as a % of inhabitants	0.0%	0.1%	0.2%	0.3%	0.5%
Multichannel TV homes	48.7	55.8	62.3	71.5	75.9
as a % of TV homes	57.3%	64.1%	68.2%	74.6%	75.4%
Digital TV homes	0.2	1.0	4.1	7.9	11.3
as a % of TV homes	0.3%	1.2%	4.5%	8.2%	11.2%

** new accounting perimeter*

Macro-economic data

	2004	2005	2006	2007	2008
Population (million inhabitants)	1075.5	1093.6	1111.7	1129.9	1148.0
GDP (billion EUR)	556.5	632.6	732.5	829.3	-

Japan

Markets

(billion EUR)	2004	2005	2006	2007	2008
Telecom services	83.1	83.7	85.3	85.1	82.8
Fixed telephony	24.4	23.7	22.6	21.3	19.8
Internet & data	14.4	15.9	17.7	19.0	19.9
Mobile services	44.4	44.1	44.9	44.8	43.1
Telecom equipment	-	22.6	22.7	22.6	22.2
Terminals	-	10.2	9.9	9.9	9.4
Enterprise equipment	-	2.4	2.5	2.6	2.7
Network equipment	-	10.0	10.3	10.1	10.1
TV services	21.7	22.9	23.3	23.4	24.3
Subscription	5.5	6.3	7.1	7.2	7.8
Public funding	4.0	4.0	3.7	3.8	3.9
Advertising	12.2	12.7	12.5	12.4	12.6

Subscribers

(million)	2004	2005	2006	2007	2008
Fixed access lines	69.6	67.4	63.8	60.4	57.8
as a % of inhabitants	54.7%	52.9%	50.0%	47.4%	45.4%
Cellular customers	85.4	90.2	94.9	100.5	106.7
as a % of inhabitants	67.1%	70.8%	74.5%	78.9%	83.7%
Broadband subscribers	18.6	22.5	25.8	28.3	30.4
as a % of inhabitants	14.6%	17.6%	20.2%	22.2%	23.8%
Multichannel TV homes	21.2	21.6	21.9	22.2	23.6
as a % of TV homes	44.2%	44.9%	45.5%	46.1%	49.0%
Digital TV homes	18.5	24.8	27.3	31.4	35.3
as a % of TV homes	38.5%	51.6%	56.8%	65.3%	73.2%

Macro-economic data

	2004	2005	2006	2007	2008
Population (million inhabitants)	127.3	127.4	127.5	127.5	127.4
GDP (billion EUR)	3091.9	3113.0	3157.6	3199.8	-

South Korea

Markets

(billion EUR)	2004	2005	2006	2007	2008
Telecom services	20.4	20.9	21.3	22.2	22.6
Fixed telephony	4.1	3.9	3.8	3.7	3.5
Internet & data	5.1	5.0	5.1	5.6	5.7
Mobile services	11.2	12.0	12.3	13.0	13.3
Telecom equipment	-	-	-	-	-
Terminals	-	-	-	-	-
Enterprise equipment	-	-	-	-	-
Network equipment	-	-	-	-	-
TV services	-	-	-	-	-
Subscription	-	-	-	-	-
Public funding	-	-	-	-	-
Advertising	-	-	-	-	-

Subscribers

(million)	2004	2005	2006	2007	2008
Fixed access lines	22.7	22.8	22.5	22.5	22.5
as a % of inhabitants	47.0%	46.8%	46.2%	45.8%	45.7%
Cellular customers	36.6	38.3	40.2	43.5	45.9
as a % of inhabitants	75.6%	78.8%	82.3%	88.7%	93.2%
Broadband subscribers	11.9	12.2	14.0	15.1	16.1
as a % of inhabitants	24.6%	25.1%	28.7%	30.8%	32.6%
Multichannel TV homes	-	-	-	-	-
as a % of TV homes	-	-	-	-	-
Digital TV homes	-	-	-	-	-
as a % of TV homes	-	-	-	-	-

Macro-economic data

	2004	2005	2006	2007	2008
Population (million inhabitants)	48.4	48.6	48.8	49.0	49.2
GDP (billion EUR)	612.8	637.2	666.7	708.5	-

Glossary

3G	3rd (cellular) Generation
4G	4th (cellular) Generation
ADSL	Asymetrical Digital Subscriber Line
ARPU	Average Revenue Per User
B2B	Business to Business
B2C	Business to Consumer
BI	Business Intelligence
BPM	Business Process Management
BPO	Business Process Optimisation
BWA	Broadband Wireless Access
CAPEX	Capital Expenditure
CDMA	Code Division Multiple Access
CDMA EV-DO	Code Division Multiple Access Evolution-Data Optimized
CDN	Content Delivery Network
CE	Consumer electronics
CRM	Consumer Relationship Management
DBS	Digital Broadcasting System
DECT	Digital Enhanced (former European) Cordless Telecommunications
DIY P2P	Do It Yourself Peer-to-Peer
DMB	Digital Multimedia Broadcasting
DSL	Digital Subscriber Line
DTT	Digital Terrestrial Television
DVB-T	Digital Video Broadcasting - Terrestrial
ETV	Enhanced TV
FTTB	Fiber To The Building
FTTC	Fiber to the Curve
FTTH	Fiber To The Home
FTTx	Fiber To The x (Home, Building, Premises, Curb)
GDP	Gross Domestic Product
GPON	Gigabit Passive Optical Network
GPS	Global Positioning System
HD	High Definition
HDTV	High Definition Television
HSPA	High-Speed Packet Access
HSPDA	High-Speed Downlink Packet Access
HSUPA	High-Speed Uplink Packet Access
ICT	Information and Communication Technologies
IM	Instant Messaging
IMS	IP Multimedia Subsystem
IP	Internet Protocol
IPTV	Internet Protocol Television / TV over IP
ISP	Internet Access Provider
IT	Information Technology
LAN	Local Area Network
LCD	Liquid Crystal Display
LTE	Long Term Evolution
MMS	Multimedia Messaging Service
MP3	MPEG Audio Layer 3
MRP	Manufacturing Resources Planning
MVNO	Mobile Virtual Network Operator
NGA	Next Generation Access
OPEX	Operating Expenditure
OS	Operating System
OSS/BSS	Operational Support System/Business Support System
PC	Personal Computer
PLM	Product Lifecycle Management
POS	Point of Sale
PSTN	Public Switched Telephone Network
PVR	Personal Video Recorder
QoS	Quality of Service
RCS	Rich Suite Communication
RFID	Radio Frequency Identification
SD	Standard Definition
SMS	Short Message Service
SNS	Social Network Services
SOA	Service Oriented Architecture
TDM-B	Time Division Multiplex
TD-SCDMA	Time Division-Synchronous Code Division Multiple Access
TMT	Technologies/Media/Telecommunications
TV	Television/TV set
UGC	User Generated Content
UHF	Ultra high frequency
UMTS	Universal Mobile Telecommunication System
USB	Universal Serial Bus
VDSL	Very High Speed Digital Subscriber Line
VHF	Very High Frequency
VOD	Video On Demand
VoIP	Voice over IP
W-CDMA	Wideband Code Division Multiple Access
WiBro	Wireless Broadband
WiMax	Worldwide interoperability for Microwave Access

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IDATE

www.idate.org

Founded in 1977, IDATE is one of Europe's leading centres for consulting and research. Our mission is to accompany our clients' strategic decisions in the Telecom - Internet - Media sectors. IDATE is also a key player in fostering debate between major players in these sectors, notably thanks to the DigiWorld Programme (DigiWorld Club, DigiWorld Summit, Communications & Strategies…).

Consulting

IDATE has built a reputation for credibility and independence in conducting studies and consulting missions for our clients:

- Market Studies: techno-economic monitoring, modelling and forecasts, sector-based analyses, surveys
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- Strategic Marketing: assistance in the launch of new products, business planning
- Public Policies: defining and assessing government policies, socio-economic impacts, project piloting, regulatory benchmarks

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IDATE's clients benefit from the knowledge and expertise of its teams of specialists, and from its ongoing investment in its information and strategic monitoring system: publication of reports, databases, online services, analyst support…

DigiWorld Programme

IDATE is also instrumental in providing a forum for international debate between the industry's key players through its annual DigiWorld programme, supported by its members representing the sector's most prominent companies:

- DigiWorld Network: a series of monthly meetings in European capitals and international business trips
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- DigiWorld Publishing: the DigiWorld Yearbook and the DigiWorld Economic Journal (Communications & Strategies)

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IDATE is pleased to present its market report programme for 2009. These reports are a natural extension of the work performed by our teams of specialists and of our ongoing investment in our information and strategic monitoring system dedicated to the sectors' markets and player strategies.

More than just a series of publications, this collection of reports is an integral part of IDATE's goal of offering a unique means of understanding and keeping track of the changes at work in the Telecom, Internet and Media industries:

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- a range of personalised monitoring and analysis services supplied by IDATE experts: strategic monitoring service, hotline, working meetings and seminars, bespoke reports.

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- Innovative services for SMEs (survey)
- Telecom service offers aimed at SMEs

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Rexecode, Pierre Audoin Consultants and IDATE have joined their skills and expertise to create an Information and Communication Technologies Economic club.

The Club's goal: to promote understanding of the information and communication technologies sectors, and to map their market prospects for the next two years.

The Information and Communication Technologies Club's mission is to analyse recent economic and technological trends on ICT segments (computing, telecommunications, components), to alert members to risks of economic shifts, and to further understanding of the issues that these sectors are facing (financial, technological changes).

Companies, public organisations and professional organisations participating in Club meetings benefit from four services:

- **Monitoring** the economic situation of ICT markets
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- Shedding light on the sector's **issues** as well as the links between economy and technologies.
- An **exchange forum** for players and observers of ICT markets to discuss and comment on the proposed analyses

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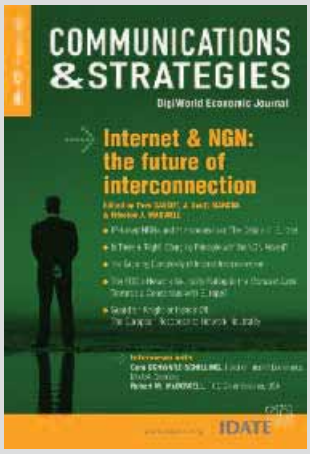

COMMUNICATIONS & STRATEGIES is an international quarterly journal that aims to publish peer-reviewed papers, focusing on the industry's key issues, and offering a forum for the finest socio-economic analysis of the telecoms, IT and audiovisual sectors.

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