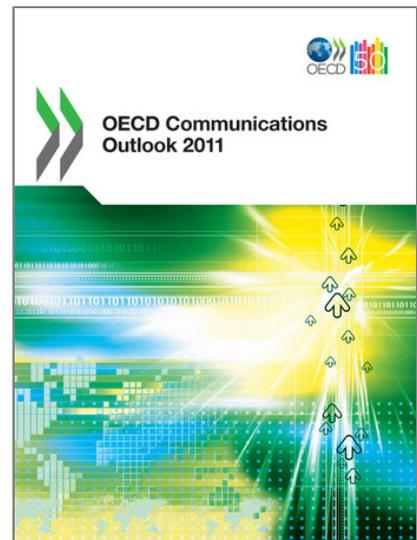


OECD *Multilingual Summaries*

OECD Communications Outlook 2011

Summary in English



- The eleventh biennial *OECD Communications Outlook* examines recent developments in the communications sector, which has emerged from the global financial crisis (GFC) with a resilience and underlying strength reflecting its critical role in today's economies.
- This latest edition covers developments such as the emergence of next generation access (NGA) networks and the imminent exhaustion of unallocated IPv4 addresses, and aims to provide an overview of efforts on the part of countries to promote competition and foster innovation in communication markets through regulation.
- It also examines the issues surrounding broadcasting markets, Internet infrastructure, communications expenditure and use by households and businesses, and trends in trade in telecommunications services.

The telecommunications industry has proven resilient

The telecommunications industry has fared relatively well during the GFC. Mobile communication markets continued to demonstrate resilience, but the overall amount of telecommunication revenue experienced a decline of 5.1%: the market was valued at USD 1.16 trillion in 2009, compared to USD 1.17 trillion in 2007 and USD 1.21 trillion in 2008.

This edition of *Communications Outlook* is the first to examine the effects of the GFC. Firms headquartered inside and outside the OECD area differed in their experiences. While revenue fell in both areas during 2009, firms headquartered in OECD countries increased their net income, despite an overall decline in revenue.

The resilience of communication markets can be traced to a number of reasons: long contract durations, the emergence of bundled offers, and the fact that communication services are increasingly perceived as non-discretionary spending items. Households seeking to reduce expenditure seem to be economizing in other areas, at least as a first measure. The increasing prevalence of bundled services has played a role in this shift by reinforcing customer loyalty and reducing churn – particularly beneficial for operators during economic downturns. Finally, the experience of the dotcom bubble meant that telecommunication firms were better placed to meet the challenges of the GFC.

NGA networks are in a critical phase of development

Some consider the shift to next generation access (NGA) networks a “once in a generation” decision as the impact on competition dynamics and market structures will likely be spread over more than a decade. Previous comparable infrastructure roll-outs (the public switched telephone network, cable television networks) were mostly deployed during the monopoly era, when little attention was paid to the resulting effects on competition. A key question is then whether multiple fibre networks will be able to compete in urban areas and whether one, at most, may be economically deployed in more sparsely populated regions. Whether wireless access networks provide a cost-effective and competitive alternative in those areas, or continue to be predominantly a complement, remains to be seen.

There may be dissatisfaction among certain stakeholders with the current pace of infrastructure upgrading or new deployment. Key debates in OECD countries surround how and when public intervention to attain policy objectives is warranted, and which regulatory settings best promote private investment and competitive choice for consumers. In these cases, careful analysis should be undertaken to ensure that public investment does not result in reduced competition. For example, the choice of topology in NGA networks plays a critical role in providing regulators with adequate tools to enforce competition in cases where there is insufficient alternative infrastructure. There may also be economic and technological challenges to unbundling fibre networks, contingent on the technology option and interconnection topology chosen. The future implications of these choices need to be taken into account.

The emergence of NGA networks has foregrounded the debate on vertical separation of telecommunication networks, previously undertaken in utilities such as electricity networks. Governments may use vertical separation, either structural or functional, as an instrument to encourage competition; this has recently been the case in some OECD countries.

Boost in mobile broadband services and the need for spectrum resources

Mobile broadband services are becoming increasingly popular in the OECD area and smartphones already represent a significant share of handsets in many countries. This boost has been fuelled by inexpensive, flat-rate mobile data plans. Mobile broadband is among the areas where growing revenues are expected. The launch of tariff plans better suited to customers has stimulated growth in data use, in conjunction with the success of “application stores”, which have created a business model that encourages the availability of content and new services.

Increasing traffic on mobile networks may reduce network performance in the busiest areas and times of day, requiring operators to invest in network capacity to allow for faster speeds and a higher level of simultaneous use. Operators are also developing tariff options to better manage network use and user requirements. Commercial deployment of Long-Term Evolution (LTE) technology has also begun with initial deployments in Sweden and Norway at the end of 2009, and WiMAX-based fourth-generation (4G) services in the United States. On the policy and regulatory side, the key issue is how to encourage investment and competition to meet the needs of users.

Newly available spectrum resources, such as those released by the digital dividend, should play a role in accommodating the growing demand for mobile data services. The opportunity to benefit from these resources is clear. Furthermore, lower spectrum bands provide good transmission capabilities and require fewer base stations to deploy in a specific region, making them especially suitable for rural areas.

The supply of IPv4 addresses runs out in 2011

The Internet Assigned Numbers Authority (IANA) assigned the last five unallocated IPv4 address blocks to the regional registries (RIRs) in February 2011. Although the RIRs can still allocate their remaining addresses, depletion is quickly approaching, and is expected in mid-2011.

The Internet was originally designed as an experimental research network, not a general purpose, world-wide network. The version of the Internet Protocol in current use, IPv4, is insufficient to accommodate present and future needs for address space. This shortage has been accelerated by mobile devices, always-on broadband connections and virtual hosts that increase the need for IP addresses.

Over the past two decades, the shortage has driven the development of various technological solutions and techniques aimed at maximising the efficiency of the current pool of IPv4 addresses (e.g. Network Address Translators). Nonetheless, the implementation of IPv6 is the only long-term solution able to ensure the capability of the Internet to connect billions of people and devices. IPv6 was designed to provide a vastly expanded address space. However, IPv6 represents only a very small portion of the Internet, despite experiencing very strong deployment growth. In early 2011, only 8.3% of routed networks were able to handle IPv6 traffic. The reasons for modest deployment of IPv6 include the associated costs, lack of backwards compatibility with IPv4, and the weak business cases for migration to IPv6. There is, nonetheless, increasing interest in promoting policy initiatives to raise awareness of IPv6 and to encourage IPv6 research.

Broadband prices decline slightly while speeds grow

Between September 2008 and September 2010, the price of a selected broadband connection fell by an average of 5% for cable and 2% for DSL year-on-year across the OECD, while the average download speeds of offers increased between 15% (DSL) and 20% (cable) per annum.

The trend towards increasing speeds is underpinned by infrastructure upgrades, based on the roll-out of fibre infrastructure and the upgrading of existing DSL and cable networks. Despite most fixed broadband offers having no restriction in terms of data caps, some 29% of offers surveyed included caps, down from 36% in 2008. Data caps are much more common for mobile broadband offers where capacity is more limited. Fixed broadband networks generally follow the opposite trend: increases in entry-level data allowances have taken place in some countries, where smaller data caps of several hundreds of megabytes per month are no longer present.

Over the last two years an increasing number of operators have launched broadband services with faster download speeds. In September 2010, at least one operator among those surveyed advertised broadband service with 100 Mbps and above in 23 countries of the OECD area. This statistic should be taken with caution, however, as actual speeds are usually much lower than those advertised.

The growth in take-up of broadband services has seen consumers become increasingly aware of the quality of service they are provided with, while increasing attention is being paid to the information used to inform stakeholders. As a result, certain governments and regulators in the OECD area now require operators to provide information about the quality of service, while some operators and governments are launching web-based measurements sites.

Prevalence of triple and quadruple play bundled offers

Communication services are now frequently sold as mixed bundles where the consumer chooses between purchasing a stand-alone service (e.g. broadband) or a bundle with a significant reduction to the sum of stand-alone prices. This may benefit consumers by shifting their interest from a high-valued to a less-valued element, and by providing additional benefits such as unified billing, integrated services or customer assistance.

However, the complexity of some bundled offers makes them increasingly hard to interpret and poses additional challenges for consumers attempting to compare prices and make informed decisions. In addition, bundling may decrease the ability of users to switch providers or drop a service.

Bundled offers reflect increasing convergence in communications markets, where virtually all services may be delivered over an IP-based broadband connection. Triple-play offers are present in virtually every OECD country and fixed voice, broadband and television services may be purchased separately or as part of double and triple-play offers. The availability of television services is sometimes contingent on the extent to which operators have upgraded their networks. Integrated quadruple-play offers (triple-play plus mobile services) are less widespread. Few operators offer a full convergent package in one subscription due to the need for a mobile subsidiary or alternative arrangement, or due to prospects of higher revenues from separate fixed and mobile offers.

Mobile subscriptions grow: new devices and business models

Mobile access is the primary communication access path in the OECD area, and the total number of mobile subscriptions reached 1 257 million in 2009. While still increasing, the growth rate has slowed as the compound annual growth rate fell from 46% by the end of the 1990s to only 5% between 2007 and 2009. Most of world growth in mobile subscription now comes from developing countries. The mobile subscription penetration rate in the OECD area was 103% in 2009.

The growth of the application model is causing profound transformations in business models in conjunction with the use of new devices such as smartphones and tablet computers. The market size and reach of these applications is starting to be comparable with traditional television counterparts. This implies a significant potential for advertising revenues.

Another recent trend is “sponsored connectivity” business models. These forego the direct relationship between customer and network provider, with service providers paying directly for the network connection. Examples of sponsored connectivity include e book readers and GPS services. ICT devices are increasingly equipped with direct connections to mobile networks, which contribute to the amount of traffic handled by these networks and encourage infrastructure upgrades.

Broadcasting and audiovisual content: a broader range of devices and the DTT switch-over

All OECD countries have made public their plans for the transition to digital terrestrial television (DTT), which will involve the switch-off of analogue broadcasts. More than 10 OECD countries have already completed this transition and the European Union has set a target of 2012 for the cessation of analogue transmissions.

One of the outcomes is the release of significant spectrum resources (“the digital dividend”), which allow for broad territorial coverage and very good reception inside buildings. This constitutes a unique opportunity to enhance access to communication services and boost mobile broadband services, which require significant spectrum resources. Various OECD countries are setting up auctions to make available this resource as an opportunity to expand wireless access and service quality.

Other implications of the digital switch-over include the potential to broadcast HDTV channels and launch new channels, which broadcasters are using to target specific audiences. Cable and satellite television broadcasters are responding by launching new television packages that address demand for targeted programmes. The total number of national channels in all the European OECD countries rose from 816 in 2004 to 2 529 in 2009. Another outcome of increased channel availability is audience fragmentation. This poses new challenges to broadcasting revenue models and encourages broadcasters to reconfigure their business models, as well as intensifying the inter and intra-platform struggle for revenue sources.

Communication technologies and broadband, in particular, are increasingly perceived as a critical factor in social and economic development. They provide the underlying connectivity for a range of innovative applications in areas like smart energy, electronic health services, e government, and so forth.

Fostering competition and innovation plays a key role in making services available to consumers and business at inexpensive prices, as well as providing adequate quality of service levels. Liberalised telecommunication markets have a strong record in OECD countries, as regulatory frameworks have achieved a certain degree of maturity. They are now at a crucial point in their development, as the evolution towards NGA may have an impact on market structure in the decade to come. Policy makers and regulators should encourage investment, innovation and competition at all levels of value chains across the communications industry.

Measures providing an incentive to deploy communication infrastructures and achieve efficient competition should be complemented by broader demand-side initiatives, which increase the incentive of consumers and businesses to use communications services, create new business models, and then integrate these into their daily lives.

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