

# Consulting



## Telecoms in Europe 2015

### Executive Summary

A Report for the Brussels Round Table

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## EXECUTIVE SUMMARY

How will we communicate with our peers and share information in 2015? What kind of services will be proposed to us and by whom? Will Europe be a leading information society and what will its telecommunications industry look like in ten years from now? Which role will be played by regulation and public policy in building this future?

This report attempts to provide possible answers to these questions through a scenario approach (section 3) that draws upon a detailed analysis of the current state of the European industry (section 1) and its likely evolution over the next decade (section 2) with a focus on consumer-oriented services. The central role played by regulation on new infrastructure investments that are critical in shaping this future is discussed in the final section of the report.

### The European telecoms paradox: best of times, worst of times?

The first section of the report explores the unprecedented paradox currently faced by the European telecommunications industry. Never has this industry been such a central contributor to the European economy and society at large. Yet, as epitomized by financial markets' cautious sentiment towards the sector, never has the industry's short to medium term outlook appeared so challenging.

### Telecommunications is a central contributor to the European economy and society

Telecom service and equipment segments are increasingly contributing to the European economy and its growth. In fact, over the past five years, they have contributed more to Europe's GDP growth than IT (+4.3% per annum vs. +0.2%) and have been more dynamic than in the US (+0.9% per annum). They now account for nearly 3% of European GDP.

Furthermore, the telecoms sector is playing a central role in shaping a leading European information society. The massive and sustained investments in first generation broadband infrastructure have placed Europe at the forefront of fixed (#2 behind Asia for DSL) and mobile broadband (#1 for UMTS) adoption in respect to other regions.

### Financial markets voice concern about the European telecoms sector

Yet, despite this contribution, investors have expressed a negative sentiment towards the European telecoms' sector over the recent period, resulting in severe share price underperformance compared not only to general stock indices but also to other telecom indices worldwide (-35% and -20% respectively since January 2005).

Relative to other regions, investors formulate three major concerns about Western European telecoms' current situation and its short to medium-term outlook: weakening volume fundamentals, severe deflationary pricing and increased regulatory scrutiny. These concerns are now exacerbated by investors' anticipation that both remaining growth drivers of the industry (mobile and broadband) will gradually lose steam.

The resulting low European telecom stock valuations are profoundly impacting the landscape which increasingly features pan-European expansion, cost-driven consolidation and public-to-private buyouts. Some of these trends are already negatively impacting investment and R&D patterns in the industry.

### The sector outlook faces growth challenges

Over the past five years, growth of the European telecom services market has gradually eroded (from double digit rate to less than 4% in 2005 and expected below 3% in 2006), mainly due to the stagnation of the wireline sector, with the decline in fixed telephony being barely compensated by the growth in broadband access. The sector's engine for growth has resided in mobile services, which now account for over half of the industry revenues.

The short to medium term outlook for the industry's existing services is weak: an acceleration of fixed telephony decline, a maturing DSL access market, the mobile penetration saturation looming on the horizon and slower than expected 3G take-off all pave the way for further growth deceleration, and possibly deflation in some advanced European markets. Without the introduction of new monetizable services, the possibility exists of a revenue gap if price deflation is faster than the growth in usage of existing services.

## Multiple forces create both opportunities and challenges for the European telecoms industry

The second section of this report discusses the multiple exogenous forces likely to shape the future of the industry over the next ten years. In addition to the key role of regulation and public policy discussed in the final section, three clusters of forces have been identified: end-user expectations and usage patterns, technology disruptions and evolutions; and globalisation transitions.

The combination of these multiple forces will impact the industry in five major ways including an expanded "co-opetition" arena (in which players are both partners and competitors), revenue model transformation and value chain reconstruction.

### Changing end-user expectations, behaviours and usage patterns

Beyond a generalized end-user need for a considerable increase in network bandwidth, operators will be facing diverging communications needs. While younger users will favour multi-faceted (but hardly monetizable) electronic communications and drive service innovation, older people will demand technology simplification.

Beyond new consumer segmentations, operators will need to adjust to increasingly individualized consumption of communications and digital goods, requiring new marketing and commercialization approaches. These multiple evolutions will take place against a background of demand for ubiquitous mobility.

### Technology improvements and disruptions

Multiple technology improvements and disruptions in telecoms (migration to all-IP, all-optical networking), media (content digitalization, high definition) and in other fields (e.g. computer processing, storage, nanotechnology, human-interface machines, power management) are enabling the creation of a wide array of new services. At the same time, technological change is reducing barriers to entry for both infrastructure and services.

### Globalisation transitions

The next few years will see a complete reshuffle of regional balances and the emergence of some new mega telecom markets. By 2010 China alone will have more mobile and broadband subscribers than the entire Western Europe and nearly 3 times as many subscribers as the United States. The Indian user base will also be larger than that of the US.

This new world order has already produced visible effects with 4 of the top 10 mobile carriers in terms of subscriber base located in emerging regions and with Chinese vendors accounting for more than 7% of the worldwide infrastructure market. Benefiting from strong state support for local industry and broadband infrastructure development, these players will continue to transform the sector's economics and increasingly influence technology standards and directions.

### Likely major impacts on the industry

As a result of these trends, we expect to see an expanded "co-opetition" arena as the industry's traditional borders become ever more blurred. In the longer run, communications' usage and purchases will be increasingly intertwined with those of other digital goods, thereby blurring the boundaries between traditionally isolated segments and expanding the addressable market far beyond traditional services (e.g. mobile TV, visiophony, ambient gaming).

Another key development will be the carrier revenue model transformation along multiple dimensions: new pricing schemes, larger service offerings with new end-user services, expanded wholesale strategies and new funding mechanisms (based on advertising) for services. A key question is whether this transformation will result in higher overall revenues for the industry.

A third critical impact will be a reconstruction of the industry's value chain as reduced interaction and transaction costs between the three traditional activities of a carrier (network infrastructure, products and services provisioning, customer management) create turbulence for the vertically integrated models of the industry.

## Three possible futures for telecoms in Europe in 2015

The third section of the report presents three scenarios describing plausible outcomes for the European telecommunications industry by the year 2015. They can essentially be characterized as trap (Telepocalypse), intermediate (Convergence Compromise) and favourable (Evernet) outcomes in terms of addressable market size for the telecom service and equipment segments in 2015.

Each scenario was built upon a set of configurations for key variables derived from the major external forces and impacts identified in section 2 (and validated through a survey) as well as articulated around contrasted regulatory and public policy orientations.

## The central role of regulation and public policy

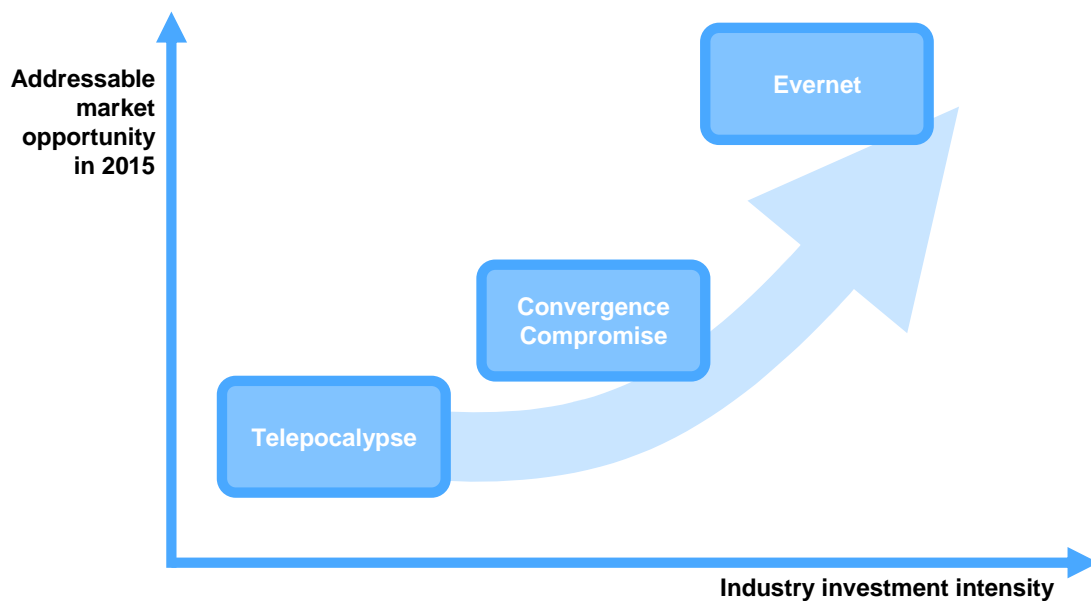
Beyond the influence of market-driven exogenous drivers, the three scenarios are deeply impacted by the regulation and public policies' role in shaping competition dynamics at both the application and infrastructure levels and influencing future investment behaviours.

The contrasted regulatory orientations considered range:

- from access at cost, to facilities-based competition for new infrastructures, and,
- from net neutrality, to tiered provisioning schemes for applications.

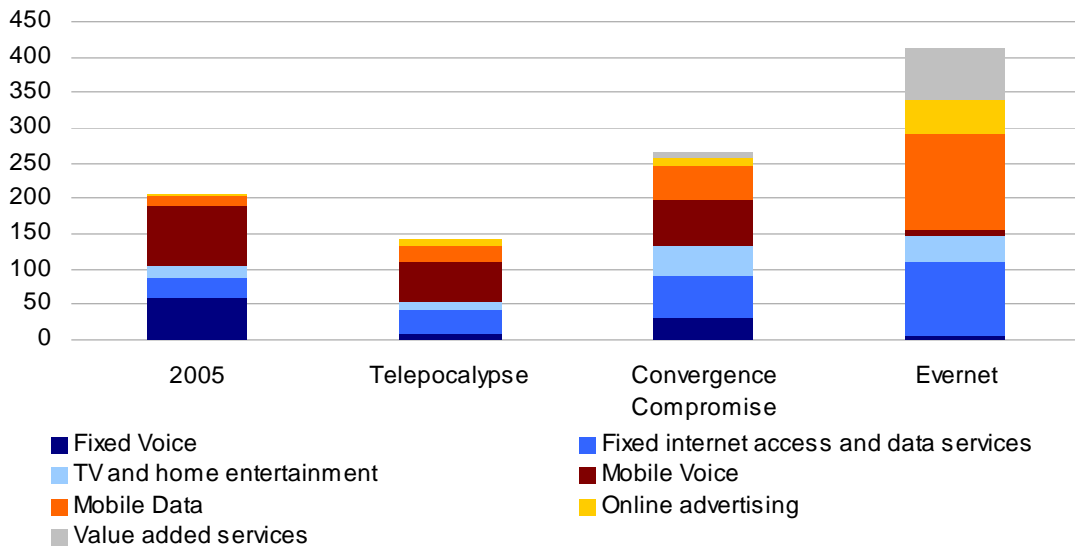
The key role played by active public policy through R&D funding programmes and the possible pan-European regulatory harmonisation are also considered.

Figure 1: Scenario framework



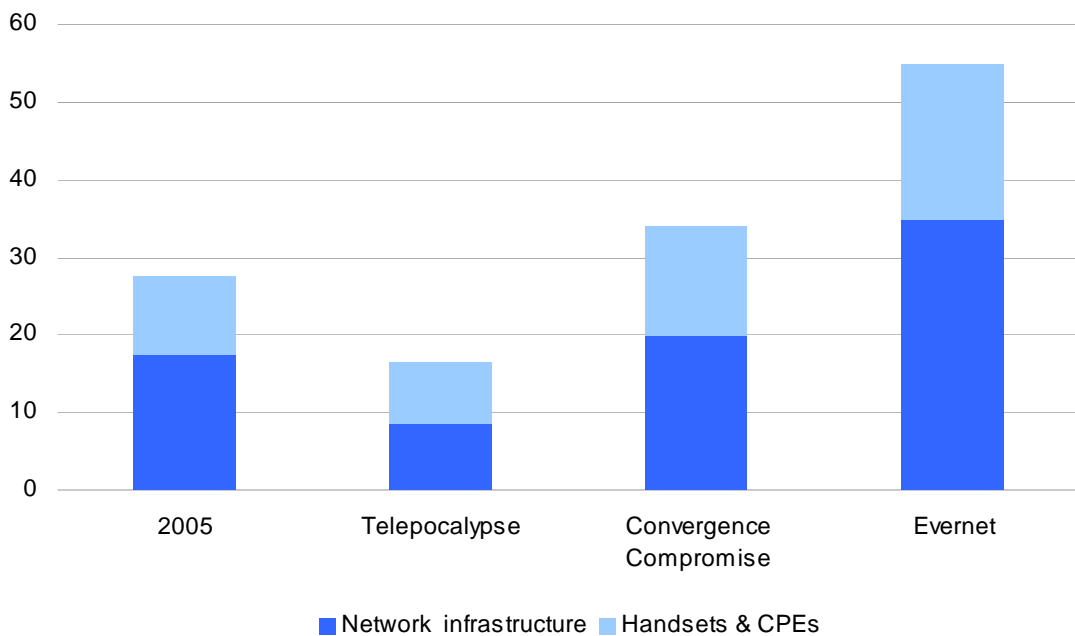
Source: IDATE

**Figure 2: Europe-5 addressable service market size in 2005 and in 2015 per scenario  
In EUR billions (2006)**



Source: IDATE

**Figure 3: Europe-5 addressable equipment market size in 2005 and in 2015 per scenario  
In EUR billions (2006)**



Source: IDATE

## Telepocalypse

This first scenario considered results from a "Mexican standoff" situation between carriers adopting a wait-and-see attitude and delaying or cancelling new network investments while the regulatory framework enforces a strict access at cost policy for new infrastructures and adopts a net neutrality stance in favour of application-based competition.

In this scenario, online advertising-funded service proliferation decimates most fixed and mobile service revenue sources of operators that are not matched by a corresponding increase in connectivity revenues.

High speed broadband availability has modestly improved and is sporadic as fibre and HSxPA – deployments remain concentrated in the densest urban areas, essentially targeting the corporate market, while less populated areas rely on isolated initiatives of wealthy municipalities for broadband improvement.

Contracting industry-wide revenues trigger a competitive shake-out and transforms telecoms into a utilities-like industry with only a handful of large private cost-optimized operators and state-sponsored organizations surviving.

## Convergence compromise

In this second scenario, tiered basic and premium converged applications coexist for the benefit of consumers while ensuring some service revenue streams in addition to connectivity revenues for operators.

High-speed fixed (fibre) and mobile broadband, fuelled by infrastructure competition in dense urban areas, becomes a reality while DSL coverage prevails across less populated areas.

The moderately growing market size produces contrasted strategic choices from operators to derive cost synergies: some focus on Pan-European consolidation and fixed/mobile integration whilst others turn away from application provisioning to become dedicated infrastructure providers.

This scenario occurs within a regulatory framework that largely continues to ensure retail-based competition through unbundling of non replicable legacy infrastructures across most territories while introducing facilities-based competition in dense urban areas and facilitating European harmonisation, traffic prioritization and commercial freedom for converged services.

## Evernet

Newly enabled services, particularly in the business-to-business and public administration domains (e-gov, e-health, machine to machine) generate cross-sector productivity gains for the European economy while pervasive fixed and mobile visiophony and seamless multimedia communications produce far-reaching benefits for European society at large.

Broadband becomes a new fabric of European society with minimum 50Mbps access available everywhere thanks to strong infrastructure competition fostering the proliferation of multiple fibre and high broadband wireless access networks across large territories.

The expanded role of the communications sector creates ample growth opportunities for both infrastructure and application providers and produced a vibrant, dynamic and competitive European telecoms industry.

This scenario is made possible by (i) a proactive European public policy stance that encourages cross-industry collaboration on new application development and (ii) a regulatory framework which stimulates fixed and mobile broadband facilities-based competition and encourages massive new infrastructure investments across most territories.



## Investment incentives

The concluding section of this report elaborates on the key correlation between regulation and investment in new infrastructures. This correlation is central to the likelihood of any of the three scenarios outlined, or close versions of them, coming into existence.

To aid consideration of these issues, a formal model was constructed, detailed in the Annex to this Report. In this model, regulatory policies for access services are taken into account by companies when deciding on investments to upgrade their access infrastructure. The model considers the impact on investment and consumer welfare of access-based regulation, and contrasts this with a situation in which competing infrastructure companies invest in the absence of such regulation.

### Different regulatory approach when new investment is necessary

There is a fundamental difference in the interaction of regulation with existing, legacy, infrastructure on the one hand, compared to prospective new infrastructure on the other, for which new investment is necessary.

For legacy infrastructure bottlenecks consumer welfare is maximized by obligating access at cost. This ensures strong competition in the retail market, which benefits consumers, and there is by definition no negative effect of investment. In this sense, cost based access regulation has worked and was the best available regulatory policy for access to legacy assets.

For new investment a different picture emerges. In areas of urban concentration competition is likely to occur regardless, meaning that infrastructure competition can make regulation unnecessary. In less concentrated or rural areas a different situation arises, as the cost of investment rises. In this scenario a single company is likely to be deterred from investing in new infrastructure if cost-based access regulation promises to reduce or remove the value of that investment. At the same time, in the absence of such regulation, a single investor would have limited incentives to share that value with competitors, potentially reducing retail competition.

## Policy implications from our model

Our model indicates an important policy trade-off:

- A policy of requiring access at cost can be expected to reduce investment.
- The model shows that such a lower level of investment can be detrimental to consumer welfare, especially if the investment is of very high value. In effect, there is a trade-off between lowering barriers to entry for retail competition and the extent of investment. In some conditions, as shown by the model, more investment is preferable to lower barriers to entry.
- The model finds that if there are two (or more) infrastructure competitors who invest in competition to each other, they create more investment and consumer welfare than a single firm which gives access to an infrastructure-less operator.
- The model also suggests there might be an important role for innovative co-operative models in which there is collaboration at the infrastructure level but then competition at the retail level. Such arrangements have emerged in other industries and might be expected to have benefits in telecommunications. We recommend this as an area for further consideration - future challenges are likely to warrant new arrangements.