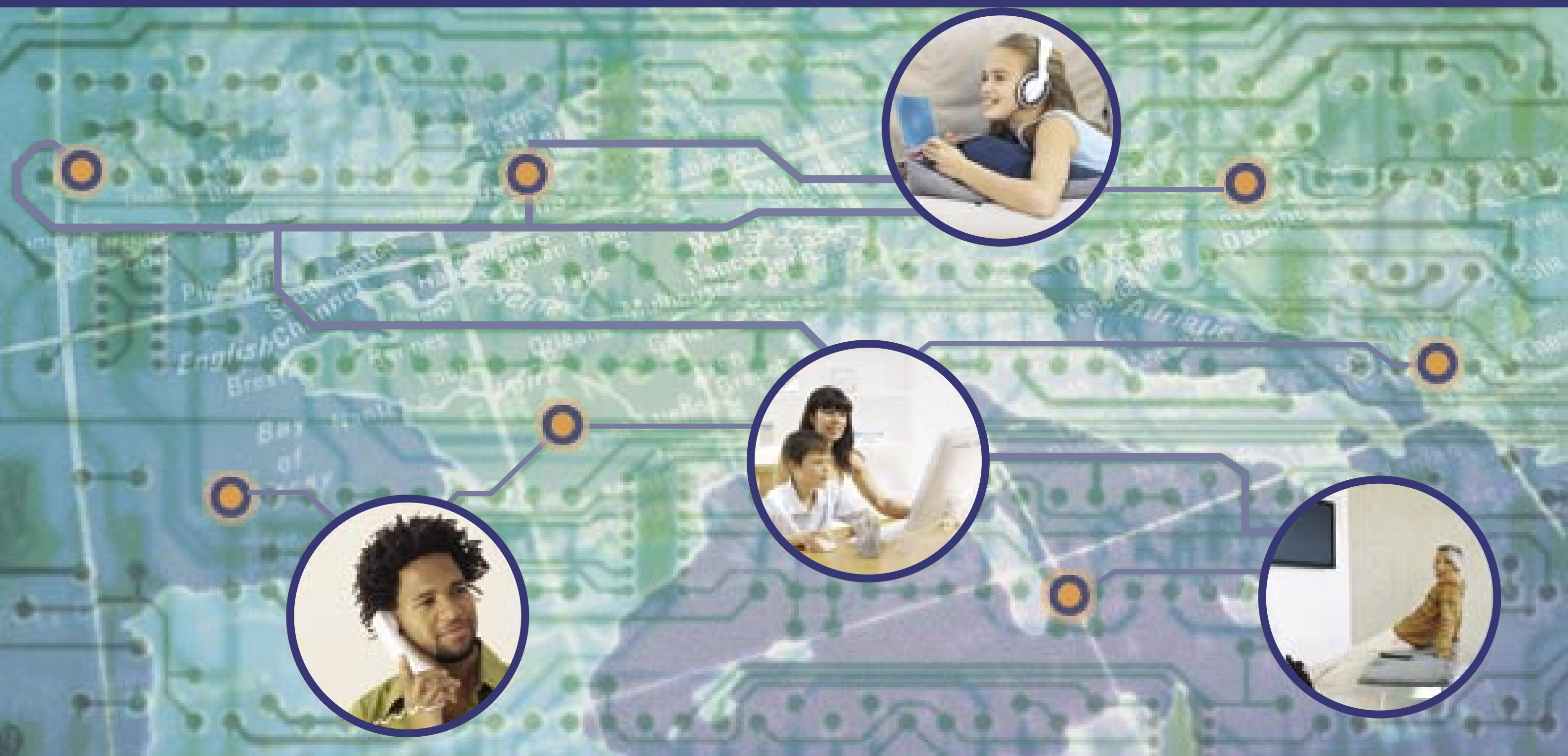
The Future Role of Cable in Shaping the Digital Home in Europe

EXECUTIVE SUMMARY



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EXECUTIVE SUMMARY

Shaping the Digital Home in Europe—Key Takeaways

- After broadband and Telephony, TV distribution is the next market being hit by the digital revolution and being challenged by new competitors such as telco operators
- Digital TV can be expected to overtake broadband within the next five years in terms of household penetration in Europe—becoming the driving force of the development towards the Digital Home and an inclusive digital society
- The development of the Digital Home brings significant benefits to the consumer: More choice, more control and better entertainment value—advanced markets show: Consumers adopt the new services fast once they understand their benefits
- The competition will be increasingly based on multiproduct bundles (TV, Internet, Telephony) that cover all household needs leading to one unified Digital Home market
- Scale will be increasingly important in the convergent competitive landscape as it allows to sustain the necessary upfront investments to build a competitive edge
- Telco incumbents will be in a good position to dominate the Digital Home market since they are by far the largest players in this space dominating cable TV competitors by a factor of 1:10 or more
- Nevertheless, in many markets cable TV operators will be the only credible contender to challenge telecommunication incumbents
- The upside of an accelerated path towards the digital home is significant: Cumulative investments of up to € 100 billion until 2010 would lead to the creation of 100,000 new jobs
- Thus the development of the Digital Home—largely driven by the DTV development—will prove to be a key enabler to implement the EU i2010 agenda
- Cable TV operators would become the most important job engine accounting for over a third of all jobs created by infrastructure providers
- Delaying the digital home market bears significant downside risks—cumulated investments of € 39 billion and close to 90,000 jobs could be lost or delayed
- To secure an accelerated path towards the Digital Homes in Europe policy makers need focus on four key areas:

  1. Refocus attention from broadband to convergence/DTV
  2. Ensure a balanced market structure and competition
  3. Balance consumer protection with long-term investment and employment objectives
  4. Rebalance regulation in favor of infrastructure-based competition

Creating the Digital Home in Europe

The digital revolution is progressing at an ever-increasing pace despite a somewhat slow start in most European countries. Consumers are shifting their time and spending budgets in favor of new, digital media. Driven by a steadily increasing base of PCs and broadband connections, the way consumers retrieve information, receive entertainment, and do their shopping has changed dramatically in most Western economies: Consumers spend more time online than reading newspapers or magazines; close to 50 percent of consumer hard- and software is already bought online in the United States; and in the United Kingdom and Germany one out of five music CDs will be ordered via the PC this year.

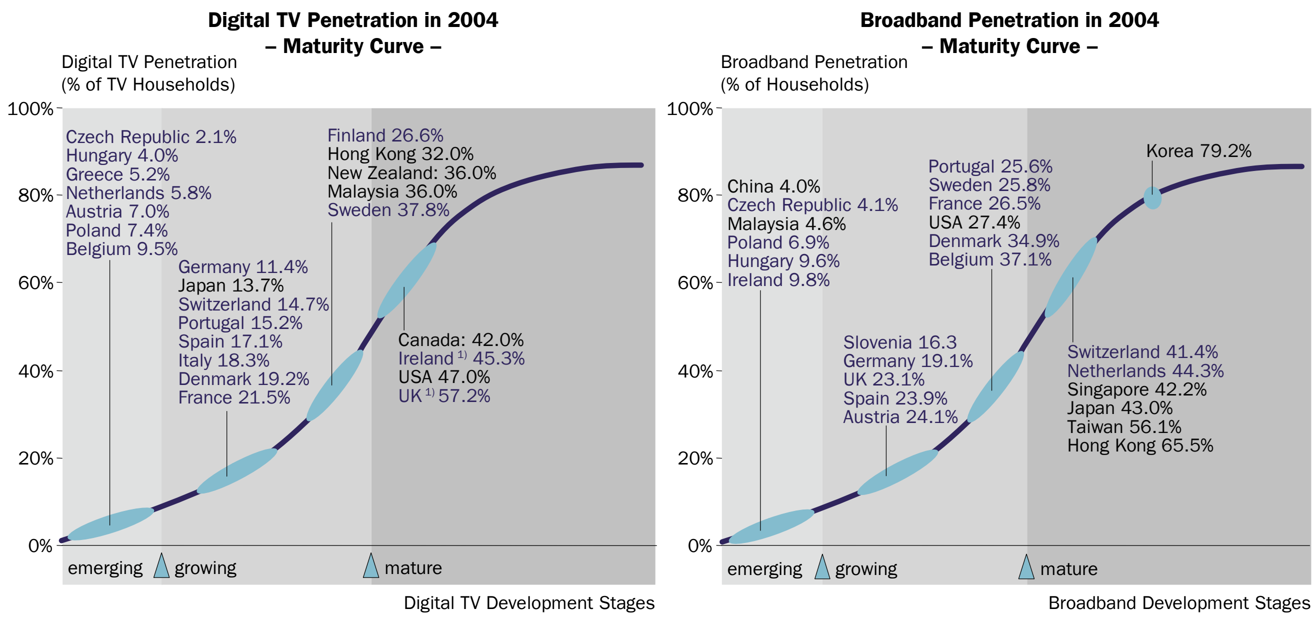
Now the next important segment of everyday life is being radically transformed by the digital revolution: Television. Although certain European countries such as the United Kingdom, and to a lesser extent, France, are making significant progress in terms of digital television penetration, international market comparison shows that the EU as a whole is lagging significantly behind other regions, most notably the United States and some Asian countries, in terms of penetration rates and service availability.

More than 50 percent of U.S. households already receive digital TV services, with no slow-down in growth on the horizon. This compares to a European average of only 20 percent (Exhibit 1). Our analysis of the developments in more advanced markets as well as in Europe suggests that the development towards Digital TV (DTV) will be one of the most important drivers of innovation and growth in the information and communication technology (ICT) sector: (1) DTV per se will soon be one of the largest growth segments in the ICT market. (2) DTV will provide a platform for growth for the local content industry leading to a diversity in programming never witnessed before and (3) DTV as the pre-eminent mass media and technology will prove to be the key for digital inclusion, opening the full potential of interactive services to parts of society that otherwise may remain excluded from a purely PC-based digital world. (4) Last, but not least important, DTV will act as a catalyst for convergence reshaping the competitive landscape for communication and entertainment services enabling significant economic growth and employment.

Our Midterm Vision: The “Digital Home 2010”

Despite the ever-increasing pace of change, clear signposts of the future landscape are emerging: Connecting

Exhibit 1: Digital TV and Broadband Penetration in 2004



European Countries | Non-European Countries

(1) Digitalization mainly driven by DTH in UK and Ireland

Sources: Informa 2004, ADL Broadband Update 2005, Forrester European Residential Broadband Forecast 2005, Screen Digest 2005, JP Morgan 2005, Booz Allen analysis the data points from our research in more advanced markets with sophisticated economic forecasting models, we developed a robust midterm vision for what we call the "Digital Home 2010". This outlook of the future development is meant to support the thinking of decision makers in the industry and in regulatory bodies.

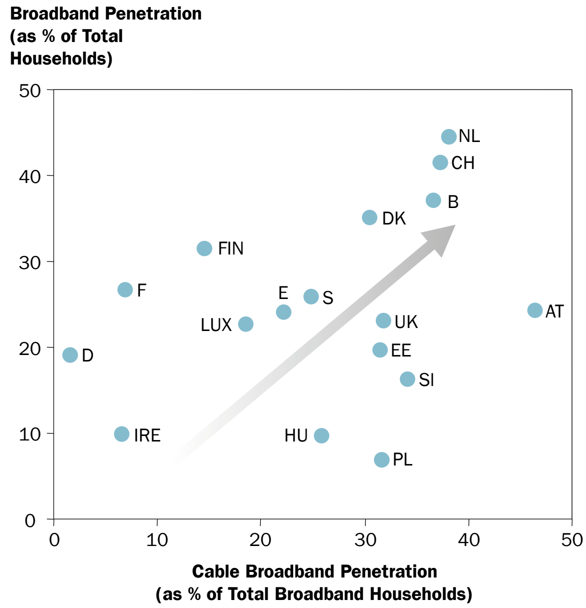
In the next five years most European households can be connected to advanced communication services, including both broadband internet and Digital TV. In fact, we expect that by 2010, Digital TV will already have outgrown broadband internet. Consumers will benefit from this development in many dimensions: Increased choice and quality and better control and interactivity will revolutionize the TV experience of tomorrow. The majority of European consumers will have access to a diversity of programming unheard of today in most parts of Europe. Since 2000 the number of available TV channels available in Europe has doubled to a staggering 1,600 channels—in the most advanced TV market in Europe, the United Kingdom, consumers can choose between more than 400 TV programs. But it is not just about quantity. Consumers also have access to higher quality content: From premium sports or movies to leading documentaries and European and local content programs. In addition, higher-quality content will increasingly be offered in better picture quality based on High Definition TV (HDTV) technology. Steadily increasing HDTV adoption rates in the United States and Japan as well as an increasing demand for HDTV sets in Europe underline the consumer interest for these services. Moreover, consumers will be in better control of their viewing experience. Interactive Program Guides (IPG) will help them to navigate through the plethora of available content. In addition, a lot of content will be offered "on demand" or can be easily recorded on a Personal Video Recorder (PVR) and retrieved at a time convenient for consumers.

Again, market experience in the United States suggests that consumers will readily adopt the new services, once they become available: Gemstar, the leading IPG provider—available to 12 million homes in the United States—reports usage numbers that match the total usage of private internet users in the United States. Comcast, the leading U.S. cable TV (CATV) provider, expects to see more than 1 billion on-demand sessions on its network this year—more than 20 sessions per active subscriber per month. Last, not least, TV will become interactive allowing consumers to react and interact directly using buttons on their remote controls. Apart from purely commercial and entertainment services, the interactive development also provides an opportunity for T-government and other information services to reach out to a much greater number of homes. Since August 2004, interactive TV allows Community Channel viewers in the United Kingdom to donate money to a number of different charities via the set-top box on their televisions. One of the greatest successes was the Tsunami earthquake appeal in December 2004, which has managed to raise in excess of 1.25 million pounds so far. Similar developments can also be seen in some Asian countries and in the United States, where for example, material from the Democratic and the Republican National Conventions as well as presidential debates was available on Video on Demand (VoD) to 20 million homes.

Evolving Competitive Landscape for the Digital Home Market

Not only will the services on offer change, but the way they are marketed and delivered to the consumer will change as well. The majority of Digital Homes will be able to receive the video and TV services described above together with broadband internet and advanced telephony services from one single provider. In advanced markets that lead the development, consumers will have a choice of providers to buy the services from—in most cases telecommunication providers and CATV operators—and with that also a choice of technologies (Hybrid coax/Fibre vs. Digital Subscriber Line DSL). The infrastructure providers will take a very important and proactive role in shaping this new convergent market environment (Exhibit 2). The development in broadband in Europe has already shown that countries

Exhibit 2: Broadband and Cable Broadband Penetration (Europe, 2004)

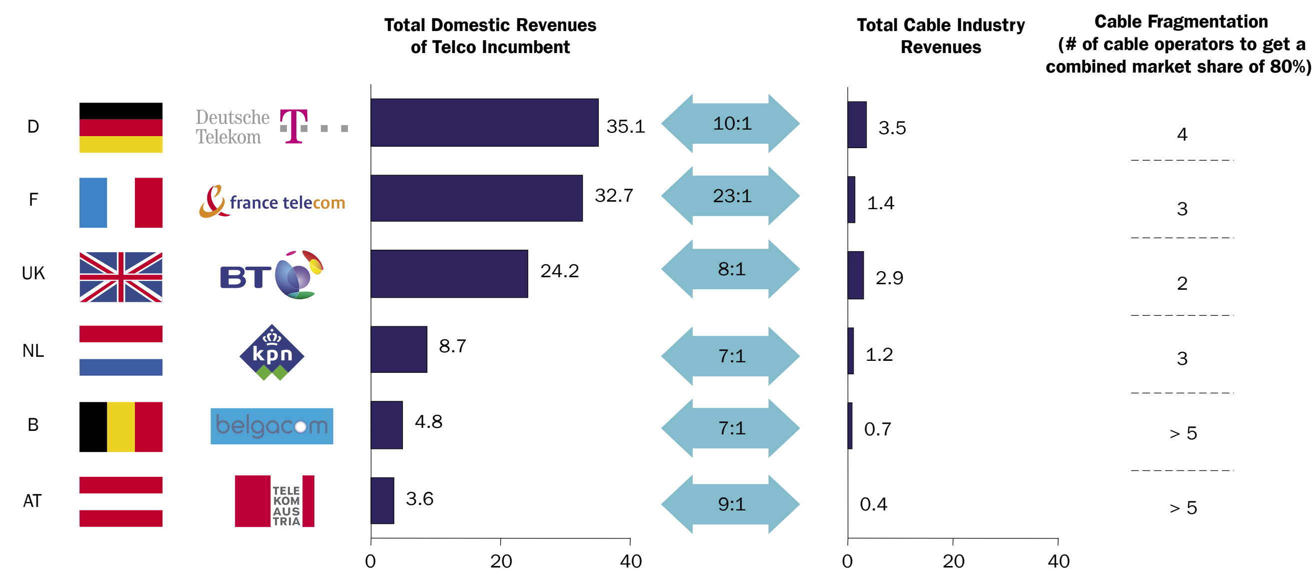


Sources: Screen Digest 2005, Booz Allen analysis with strong, infrastructure-based competition frequently take the lead in terms of overall household penetration of these services. And as in other infrastructure-based businesses, their investments will pave the way for other market participants, such as technology, equipment, and content providers, to prosper.

All providers of telecommunication infrastructure, including the former telecommunication monopolists, are jockeying for position to serve the Digital Home market. That means they are investing to provide so-called triple play services (telephony, internet, and TV services)—adding whatever part is missing to their portfolios. The main motivation differs substantially, however. Whereas CATV operators and alternative telco providers look at the Digital Home market primarily as a way to grow their business, typically, for telecommunication incumbents, defensive considerations prevail: With their fixed telephony business already under attack from mobile services, unbundled local loop (ULL) providers, and the digital telephony services (VoIP) offers from cable operators, they see video services including TV not only as a potential growth avenue, but as an effective means to defend their customer base by preventing alternative players with alternative infrastructures to capture their customer relationship.

Experience from other markets shows that consumers are quite willing to source all services (i.e., TV, broadband internet, and telephony) from one supplier if the bundle on offer is attractive. The implications for the evolving competitive landscape are twofold: First, it will become increasingly difficult to compete for the Digital Home unless a provider is able to offer the full suite of services. In the midterm that leaves CATV operators as the only credible contenders to telco incumbents. All other players are competing on a technology basis (e.g., DTH and DTT—digital satellite and digital terrestrial distribution technologies) that is not (yet) capable of delivering triple play services. Second, size will become increasingly important as a competitive factor, as digital services provide significant economies of scale. To put it simply: the larger the subscriber base served, the higher the margins to be gained—and this increases the capability to reinvest in upgrading networks, building alternative platforms, and bidding for high-quality content to further improve the competitive advantage. Reaching scale is also vital in becoming an attractive partner for other players in the Digital Home value chain (like content providers) and is fundamental to foster confidence in new business models. The vital role of sheer size and scale clearly puts the former telecommunication incumbents in the pole position in the race for the Digital Home market. In most markets incumbents such as Deutsche Telekom, France Télécom, BT, or KPN outsize their largest infrastructure-based CATV competitor in terms of revenues generated or subscribers served by at least a factor of 10 to 1 (Exhibit 3 showing revenues of telecommunication incumbents versus the entire local cable industry).

Exhibit 3: Revenues of Telecommunications Incumbents versus Cable Industry (€ billion, 2004)



Note: Revenue includes fixed telephony, mobile telephony, internet access and TV distribution
Sources: ABN Amro 2004, Screen Digest 2005, Company Information, Booz Allen analysis

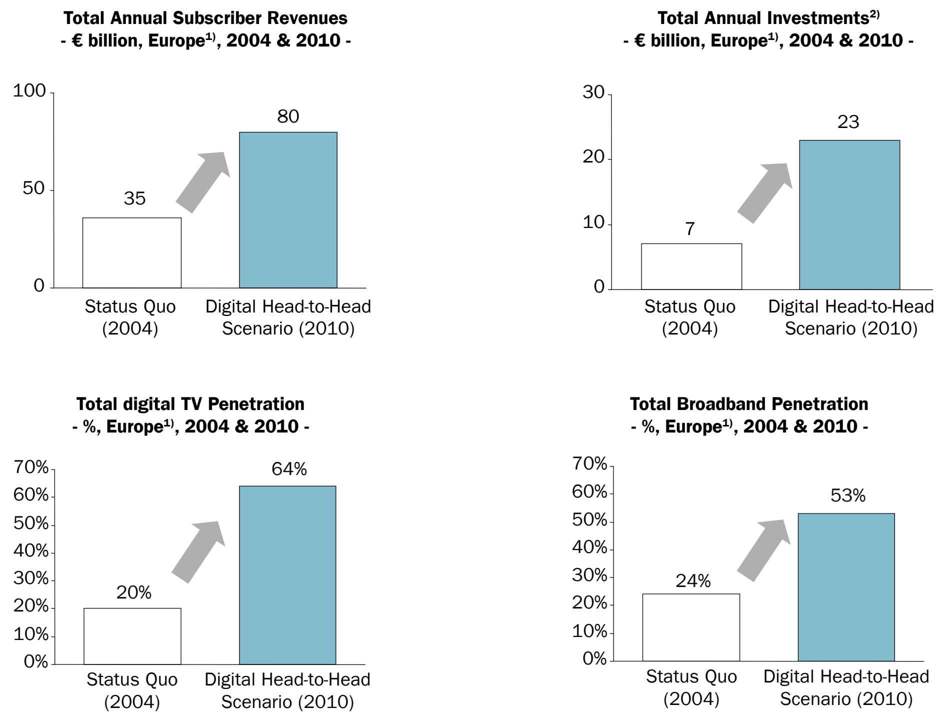
Challenges for Regulators in Supporting the Digital Home 2010

Technological developments, competitive moves, and consumer preferences are changing many underlying assumptions of the current regulatory regime at an ever-increasing speed. For example, distribution was traditionally regarded as a bottleneck, resulting in regulators taking a protective stance towards content providers to distribute their content. This has changed in the Digital Home environment: spectrum availability and bandwidth is less of an issue. In fact, there might well be an oversupply of distribution capacity and an undersupply of content. To protect consumers, price levels have frequently been regulated, and consolidation in distribution has often been prevented. In the Digital Home era, however, consumers can choose between different media distributors, and prices will increasingly be regulated by market forces. Continuing with the existing regulatory frameworks of the past may significantly hinder the advancement of the Digital Home, ultimately putting industry growth and consumer satisfaction at risk.

Regulators on the national and EU level have started to acknowledge that competition will increasingly take place in a convergent market environment and are trying to understand the implications for the regulative regime. On the EU level, important public policy and regulatory initiatives have been introduced to address the converging market environment, such as the introduction of the i2010 agenda, policy initiatives to bridge the digital divide, the communication on accelerating the transition from analogue to digital (terrestrial) broadcasting, and the application of competition policy principles on access to (and exploitation of) content (rights) for different distribution platforms. Going forward, the forthcoming revision of the Television without Frontiers directive (TVWF) and the review of the regulatory framework for electronic communications networks and services (NRF) in view of "next generation networks" as well as the review of the list of relevant product and services markets as recommended by the Commission under the NRF will further reshape the regulative framework at the EU level.

Yet, most policy makers and regulators at national level are struggling to implement coherent midterm public

Exhibit 4: Summary Results of the "Digital Head-to-Head" Scenario



(1) Includes: Austria, Belgium, Denmark, Czech Republic, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Netherlands, Poland, Portugal, Romania, Spain, Sweden, Switzerland, and UK
(2) Investments in Capex and programming Opex
Source: Booz Allen analysis

policies and regulatory instruments to keep pace with the technological and market developments ensuring a fair and level playing field for all companies willing to invest in that area. The EU Commission has already taken a first step in the right direction by entrusting one Commissioner with the responsibility for both Information Society and Media. As such this Commissioner is effectively the Commissioner for convergence. However, most European countries continue to regulate media and telecommunications without much coordination among authorities, which often makes regulation and policy making in the convergent world extremely challenging, and vulnerable to wrong decision making.

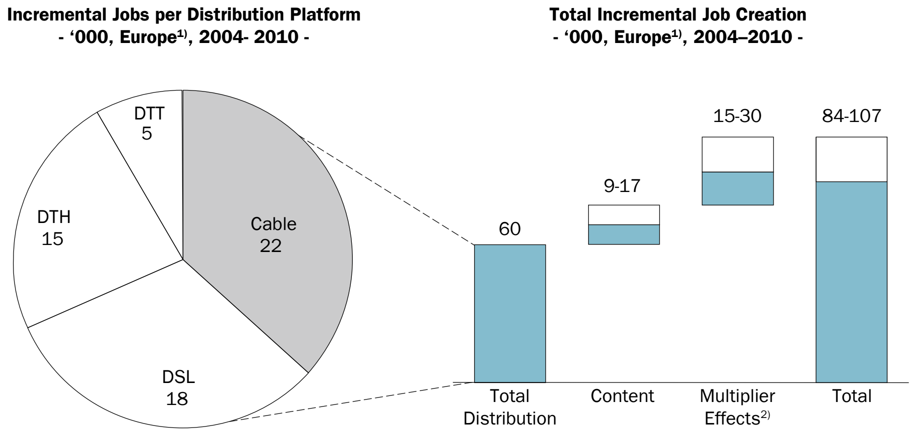
"Digital Dividends" of the Digital Home Market

Booz Allen Hamilton has undertaken extensive research and analyzed the future market development of Digital Homes across Europe applying state-of-the art scenario techniques. The results are encouraging, but also reveal an urgent cause for action. Assuming a favorable economic climate as well as supportive regulative regime, the gains ("Digital Dividends") to be achieved from the development towards the Digital Home are very significant (Exhibit 4 on page 5):

- More than 60 percent of European households can be served by Digital TV services until 2010
- By then Digital TV can be expected to overtake broadband in terms of household penetration—making Digital TV the main enabler of an inclusive digital society
- Cumulative investments of Euro 100 billion would be deployed by the industry to enable the Digital Home environment until 2010
- Close to 100,000 jobs will be generated, with CATV being the strongest job engine (Exhibit 5)
- Local content could expect significant growth, with Euro 35 billion being spent on programming until 2010, driven by DTV proliferation

There is certainly a lot to be gained by enabling this favorable environment, but there are some barriers to be overcome. A lot of different players along the value chain need to align their strategies and business models to ensure that all players will be rewarded according to the economic risk. But our analysis clearly shows that the most important enabler will be a balanced regulative regime ensuring a level playing field for all players willing to invest against this opportunity. Almost two-thirds of the total investment needs to be carried by network operators. These investments are going to trigger significant knock-on effects, for example, in the area of content development and home equipment innovations. Therefore, ensuring fair competition on the infrastructure level rewards special attention. Looking at the broadband development across Europe as well as at the development in more advanced

Exhibit 5: Total Job Creation in the "Digital Head-to-Head" Scenario



(1) Includes: Austria, Belgium, Denmark, Czech Republic, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Netherlands, Poland, Portugal, Romania, Spain, Sweden, Switzerland, and UK
(2) Multiplier effects capture the additional employment with suppliers and other linked activities associated with an expansion of the distribution industry, e.g. network infrastructure or STB
Source: Booz Allen analysis

DTV markets like the United States, a clear lesson can be learned: Only a balanced and infrastructure-based competition will secure a fast and sustainable market development. Countries with significant infrastructure-based competition for broadband connections, for example, from CATV, enjoy faster overall penetration rates and typically give better value to consumers for their money. The same can be expected when the competition for the Digital Home unfolds: Only if more than one competitor will be able to offer comparable triple play offers to the consumer, market dynamics similar to what can be seen in the most advanced broadband markets, such as Belgium or the UK, will be unleashed.

This also implies a significant risk for regulators. If infrastructure investments are not being encouraged and—to a reasonable degree—also protected by the regulative regime, significant delays can be expected. Almost half of the cumulative investment—close to Euro 40 billion—would be delayed or lost altogether in Europe if significant regulative barriers remain in place or additional ones are created. The impact on the job market would be even more severe: 90,000 out of the 100,000 jobs to be generated in the convergent industries could be delayed or lost.

Recommendations for Policy Makers and Regulators

The stakes are high to get it right—both policy makers and industry players need to act decisively. On the basis of our analysis, we see four key themes for regulators to focus their attention on.

1. Refocus attention from broadband to convergence/ Digital TV

   To date policy makers and regulators have by and large focused on broadband to drive their digital economy objectives. Our analysis shows that Digital TV becomes increasingly important and can be expected to overtake broadband penetration by 2010. As Digital TV becomes the main enabler of an inclusive digital society, a more balanced policy perspective on broadband and Digital TV is justified. Policy makers and national governments need to realize the importance of the analogue to digital migration and, hence, should support migration efforts initiated by industry players.

2. Ensure a balanced market structure and competition in a convergent digital world

   To ensure a balanced market structure, policy makers need to reflect the convergence of TV, broadband, and TV markets. The relationship between different horizontal markets (e.g., TV distribution and broadband), including the increasingly stronger inter-dependencies, needs to be taken into account. What seems to be a position of significant market power (SMP) in one market today can be easily dwarfed tomorrow by the entry of a competitor 10 times the size and economic weight. Also, the interplay across the value chain, in particular between infrastructure operators and content providers, needs to be brought (or kept) in balance. Traditionally, near monopolistic market structures in distribution put the platforms into an advantaged position, and they were thus prevented from entering the content market. But it is time to rethink this dependency in the convergence space because distribution will no longer constitute a bottleneck. Today's changing reality paves the way for a new relationship and integration of content and distribution with only extreme cases of unfair blocking of platforms or unfair treatment of own versus other content required to be regulated. Thus, regulatory decisions concerning vertical and horizontal consolidation need to bear these new market realities in mind. Consolidation in the industry will be required in most European countries to enable fair competition. As such, the convergent market poses a particular challenge to regulators because frequently the Digital Home market is regulated by different authorities (e.g., one regulatory body for telecommunications, another one for media) under different policy objectives. However, the convergence of TV, broadband, and telephony will require much closer coordination—if not even a merger—between different regulatory bodies and the definition of new strategic industrial policy objectives supported by a broader set of coherent public policies.

   The shift from analogue to digital TV is a risky challenge for all industry players; any unequal support of technologies and/or platforms may lead to an imbalance in industry structure and a slowdown of overall market development. Hence, policy makers should therefore support rapid consumer migration to the Digital Home regardless of the technology of the distribution platform, for example, through publicity campaigns or clear analogue switch-off dates. As such, support for digital switchover should be technology neutral.

3. Balance consumer protection with long-term investment and employment objectives

   Policy makers face the challenge of balancing short-term consumer interests (e.g., low prices) with midterm objectives concerning economic growth and employment. For the regulator, the need to support this balance drives the need for a coherent regulative framework across services (TV, broadband, telephony), distribution infrastructures (cable, DSL, satellite, terrestrial), as well as along the value chain (content versus distribution). When making decisions on positions of significant market power or on consumer protection, policy makers need to make a trade-off of short-term gains against positive long-term effects on investments, jobs, and industry structure. They need to ensure that short-term remedies (e.g., price regulation, network access) do not prevent investments in long-term growth, which would lead to significant distortion of fair market competition.

4. Rebalance regulation in favor of infrastructure-based competition

   Policy makers should stimulate infrastructure competition rather than focusing too strongly on service-based competition to foster consumer choice because infrastructure-based competition leads to the best results in terms of investments and technological innovation as well as in-country job creation. Increasing service competition on distributors' infrastructure will deter them from making significant upfront infrastructure investments because they may not be able to earn an adequate return on those investments. As infrastructure investment is reduced, so too will be the overall penetration of the Digital Home. Because the Digital Home is far more than just another entertainment fad, the impact of a slow penetration is immense: substantial investments in digital content and new businesses are delayed, small and medium-sized enterprises are deprived of up-to-date communication features, and the digital inclusion is not realized to the extent possible. In addition, regulators need to be aware that service competition on a network may lead to degradation in quality of service both to the service provider's customers and to the infrastructure provider's customers. Opening up networks to third-party service providers may also limit the effective protection of content rights.

Recommendations for the Cable Industry

In turn, industry players need to adapt to the new realities to drive the development of the Digital Home. Today, the cable industry finds itself in a consumer product market in which companies have to cater for diverse and fast-changing consumer needs. And for every one of these products, several credible competitors try to secure their part of the market. To successfully drive the development of the Digital Home, cable operators thus face three key challenges: (1) Making large upfront investments, (2) Capturing the mass market quickly, and (3) Changing revenue streams. To address these challenges and to take a lead in driving the Digital Home, cable operators should act on six strategic imperatives:

1. Understand the Customer: Develop Consumer-Driven End-to-End Entertainment Offers

2. Serve the Entire Digital Home: Offer Compelling Bundles

3. Convince Consumers: Build Marketing and Sales Capabilities

4. Give Consumers What They Want: Proactively Migrate the Customer Base to Digital

5. Size Matters: Build In-Country Scale

6. It's a Team Play: Build New Business Models and Partnerships for Superior Digital Services

Regulators are challenged to secure a level playing field and investment security for all players willing to invest to make the Digital Home a reality. Once this is granted and all players take advantage of this market opportunity, Europe will look at a very exciting decade of moving into the digital age.