

Translation of summary report for ARCEP

Valuation of the digital dividend in
France

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1 Introduction

The French law of 5 March 2007¹ regarding the modernisation of the television broadcasting envisaged the completion of the switch-over to digital television broadcasting (and the switch-off of analogue broadcasting) no later than 30 November 2011.

This digital switch-over (DSO) will allow a large portion of ultra-high frequency (UHF) spectrum to be released for use for other applications and technologies. These UHF frequencies, located in the lower part of the radio spectrum (below 1GHz), allow the use of technologies with unique coverage, penetration and propagation qualities. The benefits accrued from the release and reuse of this spectrum is known as the ‘digital dividend’.

These frequencies will not only improve the quality of existing services, but will also allow the launch of new services. The digital dividend therefore represents a unique opportunity for France to maximise the social, cultural and economic benefits associated with the use of those frequencies.

This raises the question of what is the most efficient use that France can make of the spectrum released by the DSO.

A significant new study carried out by Analysys Consulting Ltd and Hogan & Hartson contributes to answer this question by examining the French parliament’s approach from an international perspective, by learning from the experience of other markets and undertaking an economic valuation of the digital dividend according to its use. More specifically, this study answered the question whether allocating a share of the digital dividend to the electronic communication services is more efficient for the nation than allocating the digital dividend exclusively to broadcasting services. This study also analysed whether sharing the digital-dividend spectrum between the electronic communication services and the audiovisual services penalises existing audiovisual services, or if it represents a mutually beneficial solution for both sectors.

2 Regulatory and comparative analysis of decisions regarding the digital dividend

Article 2 of the law of 5 March 2007 provides for the reuse of the ‘digital-dividend’ frequencies to be planned under a national framework for the reuse of spectrum freed by the DSO. This national scheme must meet five social and economic objectives set out by the French parliament:

- Objective 1: Favour the diversity of service offering
- Objective 2: Improve the coverage of digital services across France
- Objective 3: Improve the equality of access to all electronic communication networks
- Objective 4: Develop the efficiency of the public-service spectral links
- Objective 5: Optimise the management of public-domain spectrum resources.

¹ <http://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000000248397&dateTexte=>

This national framework must also be compliant with an additional quantitative test: the majority of the released spectrum must be reallocated to audiovisual services.

The regulatory and comparative analysis undertaken as part of our study demonstrated that the digital-dividend frequencies could be shared between audiovisual services and electronic communication services and still meet the objectives that have been set by the French parliament.

Furthermore, the stated objectives of improved digital coverage and universal access to all electronic communication networks imply a need to reduce the ‘digital divide’, for instance, by covering the entire country with very high speed wireless broadband access.

These two objectives are also reflected in the recent speech of the French President at the CeBIT, in which he called for 100% of the French population to have fixed and mobile broadband access to the Internet by 2012².

Our regulatory analysis also showed that a degree of sharing of digital-dividend spectrum between audiovisual services and electronic communication services satisfies the quantitative tests set by the French parliament. The 2007 World Radiocommunication Conference identified a sub-band between 790MHz and 862MHz as appropriate for electronic communication services. The study shows that the use of this sub-band for electronic communication services in France would comply with the parliament’s requirement that only a minority of the frequencies can be allocated to non-audiovisual services. However, it should be noted that the bandwidth identified by the 2007 World Radiocommunication Conference (72MHz) is less than half of the spectrum required to meet the electronic communication services’ needs identified by the *Commission Consultative des Radiocommunications* in its report dated 15 October 2007³.

Our international benchmarking of the situation in other European countries (Germany, Italy, the United Kingdom and Sweden), Japan and the USA shows widespread support for a degree of sharing of digital-dividend spectrum. Benchmarked countries are indeed allocating – or planning to allocate – the digital-dividend frequencies to both increase the number of digital terrestrial television (DTT) multiplexes (enabling richer audiovisual services) and to provide electronic communication services⁴ with spectrum in the UHF band ranging from 60MHz to 112MHz.

This international comparison also highlights the opportunities for economic and social development offered by sharing the digital dividend between audiovisual services and electronic communication services. Sweden represents a particularly relevant example for France, in that social and cultural considerations have exercised significant influence over the allocation of digital-dividend spectrum. Moreover, the situation in Sweden has been driven by governmental objectives for coverage and access to governmental services. Japan is also an interesting example insofar as the digital-dividend debate is part of a wider framework to guarantee effective use of the country’s spectrum resources (for both the audiovisual and electronic communication sectors).

² AFP, “Sarkozy veut renforcer les nouvelles technologies en France”, 3 March 2008.

³ http://www.arcep.fr/uploads/tx_gspublication/rapport-ccr-151007.pdf

⁴ Except when local characteristics, not relevant to the situation in France, temporarily preclude this (e.g. in Germany)

As to the digital-dividend schedule that should be adopted in France, the law of 5 March 2007 plans to put in place a “national analogue to digital switch-over framework” as well as a “national framework for reuse of the frequencies freed by the analogue switch-off”.

The study confirms the critical importance of both schemes being consistently defined and co-ordinated. The frequency reuse framework should therefore be finalised as soon as possible, in order to avoid compromising the use of the digital dividend spectrum, which is distributed across the UHF band. There is a clear need for reorganisation during the switch-over to allow services requiring contiguous channels (such as electronic communication services) to use this spectrum. Any subsequent reorganisation would be extremely inefficient and complex to achieve, and would significantly reduce the benefits associated with the digital dividend.

It is therefore vital that a precise timetable for the process of reallocating the digital dividend spectrum is established as soon as possible. France is not the only country that stands to benefit from a digital dividend. Negotiations with neighbouring countries are needed to manage interference issues and to allow for the development of pan-European services. It is also crucial that European industry players are given clear signals as to how spectrum within the UHF band will be released for electronic communication services as soon as possible. Failure to do so could have serious consequences, especially in the light of evolving global competition.

The importance of rapid agreement of the timetable for the reallocation of the frequencies released is also supported by the study’s benchmarking of international experience on this matter.

3 Economic valuation of the use of the digital dividend in France

For this study, the impact of the use of digital dividend spectrum was modelled using two distinct scenarios:

- Allocation of a minority proportion of the digital-dividend spectrum to electronic communication services using the sub-band identified by the 2007 World Radiocommunication Conference (a scenario referred to as ‘sharing the digital dividend’).
- Allocation of all of the digital-dividend spectrum to audiovisual services (a scenario referred to as ‘audiovisual only’).

For the ‘sharing the digital dividend’ scenario, audiovisual offerings are largely enriched and the digital divide is significantly reduced compared to the existing situation. This is achieved through:

- The allocation of 10 multiplexes for DTT, providing coverage of 95% of the population and allowing 40 high-definition (HD) channels under an HD-only approach.
- The creation of 2 multiplexes for the provision of mobile TV services covering 70% of the population (compared to the single multiplex currently planned).
- Coverage of 99% of the population with mobile broadband access at several tens of Mbit/s (services not currently available).

The ‘audiovisual only’ scenario allows:

- The allocation of 12 multiplexes to DTT, providing coverage of 95% of the population and allowing 48 HD channels under an HD-only approach.
- The creation of 2 multiplexes for the provision of mobile TV services covering 70% of the population (compared to the single multiplex currently planned).
- Coverage of 74% of the population with mobile broadband access at several tens of Mbit/s (services not currently available).

Comparing the two scenarios highlights the following points:

- The incremental value of adding two additional DTT multiplexes in the ‘audiovisual only’ scenario is low, as it represents a shift from 40 to 48 HD channels. However, the more channels consumers have access to, the less they value getting new ones. Furthermore, the profitability of these two additional multiplexes is not guaranteed, especially in the context of increasing competition from other broadcasting platforms such as cable TV, satellite TV and IPTV.
- Population coverage for wireless broadband services is significantly decreased (by almost 25%) in the ‘audiovisual only’ scenario compared to the ‘sharing the digital dividend’ scenario. UHF frequencies are indeed essential for providing the last 25% of the population with wireless broadband access.

From a micro-economic perspective, the study demonstrated that allocating a sub-band of the UHF frequencies to electronic communication services adds more value to the economy than allocating this band to audiovisual services only. Indeed, this study illustrates that the ‘sharing the dividend’ scenario increases social welfare by over EUR25 billion between 2012 and 2024 more than the ‘audiovisual only’ scenario.

Moreover, from a macro-economic perspective, sharing the digital dividend between audiovisual services and electronic communication services is estimated to increase gross domestic product (GDP) by EUR7.1 billion compared to the current situation, compared to a EUR2.3 billion increase in GDP under the ‘audiovisual only’ scenario (from 2012 to 2024). This estimate does not take into account the additional positive impact on productivity that can be expected as a consequence of the wider availability of wireless broadband access. As such, it takes a conservative approach to decreases in the prices of the electronic communication services enabled by the greater efficiency of the UHF band.

Our economic analysis also demonstrates that rapid intervention of the public sector is required if the digital dividend is to be used efficiently. Any delay would have only a relatively small impact on audiovisual services (such as DTT), but would have a significant impact on electronic communication services. Furthermore, this impact would increase exponentially as the delay gets longer. For the ‘sharing the digital dividend’ scenario, for instance, a one-year delay causes a loss

of welfare of EUR2.3 billion and a loss of GDP of EUR230 million. A three-year delay causes a loss of welfare of EUR7.4 billion and a loss of GDP of EUR1.2 billion.

Finally, in addition to the quantitative economic analysis of the scenarios, the study analysed ‘externality effects’ of the use of the digital dividend. These include beneficial impacts that are not taken into account by the market but fulfil the parliament’s social objectives. This analysis shows that the externality effects of DTT and mobile TV are relatively similar in both scenarios; however the externality effects of wireless broadband are greater in the ‘sharing the digital dividend’ scenario than in the ‘audiovisual only’ scenario.

4 Conclusion

From a regulatory perspective, the five objectives set by the Parliament for the digital dividend reallocation anticipate an appropriate split of the released spectrum between audiovisual services and electronic communication services. A solution in which no spectrum is allocated to electronic communication services cannot fulfil the objectives set by the parliament.

In particular, targeting the realisation of the greatest economic value for the digital dividend is in line with the fifth objective of the law of 5 March 2007 (optimising the management of public-domain spectrum resources). This objective is better achieved by allocating a share of the digital dividend to electronic communication services than by allocating all spectrum to audiovisual services.

However, we note that the digital dividend cannot be valued solely in terms of its economic value. In conformity with the social objectives of the law of 5 March 2007, the valuation of the digital dividend has to take into account externality effects. Studying these effects demonstrates that a degree of sharing of digital-dividend spectrum between electronic communication services and audiovisual services offers a greater fulfilment of parliament’s objectives than assigning the spectrum entirely to audiovisual services.