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Development of Digital TV in Europe

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1 Digital TV market overview

1.1 Roll-out of digital services

Despite the fact that Luxembourg is the home of some major actors in the audio-visual and multimedia European sector, particularly SOCIÉTÉ EUROPÉENNE DES SATELLITES (SES) and CLT-UFA, the current offer of digital TV services in mid-1999 is, for the Luxembourg viewers, nearly non existent.

The emergence of a digital offer in Luxembourg must cope with a particular context characterised by the high penetration rate of cable and the progressive development of satellite reception.

In Luxembourg, most households have access to television broadcasting via cable. Indeed, Luxembourg is one of the most cabled countries in the world, with a penetration rate of about 90% among private households. This very high penetration rate is considered the historical result of a governmental decision made in the late sixties not to engage in any public intervention and to promote a completely liberalised framework for the developing of CATV in Luxembourg.

However, at the moment, no cable network is proposing digital TV services.

Despite the advanced penetration of cable networks, satellite reception of television programmes appears to have had some success in the last few years. There are nowadays 20 000 households equipped with satellite antennas, meaning a penetration rate around 15%. This high rate can be partly explained by the presence of a significant foreign population, wanting to access services broadcast from their native countries that are not available on cable. As well as for the other European households equipped with a digital decoder, it is obviously possible for Luxembourg viewers to receive digital TV signals via the satellite.

The fact that, unlike the free-to-air broadcasters, the majority of the foreign pay-TV or thematic operators do not have the broadcasting rights for the Luxembourg market, does complicate the commercialization of a digital offer in Luxembourg.

Presently, the development of a digital TV offer specific to the Luxembourg market remains thus limited to the national programmes produced by the CLT-UFA (RTL Télé Lëtzebuerg). These programmes are indeed broadcast by satellite on ASTRA (4 hours per day) and can be received free not only in Luxembourg but also by most of the households residing in other European countries, if they are equipped with a satellite antenna and a MPEG-2 decoder.

1.2 Details of services

As is explained above, there is no digital service either by cable or by satellite. The only digital offer is that of CLT-UFA, limited to a 4 hours per day program.

The uncertainty of the short-term development of a specific digital television offer in Luxembourg is obvious, so this subject is hardly a priority for the authorities. Indeed, there is a proposal to review the Law of 1991 concerning the electronic media, which will be voted on in the year 2000. This proposal is aimed at transposing the Directive "*TV sans frontières*" into national law, but it is not clear today if the transposition will concern, at the same time, the Directive on conditional access.

1.3 Operators and market structure

The legal issues explained above, the market's small size and the richness of the basic cable TV offer are the main reasons for the absence, at the present stage, of any specific digital project.

- ✓ Made up of some 150 000 households, the Luxembourg market's distinguishing feature is its small size, which hinders the development of profitable national-scale digital projects. Moreover, it should be noted that even the analogue TV offer remains little developed and consists mainly of the broadcasting, since 1992, of national programmes produced by CLT-UFA (RTL Télé Lëtzebuerg), and, since 1997, of the formation of local or community production centres set up as non-profit organisations (Uelzechtkanal, Nordliicht).
- ✓ Furthermore, based on the fact that 90% of the country is covered by the cable network, the development of a digital offer specific to the Luxembourg market would mean reaching agreements with the different cable operators. However, the cable sector in Luxembourg is a very fragmented area. Even though the four main cable operators - CODITEL, ELTRONA, SIEMENS, and SOGEL - own and/or operate a series of networks covering more than half of the connected households, we reckon that there are more than 150 local independent networks with few or no common technical specifications, managed by about as many different entities.

  In contrast with the other European countries, no significant transformation of the structure of the cable sector has been observed during recent years. The only important move to consider is the recent transfer of the CLT-UFA shares of ELTRONA which have been taken by over P&T LUXEMBOURG.

The above statement does not mean however that Luxembourg participants are not part of the field of digital television.

- ✓ Firstly, SOCIÉTÉ EUROPÉENNE DES SATELLITES has long since developed a world-renowned activity in satellite transmissions via its fleet of ASTRA satellites. ASTRA is Europe's DTH market leader, serving 75 million European homes via direct to home, communal system and cable networks. In regard to the transmission of TV programmes, SES serves 80% of the European market, which means that it handles the broadcasting of many digital and analogue bouquets such as, for example, CANAL SATELLITE DIGITAL, DF1, PREMIERE DIGITAL, CANAL+, etc.

  A parallel project concerning more specifically interactive services, is that of Astra-Net, a platform for multimedia and data services, launched during the year 1998, directed at businesses and offering fast Internet access, data package delivery and data streaming. The Astra-Net platform allows services and content providers to transmit data via ASTRA directly to high-end servers and PCs in homes and businesses throughout Europe. The company has announced the development of its service towards interactivity : in 1999, SES will be begin operating the Astra Return Channel System allowing interactive applications on Astra-Net. This interactive system would also enable SES to provide its customers with the ability to support such services as interactive digital TV, data broadcasting and multicasting and interactive tele-education.

- ✓ Secondly, it is known that pan-European projects exist, either thematic or pay-per-view services, some of them being developed in Luxembourg. Typically, Aurora Media Services, a subsidiary of Aurora Investments and P&T Luxembourg, is developing a digital bouquet (Select TV) designed to be relayed by cable networks in Luxembourg, Benelux and Germany. According to its promoters, this bouquet, which would comprise some 40 TV channels in its basic offer and 20 more "à la carte", will be launched during the autumn in 1999. This initiative will necessitate an investment of LUF 700 M.

1.4 Future prospects

Although there is no concrete developed project in the Luxembourg market, three possibilities for the development of a digital offer can nevertheless be envisaged:

- ✓ The first scenario could consist of seeing the digital bouquet developed on Belgian territory by CANAL + BELGIQUE in partnership with the Walloon cable operators, relayed by cable operators in Luxembourg. Nevertheless, the realisation of such a project will necessitate overcoming several obstacles:
  - The access to Luxembourg's cable networks will require an agreement between, on the one hand, the numerous affected operators from Luxembourg, and on the other, the two components of the association responsible for French-speaking Belgium, i.e. CANAL + BELGIQUE and the various Walloon cable operators.
  - The extension of the project to the main cable operator from Luxembourg, CODITEL -LUXEMBOURG, involves specific problems. Previous negotiations, between CANAL + BELGIQUE and CODITEL-LUXEMBOURG have already shown the difficulty of completing such collaborative projects. Moreover, CODITEL-LUXEMBOURG is a subsidiary of CODITEL-BELGIUM, which is reluctant to broadcast the digital bouquet developed by CANAL + and the others Walloon cable operators.
  - The signal transmission to Luxembourg would require the setting up of a wire-link between the main antenna site in Belgium and the cable networks in Luxembourg. That infrastructure won't be implemented before the year 2000.
  - Moreover, the services comprised in the offer of CANAL + BELGIQUE and the Walloon operators are exclusively French-speaking services. They could therefore interest only a part of the Luxembourg market.
- ✓ The constitution of an offer specific to Luxembourg is the second possibility envisaged by some operators. This offer would take up services offered in various foreign bouquets broadcast in different languages. However, beyond the organisational and legal problems mentioned above, the realisation of such a project will face a number of economic difficulties. Indeed, the development and managing of a digital bouquet would probably impose important fixed costs hard to cover by such a small market.
- ✓ The reception in Luxembourg, by cable or satellite, of pan-European digital projects constitutes the third possibility. But, even if decoders can circulate freely according to the single market rules, the conditions for marketing pay-TV services across borders are still unclear as long as rights are acquired nationally.

1.5 Conclusion

More than in any other European country, a clear distinction has to be made between demand and supply sides when observing the development of the digital TV market.

On the demand side, customers do not have access to any specific digital offer on the national market. The market's small size and the richness of the basic cable TV offer seem to give very limited prospect of any change in the short term.

On the supply side, Luxembourg is the national platform for a number of pan-European projects. There is of course the long experience of Société Européenne des Satellites (SES) who, with its fleet of ASTRA satellites, handles the broadcasting of many digital and analogue bouquets. But more recently, a project has been developed by Aurora Media Services. This project is particularly innovative as it relates to contents development. It namely aims the design of a digital bouquet intended to be relayed on the Benelux and German cable networks.

2 Key figures for the Luxembourg market

2.1 Country fundamentals

	1993	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*
Population (millions)		0,404	0,408	0,413	0,418	0,424	
Households (millions)		0,151	0,151	0,152	0,153	0,158	
GDP (Euros, in billions)		12,295	13,261	13,501	14,166	14,861	

2.2 Equipment

As of 31 December	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*
TV households (millions)		0,143	0,145	0,147	0,148	0,154	
TV households (% of total households)		94,7%	96,0%	96,7%	96,7%	97,5%	
TV Households with 2 TV sets or more (millions)		0,054	0,063	0,066	0,069	0,073	
TV Households with 2 TV sets or more (% of TV Households)		37,8%	43,4%	44,9%	46,6%	47,4%	
TV Households with 16:9 Television sets (millions)		0,000	0,000	0,000	0,000	0,000	
TV Households with 16:9 Television sets (% of TV Households)		0,0%	0,0%	0,0%	0,0%	0,0%	
VCR Households (millions)		0,081	0,084	0,090	0,095	0,105	
VCR Households (% of TV Households)		56,6%	57,9%	61,2%	64,2%	68,2%	
Digital STB Households (millions)		0,000	0,000	0,000	0,000	0,000	
Digital STB Households (% of TV Households)		0,0%	0,0%	0,0%	0,0%	0,0%	
IDTV Households (millions)		0,000	0,000	0,000	0,000	0,000	
Digital TV Households (% of TV households)		0,0%	0,0%	0,0%	0,0%	0,0%	
Digital Households (millions)		0,000	0,000	0,000	0,000	0,000	
Digital Households (% of TV households)		0,0%	0,0%	0,0%	0,0%	0,0%	

2.3 Access to DTV

Cable

	1993	1994	1995	1996	1997	1998	1999
Home passed (millions)		0,143	0,145	0,147	0,148	0,154	
of which digital (millions)		0,000	0,000	0,000	0,000	0,000	
Home passed (% of TV households)		100,0%	100,0%	100,0%	100,0%	100,0%	
of which digital (% of TV households)		0,0%	0,0%	0,0%	0,0%	0,0%	
Analogue Basic Subscribers (millions)		0,129	0,131	0,132	0,133	0,138	
Digital package subscribers (millions)		0,000	0,000	0,000	0,000	0,000	
Analogue Basic Subscribers (% of TV households)		90,5%	90,3%	90,0%	89,8%	89,5%	
Digital package subscribers (% of TV households)		0,0%	0,0%	0,0%	0,0%	0,0%	

Satellite

	1993	1994	1995	1996	1997	1998	1999
Satellite households (millions)		0,016	0,017	0,018	0,020	0,021	
Satellite households (% of TV households)		11,2%	11,7%	12,2%	13,5%	13,6%	
Satellite subscribers (millions)		0,000	0,000	0,000	0,000	0,000	
Satellite subscribers (% of TV households)		0,0%	0,0%	0,0%	0,0%	0,0%	
of which digital (millions)		0,000	0,000	0,000	0,000	0,000	
of which digital (% of TV households)		0,0%	0,0%	0,0%	0,0%	0,0%	

2.4 Television market estimates*

Euros (Millions)	1993	1994	1995	1996	1997	1998	1999
Analogue TV Market							
Public funding		0,000	0,000	0,000	0,000	0,000	
Advertising		3,000	3,000	6,000	6,500	6,900	
Subscriptions		0,000	1,000	1,000	1,000	1,100	
Total analogue TV		3,000	4,000	7,000	7,500	8,000	
Digital TV Market							
Public funding		0,000	0,000	0,000	0,000	0,000	
Advertising		0,000	0,000	0,000	0,000	0,000	
Subscriptions		0,000	0,000	0,000	0,000	0,000	
Total digital TV		0,000	0,000	0,000	0,000	0,000	
TV Market							
Public funding		0,000	0,000	0,000	0,000	0,000	
Advertising		3,000	3,000	6,000	6,500	6,900	
Subscriptions		0,000	1,000	1,000	1,000	1,100	
Total TV market		3,000	4,000	7,000	7,500	8,000	

** **"Public funding"** comprise grants and licence fees; **"Advertising"** also includes sponsoring expenditures whereas **"Subscriptions"** cover subscriptions to the basic multi-channel package as well as subscriptions to Premium pay-TV services.*