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**Development
of
Digital TV in
Luxembourg
1998 report**

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1. Digital TV market overview

1.1 Access to CATV networks in Luxembourg

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 85% among private households. This very high penetration rate is considered the historical result of a governmental decision made in the late sixties to withdraw from any public intervention and to favour a completely liberalised framework for the developing of CATV in Luxembourg.

Since 1967, over 150 local independent networks, with little or no common technical specifications, have arisen and are, to this day, managed by about as many different entities. Nevertheless, four main cable operators - CODITEL, ELTRONA, SIEMENS, and SOGEL - own and/or operate a series of networks covering 54% of the connected households.

Operators	Market share
Cable Operators	54.0%
26 municipalities	35.0%
53 non-profit organisations	10.7%
2 real estate promoters	0.3%
Total	100.0%

Source: Ministère d'Etat, 1995

Moreover, satellite reception of television programs appears to have had some success in the last few years in Luxembourg: today, there are some 20,000 households equipped with satellite antennas, meaning a penetration rate around 15%. This high rate can be explained by the presence of an important foreign population, wanting to access services broadcast from their native countries and not available on cable.

1.2 Development of a specific television offer

Made up of some 150,000 households, the Luxembourg market's distinguishing feature is its small size, which hinders the development of profitable large scale projects. In that context, marked by a narrow market, the development of a specific free TV offer remains very marginal and consists mainly of the broadcasting, since 1992, of national programmes produced by CLT (RTL télé Lëtzebuerg), and, since 1997, of the formation of local or community production centres set up as non-profit organizations (Uelzechtkanal, Nordlicht).

In Luxembourg, there is no national pay-TV offer either. A foreign pay-TV offer could be introduced via cable networks. However, pay-TV has only achieved limited success, given, on the one hand, the large basic layer of about 30 channels already available on the cable, and on the other hand, the copyright questions. Canal + Belgium (which broadcasts programmes for the French Community) is the only pay-TV operator *officially* present in Luxembourg today. Relayed by Eltrona and Siemens operators, it has from 3 to 4,000 subscribers, that is less than 10% of those operators' subscribers. That number of subscribers which can appear particularly small, still contributes directly to the global financial health of the channel.

1.3 Scenarios for the development of digital TV in Luxembourg

The development of a digital T.V. offer specific to the Luxembourg market, seems very unlikely. In fact, today, there is no concrete developed project on this market. 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 development project.

Three possibilities for the development of a digital offer can still be envisaged:

- ✓ The first scenario could consist of seeing the digital bouquet developed on Belgian territory by Canal+ Belgium in partnership with the Walloon cable operators, relayed by cable operators from Luxembourg. This type of project could then extend the existing broadcasting agreements between Canal+ Belgium and the operators from Luxembourg already broadcasting this analogue channel.

Nevertheless, the realization of such a project will necessitate the lifting of 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+ Belgium and the various Walloon cable operators.
- The extension of the project to the main cable operator from Luxembourg, Coditel - Luxembourg, contains specific problems. Previous negotiations, between Canal+ Belgium and Coditel-Luxembourg have already shown the difficulty of completing such projects of collaboration. Moreover, Coditel-Luxembourg is a subsidiary of Coditel-Belgium which is reluctant to broadcast the Canal+ Belgium digital bouquet.
- 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 from Luxembourg. That infrastructure is not available today.

- ✓ The formation of an offer specific to Luxembourg is the second possibility envisaged by some operators. This offer would take up services offered on various foreign bouquets. A project of that nature, however, carries its own difficulties:
 - The structure itself of the Luxembourg cable market is not very favourable to the development of a “national” project to the extent that the scattering of the actors makes any initiative for the entire country, highly complex. As a reminder, more than 150 operators work on the territory of Luxembourg and even a city like Luxembourg is serviced by five different operators.
 - The broadcasting of a specific digital bouquet – using channels originated in other EU countries - would require a solution to the copyright issue which has already partially caused, for example, carriage of Canal+ France’s analogue service to be stopped.
 - The managing of this digital bouquet would probably impose important technical investments, hard to recoup on such a small market, what supports the idea that the broadcasting of a foreign bouquet in Luxembourg would be more rational.

- ✓ The extension of the direct satellite reception of foreign digital bouquets is a third possibility. But, 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 have only been acquired for the country originating the service. A foreign digital bouquet could therefore only be marketed on a wide-scale when the problems of the copyrights had been cleared up, that is to say once the foreign operator had bought the rights - which are marketed by territory and not by language.

The above statement does not mean that Luxembourg’s actors are not part of the field of digital Television .

In fact, long ago, the Société Européenne des Satellites (European Satellite Company) developed a world renowned activity in satellite transmissions via its fleet of ASTRA satellites. In respect to the transmission of T.V. programs, SES owns 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. .

Among the initiatives taken in Luxembourg, there is the project , announced in the spring of 98 by the American company TV/COM, wholly owned subsidiary of Hyundai Electronics America-HEA. This project, named AURORA, means to found a digital bouquet of European scope under the banner of Access Media Group Luxembourg, a company of Luxembourg law. This project has not yet been materialized.

However, in either case, it is clear that while those initiatives are established in Luxembourg, they are not aimed at the Luxembourg market.

1.4 Public policies

The unlikeliness of the short term development of a specific digital television offer in Luxembourg is obvious so that this file is hardly a priority for the authorities. One should not therefore be surprised to learn that there is no scheduled deadline for the transposition of the “conditional access” directive .

2. Key figures for the Luxembourg's market

2.1 Country fundamentals

	1993	1994	1995	1996	1997	1998	1999
Population (millions)	0,398	0,404	0,408	0,413	0,418		
Households (millions)	0,145	0,151	0,151	0,152	0,153		
GDP (in ECU billions)	10 977	12 295	13 261	13 501	14 166		

Source : OECD

2.2 Equipment

<i>As of 31 of December</i>	1993	1994	1995	1996	1997	1998	1999
TV households (millions)	0,141	0,143	0,150	0,147	0,148		
<i>TV households (% of TV households)</i>	97,2	94,7	99,3	96,7	96,7		
TV Households with 2 TV sets or more (millions)	0,051	0,054	0,063	0,066	0,069		
<i>TV Households with 2 TV sets or mor (% of TV Households)</i>	36	38	42	45	47		
<i>TV Households with 16:9 TV sets (millions)</i>	NA	NA	NA	NA	NA		
<i>TV Households with 16:9 TV sets (% of TV Households)</i>							
VCR Households (millions)	0,077	0,081	0,084	0,084	0,085		
<i>VCR Households (% of TV Households)</i>	54,6	56,6	56	57,1	57,4		
Digital STB Households (millions)	0	0	0	0	0		
<i>Digital STB Households (% of TV Households)</i>							
Digital TV Households (millions)	0	0	0	0	0		
<i>Digital TV Households (% of TV households)</i>							
Digital Households (millions)	0	0	0	0	0		
<i>Digital Households (% of TV households)</i>							

Source : E.A.O./L.E.N.T.I.C. estimation

2.3 Television market estimates*

<i>Millions ECUs</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>	<i>1998</i>	<i>1999</i>
Analogue TV Market							
Public funding	0	0	0	0	0		
Advertising	3	3	3	6	na		
Subscriptions	na	na	1	1	1		
Total analogue TV	3	3	3	6	1		
Digital TV Market							
Public funding	0	0	0	0	0		
Advertising	0	0	0	0	0		
Subscriptions	0	0	0	0	0		
Total digital TV	0	0	0	0	0		
TV Market							
Public funding	0	0	0	0	0		
Advertising	3	3	3	6	na		
Subscriptions					1		
Total TV market.	3	3	3	6	1		

Source : E.A.O./Trends/L.E.N.T.I.C. estimation

* "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.

2.4 Distribution mechanisms

Cable

	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>	<i>1998</i>	<i>1999</i>
Home passed (millions)	0,141	0,143	0,145	0,147	0,148		
<i>of which digital (millions)</i>	0	0	0	0	0		
Home passed (% of TV households)	100	100	96,7	100	100		
<i>of which digital (% of TV households)</i>	0	0	0	0	0		
Analogue Basic Subscribers (millions)	0,108	0,115	0,114	0,114	0,115		
Analogue Optional services subscribers (millions)	n.a.	n.a.	n.a.	n.a.	0,004		
Digital package subscribers (millions)	0	0	0	0	0		
<i>Analogue Basic Subscribers (% of TV households)</i>	78,7	82,5	78,7	81	80,4		
Analogue Optional services subscribers (% of TV households)	NA	NA	NA	NA	2,7		
<i>Digital package subscribers (% of TV households)</i>	0	0	0	0	0		

Source : E.A.O./L.E.N.T.I.C. estimation

Satellite

	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>	<i>1998</i>	<i>1999</i>
Satellite households (millions)	n.a.	0.016	0.017	0.018	0.02		
<i>Satellite households (% of TV households)</i>					13,5		
Satellite subscribers (millions)	0	0	0	0	0		
<i>Satellite subscribers (% of TV households)</i>							
<i>of which digital (millions)</i>	0	0	0	0	0		
<i>of which digital (% of TV households)</i>							

Source : L.E.N.T.I.C. estimation

3. Presentation of the major digital services

- There are no such services in Luxembourg -