Luxembourg

1.1 Statistics and Trends

Figure 1 shows our key broadband indicators for Luxembourg.

Figure 1: Key indicators (2004 unless otherwise stated)

Population	451,600 (2004)	Main telephony lines	360,050 (2003)
GDP per capita	EUR48,700 (2001)	Mobile subscribers	539,000 (2003)
Households	45%A	Internet subscribers	107,601 (2003)
PC households	N/A	Internet households	59%
Digital TV subscribers	N/A	Satellite TV subscribers	N/A
Cable TV subscribers	N/A	Broadband subscribers	25,334
DSL penetration	3.82%	Cable modem penetration	N/A
DSL coverage	92%	Fibre LAN penetration	N/A
BFWA licences	N/A	Cable modems	4050
Typical broadband tariff (consumer/512k/flat rate)	EUR70	WLAN hotspots	N/A
DSL lines	23062	LLU MDFs	N/A
Full unbundling monthly charge	N/A	Wholesale DSL lines	N/A

(Sources: Eurostat, ITU, Point Topic, Ovum, Forfas)

N/A – No data available

Other statistics

- Total employment rate: 61.6%

Additional statistics for Luxembourg

- Persons using a computer: 68%
- Persons purchasing online: 41%
- Companies connected to the Internet: 88% (estimated by Statec)
- Companies selling online (2002): 11%
- Average monthly gross industrial manufacturing wage (Oct 2003): EUR4089.

- Financial services: share in total value added to the Luxembourg economy in 2002: 24.9%.

In June 2002, 62% of the Luxembourg population claimed to use the Internet, with 26% of the population either regularly or occasionally buying goods or services online[1].

1.2 Key operators

Telecommunications represented 3% of the added value to the Luxembourg economy in 2001. Telecommunications, along with the postal services, has been liberalised since 1992.

The main operators are the incumbent Post and Telecommunications company (P&T and its mobile brand LUXGSM) and Societe Europeenne de Communication S.A. (especially its mobile brand Tango). In 2001, P&T had 2,750 employees. SA had 290 employees.

P&T controls 85% of the market for local and national calls and 75% of the market for international calls.

Mobile had a penetration of 98% in 2004, which lead to the strange situation where there were more active subscribers than actual population in the country. This is because up to 100,000 transfrontier workers commute from neighbouring countries. However, the anomaly has led to calls for operators to tighten the criteria by which they count national subscribers. Mobile accounts for over 61% of the total value of the telecommunications sector.

LUXGSM has a 49% share of the market. Tango's share is 36%. A third provider has a 15% share[2].

Figure 2: Installations and telephone calls (P&T)

	1970	**1975**	**1985**	**1990**	**1995**	**2001**
Number of lines	81 645	131 660	151 525	183 700	230 512	346 763
Number of calls (minutes billed)	51686					

[1] Luxembourg in Figures, Statec 2004; Economic and social portrait of Luxembourg, Statec 2002

[2] Statec, http://www.portrait.public.lu/en/index.html, viewed 30 March 2005; European electronic communications regulation and markets, 2004, 10th report.

	1970	1975	1985	1990	1995	2001
National calls (thousands)	...	34 000	...	...	1 302 125	1 700 407
International calls	...					
Outgoing (thousands)	14 840	51 688	80 865	150 619	232 198	332 980
Incoming (thousands)	13 300	34 000	52 000	89 000	178 000	287 299
Mobile phone subscribers	...	...	...	578	26 838	246 482

Source: P&T , Statec, http://www.portrait.public.lu/en/index.html, viewed 30 March 2005

...Not available

In 2002, three operators were granted licences to operate 3G mobile services: Tango, Orange and P&T. Tango and P&T are also Internet service providers[3].

The deployment of 3G has been affected by legal objections to the erection of masts and antennae, some resulting in court cases. In 2004, one operator launched a 3G service, with 80% demographic coverage. However, in the same year, another operator returned its licence and left the market[4].

Coditel, Eltrona Interdiffusion, and Siemens offer cable modem broadband connections, but non-DSL connections account for less than 13% of the access market.

No effective bitstream is available in Luxembourg. Local loop unbundling is low because of high prices and weak regulation[5].

[3] Statec, http://www.portrait.public.lu/en/index.html, viewed 30 March 2005

[4] European electronic communications regulation and markets, 2004, 10th report.

[5] European electronic communications regulation and markets, 2004, 10th report.

2. Broadband Access and use

2.1 Broadband connections

Penetration

Broadband penetration in Luxembourg stood at about 4.5% in 2004, with the incumbent P&T holding about 80% of the access market. DSL dominates the market. Its coverage stands at 92% and about 87% of all broadband connections are via DSL. There is a low level of new entrants offering services over unbundled lines or shared access. Local loop unbundling prices remain high.

SME take-up of broadband stands at 37%.

Broadband access prices

Broadband access prices remain high. The following were the monthly tariffs for DSL and leased lines in the third quarter of 2004[6]:

- Entry level services: 0.25-0.5m/bits: EUR57
- Basic broadband services: 0.5m/bits: EUR70
- Advanced broadband services: 2m/bits: EUR183
- Advanced broadband services: 34m/bits (2km lines): EUR3,325

The Government has set 2005 as its target for providing affordable access to all public administrations and 95% of the population[7].

2.2 Regulation and competition issues

The telecommunications sector was liberalised in 1992. Regulation is shared between the Ministry of Communications and the Institute Luxembourgeois (ILR). The Ministry of Communications has the following powers: awarding licences, designating operators with significant market power, adopting a frequency allocation plan, assigning frequencies and supervising their use. In addition, it has powers in relation to universal service. The ILR can propose to the Ministry of Communications that a licence be awarded or an operator be designated with significant market power. It also takes care of all other regulatory duties. For example, the ILR organised the public tender for 3G licences, and framed procedures for the assignment of licences.

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[6] Broadband Benchmarking Study, Forfas, 2004

[7] Connecting Europe at High Speed: National Broadband Strategies – Annexes, European Commission 2004

P&T has been designated as having significant market power in the fixed wired market. P&T dominates the DSL market and is also significantly involved in cable modem[8].

The ILR has had staffing problems. Staffing levels have not increased despite added responsibilities, including market analysis. In many cases, the labour market in Luxembourg does not offer the necessary economic, legal and technical expertise. This has led to a situation surrounding frequency management. Employment within the ILR has been designated as being of national importance, and therefore open only to nationals. Filling positions with appropriate candidates has proved problematic.

The ILR has issued a public call for tenders to offer expertise in market analysis. Part of the contract is for training and technology transfer, and legal and economic development, so that the ILR can build the expertise in-house to conduct full market analysis itself.

The ILR has often been reluctant to intervene on regulatory issues, even when invited by an operator to intervene over an interconnection dispute[9].

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[8] EC, "8th report on the implementation of the telecommunications regulatory package", 2002

[9] European electronic communications regulation and markets, 2004, 10th report.

3. Applications and services

3.1 eBusiness and SEEM

Luxembourg has a relatively low level of unemployment, about 3.6%. The female employment rate is over 50%.

Financial services (interbank business, private banking, OPC administration and FPS insurance) is the dominant sector in the economy. In 2001, the financial sector accounted for 24.9% of value added to the economy and 11.9% (about 33,000 people) of total employment. The financial sector began to recover from a downturn turn towards the end of 2003. No statistics were found for the importance of online banking within Luxembourg, or in its financial relationships with other countries.

The service sector as a whole accounts for about three quarters of total employment.

IT activities – including software, data processing, database activities, and consulting in information technology – accounted for 1.3% of total value added to the economy in 2001. The sector employed 4,800 people.

Legislation to create a framework for electronic signatures was passed in September 2000[10].

3.3 eGovernment

The Government established the National Committee for the Information Society in 2002 to co-ordinate egovernment activities among public authorities. Also established around this time was the eLuxembourg project, with the aim of facilitating greater electronic interaction between the citizenry and the public administration. One of the eLuxembourg initiatives was to elaborate a 'charter of normalisation' to give a consistent design and quality to public websites, and to create an overall framework for the State on the web. An information website on government services is available at www.gouvernement.lu/. Among the egovernment proposals are to promote security and trust.

The Ministry for Public Service and Administrative Reform heads a project to increase ICT usage within the public sector. However, each Ministry retains responsibility for its own egovernment projects.

A 2002 survey of the eLuxembourg project concluded that it was more focused on delivering egovernment services to business than to citizens, and policy documents did not make provisions for citizen inclusion in the design of egovernment services[11].

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[10] Statec, http://www.portrait.public.lu/en/index.html

A legal portal is available at www.legilux.lu.

Public administrations are connected to the national network, RACINE (symmetric connections with a minimum of 256 k/bps).

A 2004 report by Capgemini found that Luxembourg had a relatively unsophisticated offering of online services. It suggested the following reason: “The position of Luxembourg may be explained by the very size of the population. Administrative process are not necessarily much simpler, but the investment cost does not decrease proportionally to the size of population, and hence, the transaction cost is higher.”[12]

[11] www.euser-eu.org

[12] Capgemini, “Online availability of public services: how is Europe progressing?”, 2004

4. Socio-economic issues

4.1 Digital Content development

Supply-side trends and factors

The audio-visual media sector was liberalised in the mid-1980s. The incumbent broadcaster, CLT (now RTL), expanded its activities to Belgium, Germany and France, among other countries. RTL maintains a website, www.rtl.lu, with content mainly of text and images to promote its television and radio programming. However, it also offers live radio and television streams, requiring Microsoft MediaPlayer.

The website of the main telecommunications operator, P&T (http://www.pt.lu/), offers its broadband customers live streaming of radio and television stations. These are mainly entertainment or media based. For example, the television content available for streaming comes from MTV, EuroSport and EuroNews.

Mobile TV: operator Tango has begun offering mobile TV to 3G phones. The channel is called Tango TV.

Public digital content

The National Audio-Visual centre is compiling an electronic film archive that will be made available for download.

The National Library of Luxembourg is digitising documents for online access.

www.bibnet.lu/ is an online catalogue of 20 public libraries. It has an online reservation facility.

A state sponsored cultural portal is in development.

Education: The Ministry of Education has developed an online e-Learning portal for students and teachers.

Secondary schools have broadband connection via the RESTENA backbone. Teachers can receive free broadband access across RESTENA. Local communes have the responsibility for providing access to primary schools. Many primary schools continue to have ISDN access. Work is ongoing to upgrade connections to broadband. The E-ducnet project aims to provide broadband access to educational and research institutions.

Health: Healthnet provides broadband connection to all hospitals and allows secure transfer of medical information[13].

4.2 Sustainability and the Digital Divide

Material/economic factors

Luxembourg has low rates of unemployment and relatively high levels of disposable income. Figure 3 highlights that Luxembourg maintains a high level of its younger population in education.

Figure 3: Schooling rates

Schooling rates in Luxembourg in the 15-19 year-old and 20-24 year-old age brackets in 2001 (in %)

Age bracket	Total	Nationals	Foreigners
15-19 year	82.1	85.2	77.0
20-24 year	35.0	42.5	24.6

Source: STATEC, http://www.portrait.public.lu/en/index.html

In February 2001, the Ministry of Communications announced the e-Luxembourg initiative. This included a range of measures to provide internet training for all citizens, to provide ICT training for education, and as far as possible to make public information and content available online. The initiative also included provisions to increase the number of internet terminals in public places. One of the initiative's pilot projects was to provide all students in selected schools with laptops[14].

Geographic

In 2004, between 6 and 8% of households in Luxembourg could not, in theory, access broadband. The government is exploring the potential of satellite and wireless to overcome this deficiency, and is examining the possibility of using structural funds[15].

[13] European Commission, "Connecting Europe at High Speed: National Broadband Strategies – Annexes", 2004

[14] www.ebusinessforum.com

[15] European Commission, "Connecting Europe at High Speed: National Broadband Strategies – Annexes", 2004

Sustainability

The government has developed a National Action plan for Sustainable Development (NPSD). The role of ICT and broadband communications do not feature prominently within the NPSD. However, one of the projects under the plan involves a website, http://www.mobiliteit.lu/. The website, maintained by the Ministry of Transport, promotes increased use of public transport and decreased use of private transport, to reduce the negative environmental impacts of road transport. The website monitors the ratio of public transport journeys to private journeys. Public transport accounted for about 12% of journeys in 2002. The aim of the project is to raise the ratio to 25% by 2020[16].

[16] Statec, http://www.portrait.public.lu/en/index.html

5. Reference websites

Government website: www.gouvernement.lu/.

Information website: www.luxembourg.lu

RTL, main broadcaster: www.rtl.lu,

P&T, main telecommunications operator: http://www.pt.lu/

Legal portal: www.legilux.lu.

Online catalogue of library material: www.bibnet.lu/

Statec, statistics office: http://www.statec.public.lu/

Portal of eLuxembourg projects and information: http://www.eluxembourg.lu/

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