Luxembourg a bastion of state ownership

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The context and Luxembourg

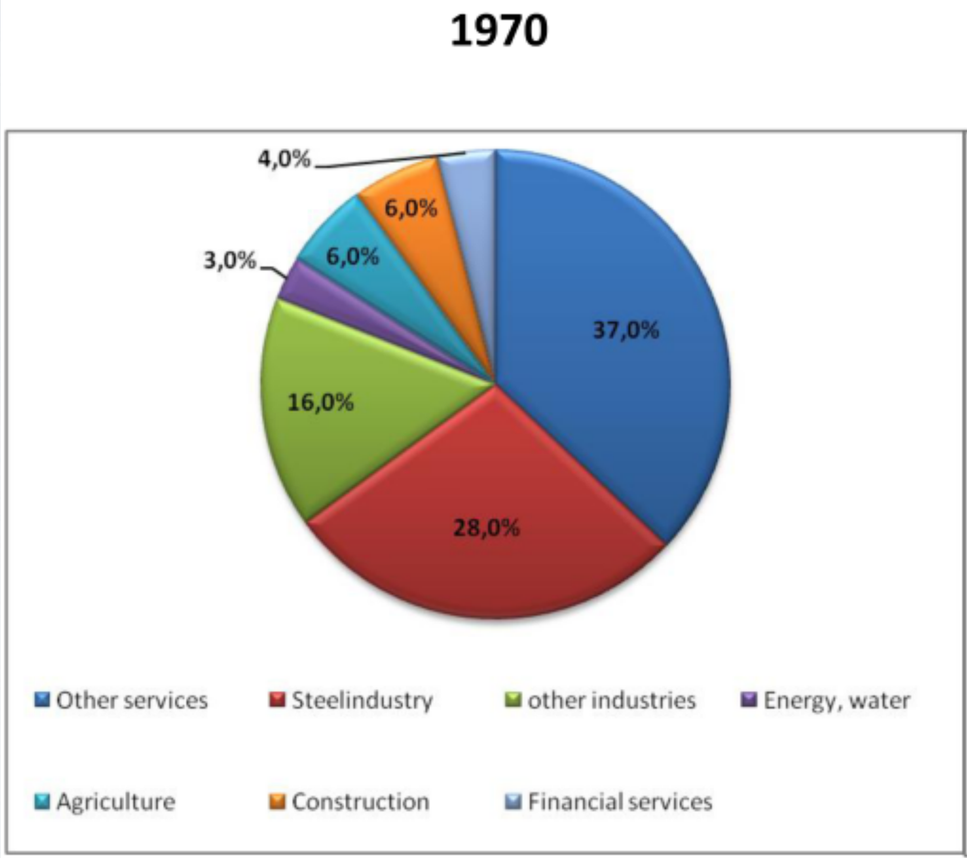
The presenter

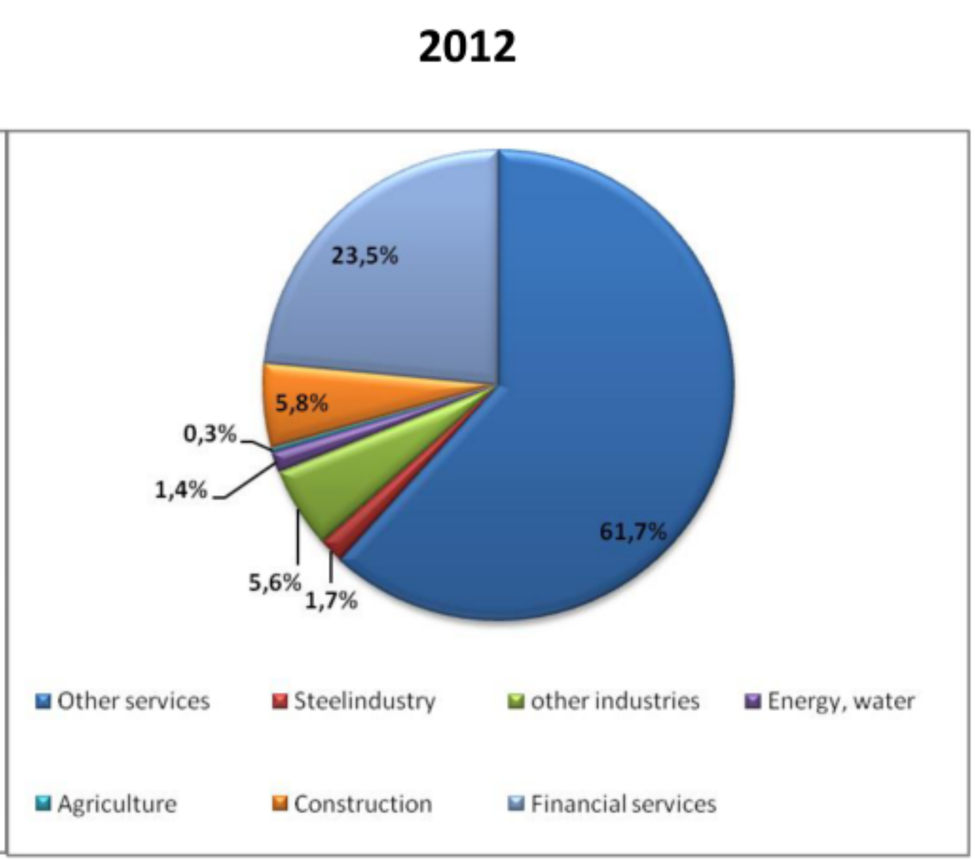
- 25 years of experience in media and telecommunications, part-time, distance DBA
- Chief Executive Officer of Post Telecom PSF SA
- ICT Integrator, 100% owned by local incumbent Telco operator
- 25 Mio € turnover in 2012, 130 members of staff

Luxembourg

- land area of 2,586 km2
- population of 524,900
- GDP per capita 2011 of 90400 USD
- Over 140 banks
- Many European Institutions

An economy largely based on (financial) services….





…. and dependent on a foreign workforce

ICTs are well developed and widely used

Table 1: Households with PC and Internet access (%)

Year	2005	2006	2007	2008	2009	2010	2011	2012
Households with PC	75	77	80	83	88	90	92	92
Households with Internet access	65	70	75	80	87	90	91	93
Broadband (DSL, fibre, CATV)	52	63	77	76	82[1]	78	75	73
Analogue/ISDN dial-up	51	36	26	24	20	30	27	22
DSL line	49	59	76	74	79	70	63	61

Note

1. The regulator adopted its approach to counting CATV customers to 'active users only'. This change explains the decrease in the penetration of broadband access.

Source: Statec, ILR

Table 2 - Size of the ICT Ecosystem - main indicators

Main indicators	2001[40]	2008	2009	2010	2011	2012	2013
Companies	1797	1517	1594	1680	1750	1825	1920
Employment	11308	13626	13651	14269	14760	15200	16000
Share of total employment		3,9%	3,8%	3,5%	3,7%	4,0%	4,2%
Turnover (in million Euro)	5785	6537	6745	8771	N/A	9500	N/A
Added value (in million Euro)	1846	2264	2196	2600	N/A	2840	N/A
Added value (% of GDP)		6,87%	N/A	7,3%	N/A	6,6%[41]	N/A

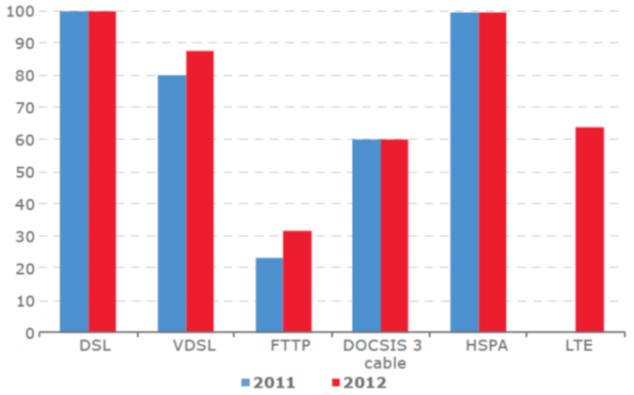
Sources: Eurostat, EU, Statec, authors' calculations, paperjam

State of the Art - Infrastructures and Datacentres

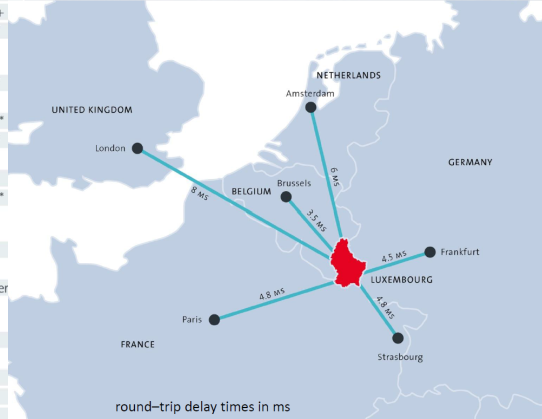
LUXEMBOURG DATA CENTRES: OPERATIONAL 2013

Nr	Datacentre name	Net floor space m²	Net floor space ft²	Tier Rating
1	BCE (Broadcasting Center Europe)	1,000	10,764	Tier III
2	BT	800	8,611	Tier III
3	CEGECOM - Artelis	200	2,153	Tier II+
4	CETREL	410	4,413	Tier III
5	ebrc Resilience Centre Luxembourg City 1	500	5,382	Tier II+
6	ebrc Resilience Centre Luxembourg City 2	1,000	10,764	Tier III +
7	ebrc Resilience Centre Luxembourg West	5,000	53,820	Tier IV*
	colocated: Datacenter Luxembourg, IRIS, Netcore, Steria PSF Luxembourg, Visual Online			
8	ebrc Resilience Centre Luxembourg South	5,000	53,820	Tier IV*
	colocated: Tech-IT PSF			
9	ebrc European Reliance Centre East	5,000	53,820	Tier IV**
10	EDH (European Data Hub)	5,511	59,320	Tier IV*
	run by: CSC			
11	LAB DataVault PSF	2,100	22,604	Tier III
12	LuxConnect DC 1.1	3,000	32,291	Tier IV**
	colocated: Cegecom-Artelis, Conostix, DATA4 Luxembourg, IBM, Orange Business Services, Solido, Systemat, Telecom Luxembourg Private Operator, Telindus Telecom			
13	LuxConnect DC 1.2	1,300	13,993	Tier IV
	colocated: DATA4 Luxembourg, Solido, Telecom Luxembourg Private Operator			
14	LuxConnect DC 2	4,750	51,128	Multi Tier
	colocated: Datacenter Luxembourg , IBM, Root, Systemat, Tech-IT PSF, Telecom Luxembourg Private Operator, Telindus Telecom			
15	DATA4 Luxembourg (formerly known as SecureIT)	750	8,073	Tier III
	colocated: Datacenter Luxembourg			
16	SES	500	5,382	Tier II
17	Sungard	1,000	10,764	Tier II
18	Verizon	2,390	25,726	Tier III
19	Visual Online	300	3,229	Tier II
	NET FLOOR SPACE LUXEMBOURG 2013	**40,511**	**436,057**	

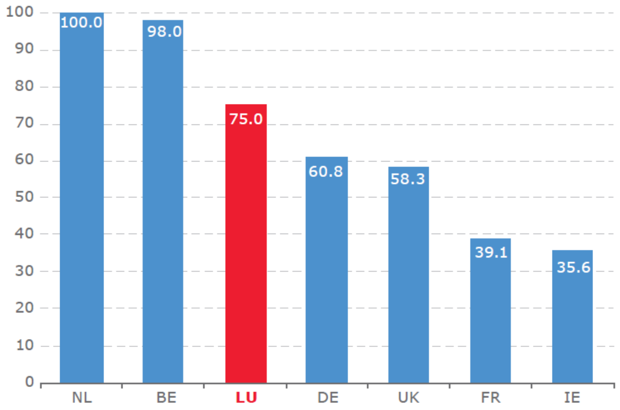
Luxembourg: coverage by technology
(percentage of households covered)



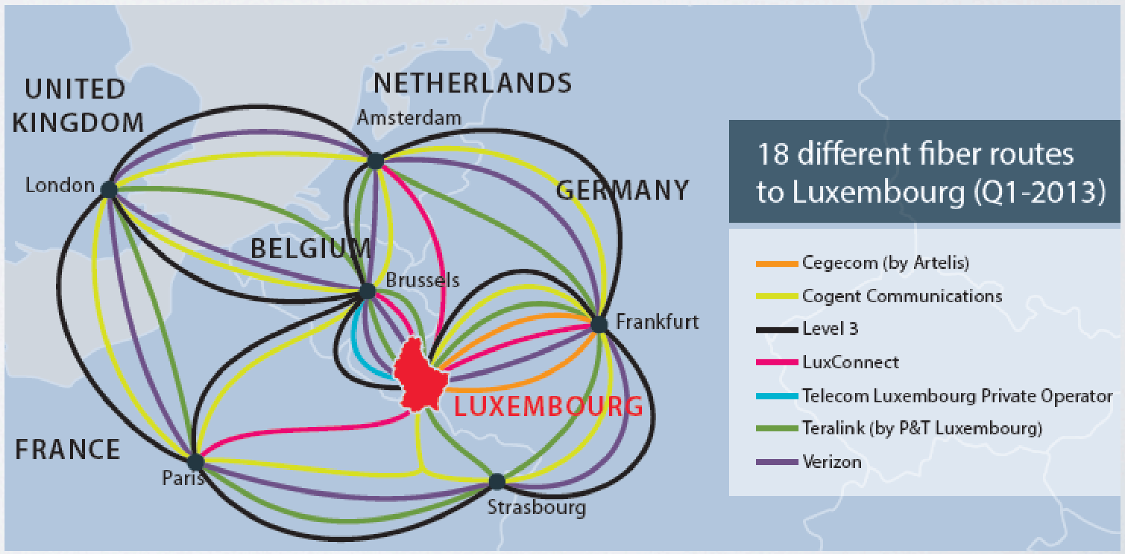
Source: ILR.



Total Next Generation Access (NGA) coverage (minimum: 30 Mbps), 2011
(percentage of households covered)



Source: European Commission, DG INFSO, Report: Broadband coverage in Europe in 2011.



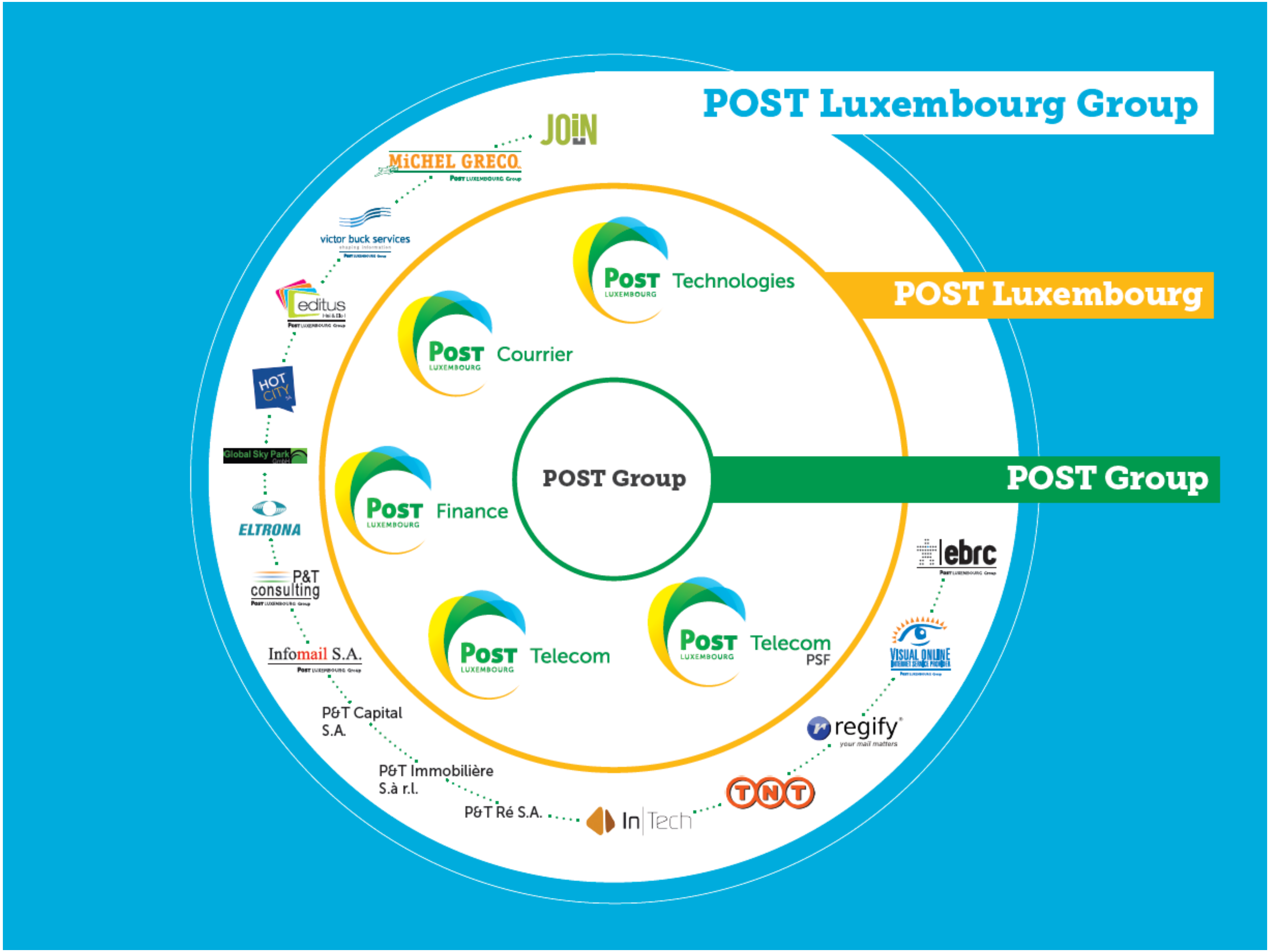
The incumbent – Post Luxembourg (EPT)

- POST Luxembourg was founded in 1842 as a public service and has been a wholly state-owned company since 1992.

- Provider of postal, financial and telecommunications services with a total services turnover of 726,80 Mio € in the financial year 2013. It is the country's 3rd largest employer, with nearly 4,000 staff working for the company and its subsidiaries.

- Offers fixed and mobile to internet and television, as well as many specially designed services for businesses (e.g. M2M) and broadband connectivity solutions in Luxembourg and abroad, including Satellite up- and downlink services. Its TERALINK broadband network connects several European cities.

- Cloud and ICT services comprise IaaS, SaaS and PaaS (Infrastructure, Software, Platform as a Service) Services for the business market; same infrastructures are reused for internal platforms. Data centre hosting and services are offered by its subsidiary EBRC



POST Luxembourg Group
POST Luxembourg
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POST Technologies
POST Courrier
POST Finance
POST Telecom
POST Telecom PSF
JOIN
MICHEL GRECO
victor buck services
editus
HOT CITY
Global Sky Park
ELTRONA
P&T consulting
Infomail S.A.
P&T Capital S.A.
P&T Immobilière S.à r.l.
P&T Ré S.A.
InTech
TNT
regify
your mail matters
VISUAL ONLINE
ebrc

Government initiatives to develop the market…

- E-Luxembourg – first attempt to develop ICT amongst general public and administrations in 2001
- E-commerce – first country in Europe to exploit specific EU rules on e-commerce, attracted e.g. Itunes, Ebay, Paypal, Amazon and others
- Law on intellectual property and support for R&D
- E-Archiving – legal framework still under discussion
- Cloud legislation – protects Cloud customer and guarantees access to data in case of default of
- Broadband Strategy – aggressive roll-out plan financed by revenues from the incumbent
- Support of CATV operators (interconnection, broadband access)
- Agency to develop financial and ICT sector (Luxembourg for ICT)

…and Luxconnect !

The Government decided in 2005 to set up a second 100% state owned operator. This new company would:

- Build a national dark fibre network. This would be made available to telecommunications operators so that they can build and enhance their own footprint in Luxembourg.

- Operate a network that connects Luxembourg to the Internet exchanges in Amsterdam, Brussels, Frankfurt and Paris. Distances would be minimised while route and fibre diversity maximised (is about to sold in 2014)

- Support the national ICT, media and e-business sectors by providing carrier neutral, state-of-the-art data centre facilities.

The project was allocated an initial budget of €30 million. By the end of 2012, LuxConnect employed 23 staff, had capital of €75 million and had invested over €92 million developing its business.

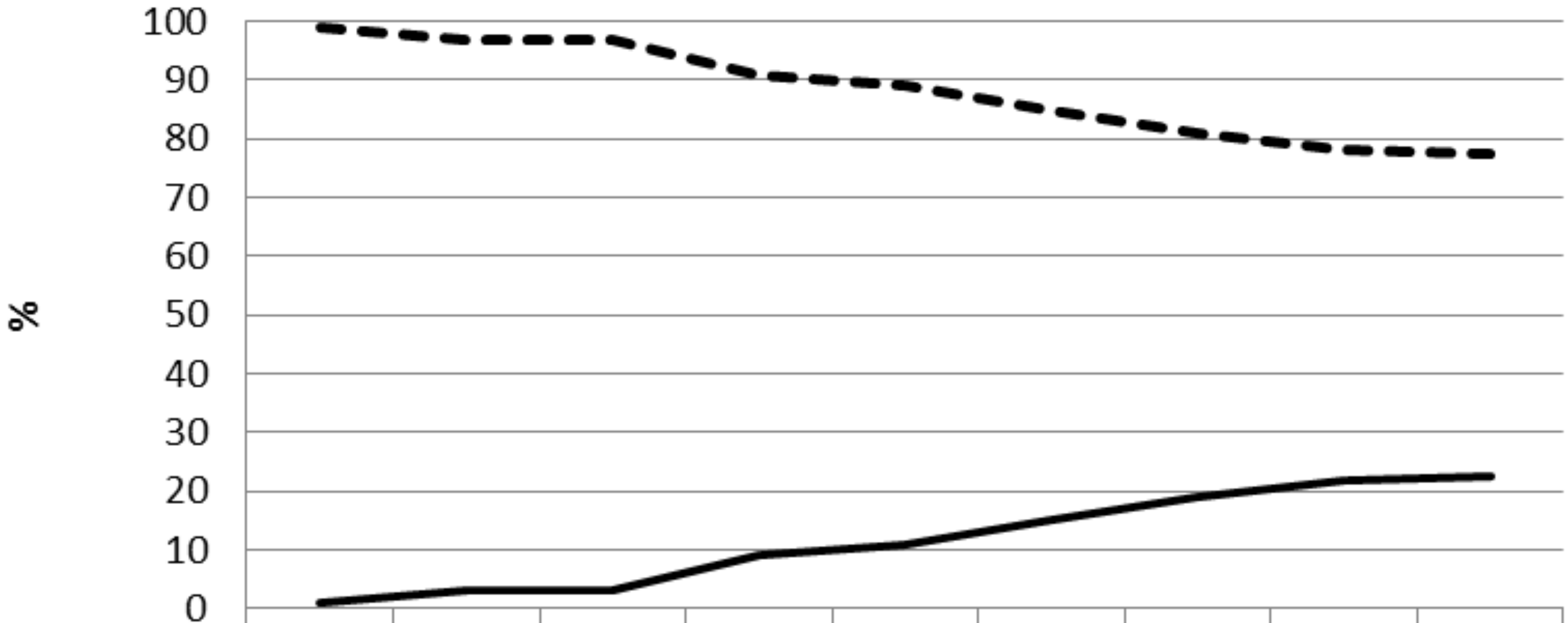
The national ultra-high broadband plan

	EU targets	Luxembourg government targets:
Since 2013	Basic broadband for all	➔ 1 Gbps download and 500 Mbps upload (min 25 % coverage) ➔ 100 Mbps download and 50 Mbps upload (min 80 % coverage)
End of 2020	High-speed broadband with at least 30 Mbps download	1 Gbps download and 500 Mbps upload (100 % coverage)

The incumbent as been instructed by the government to build the underlying FTTH networks and has been granted the necessary financing

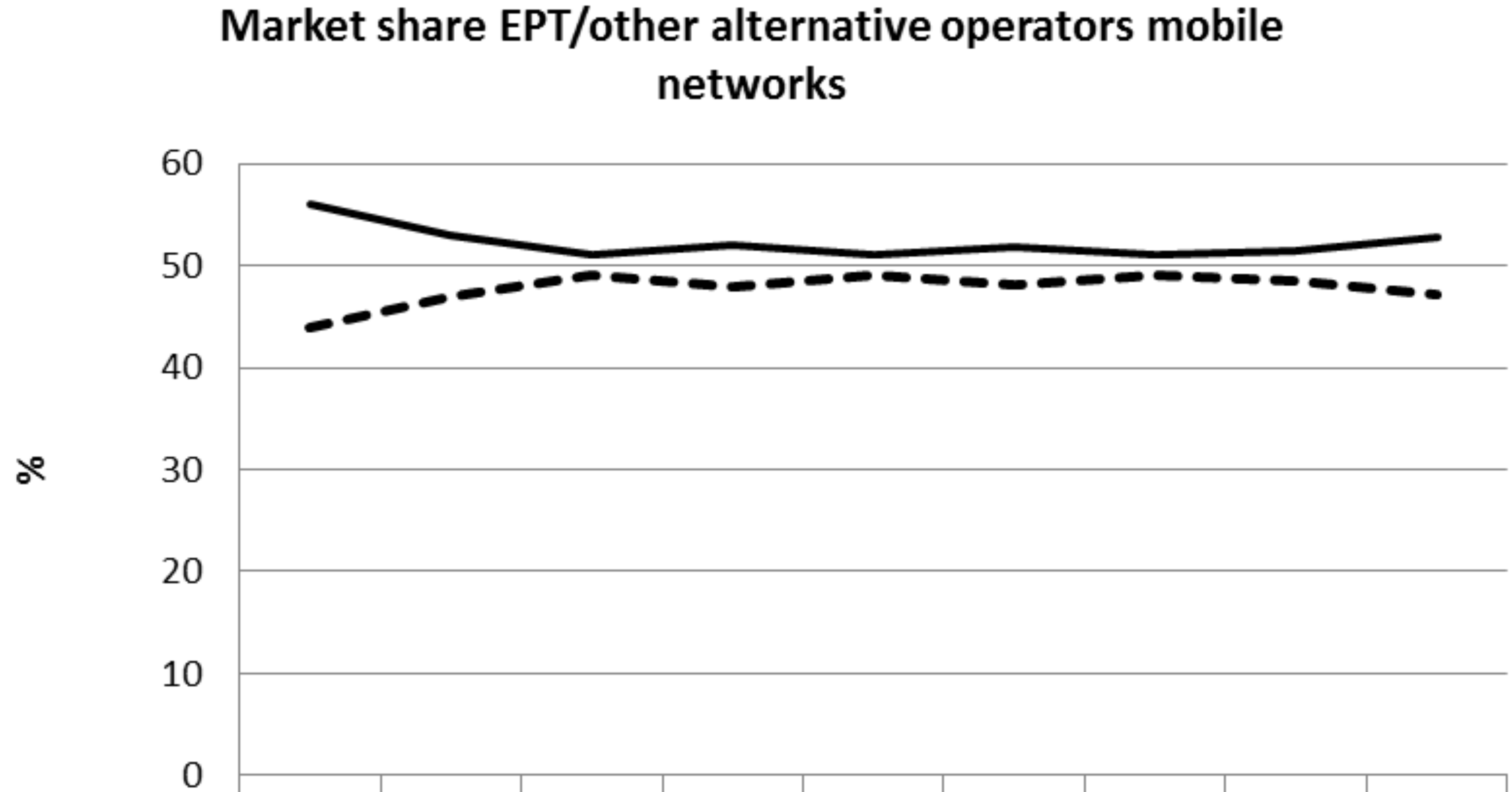
Competition in Fixed Markets

Market share (turnover) EPT/other operators fixed networks



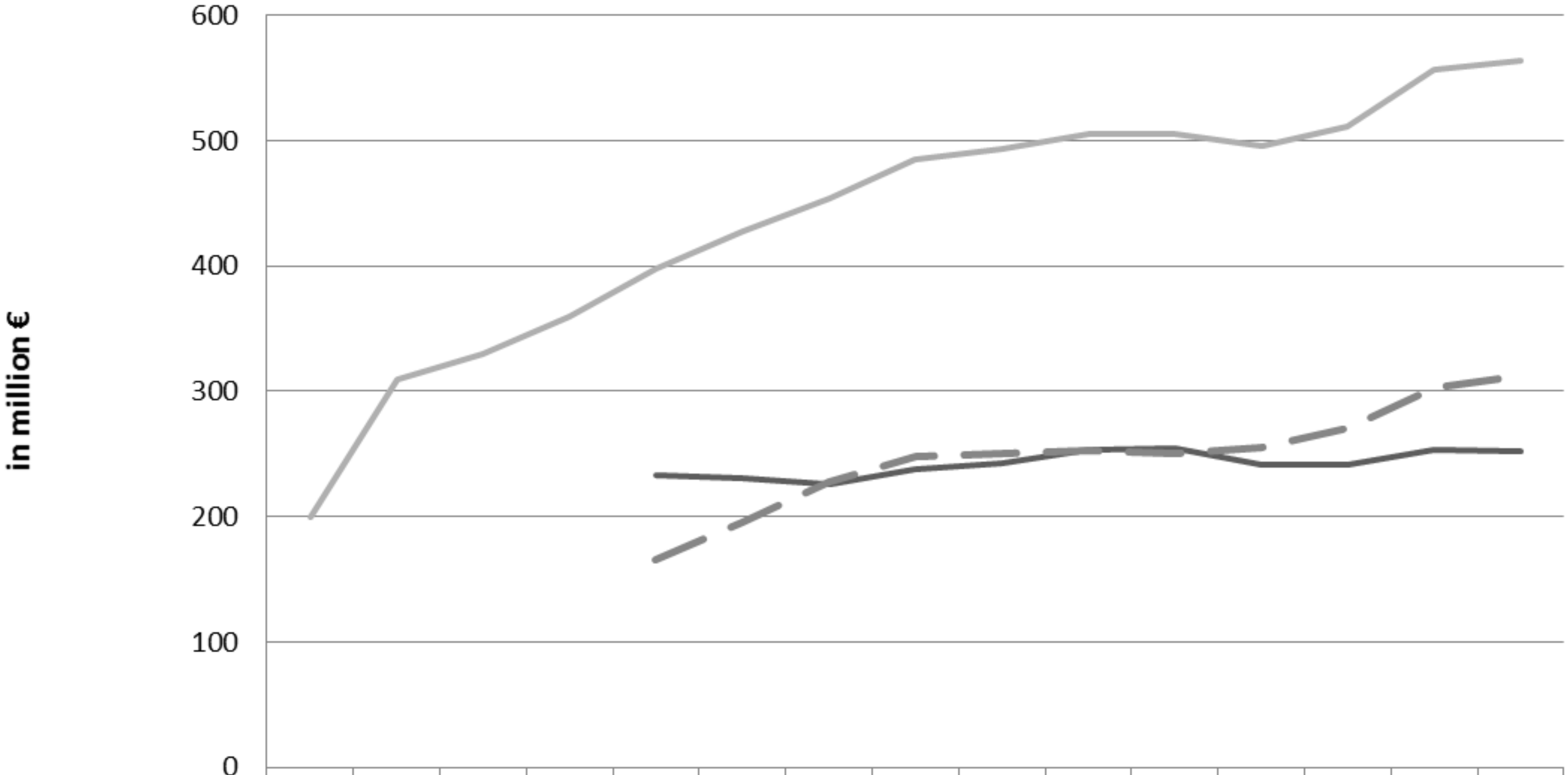
	2005	2006	2007	2008	2009	2010	2011	2012	2013
EPT	99	97	97	91	89	85	81	78	77,4
OAO	1	3	3	9	11	15	19	22	22,6

Competition in Mobile Markets



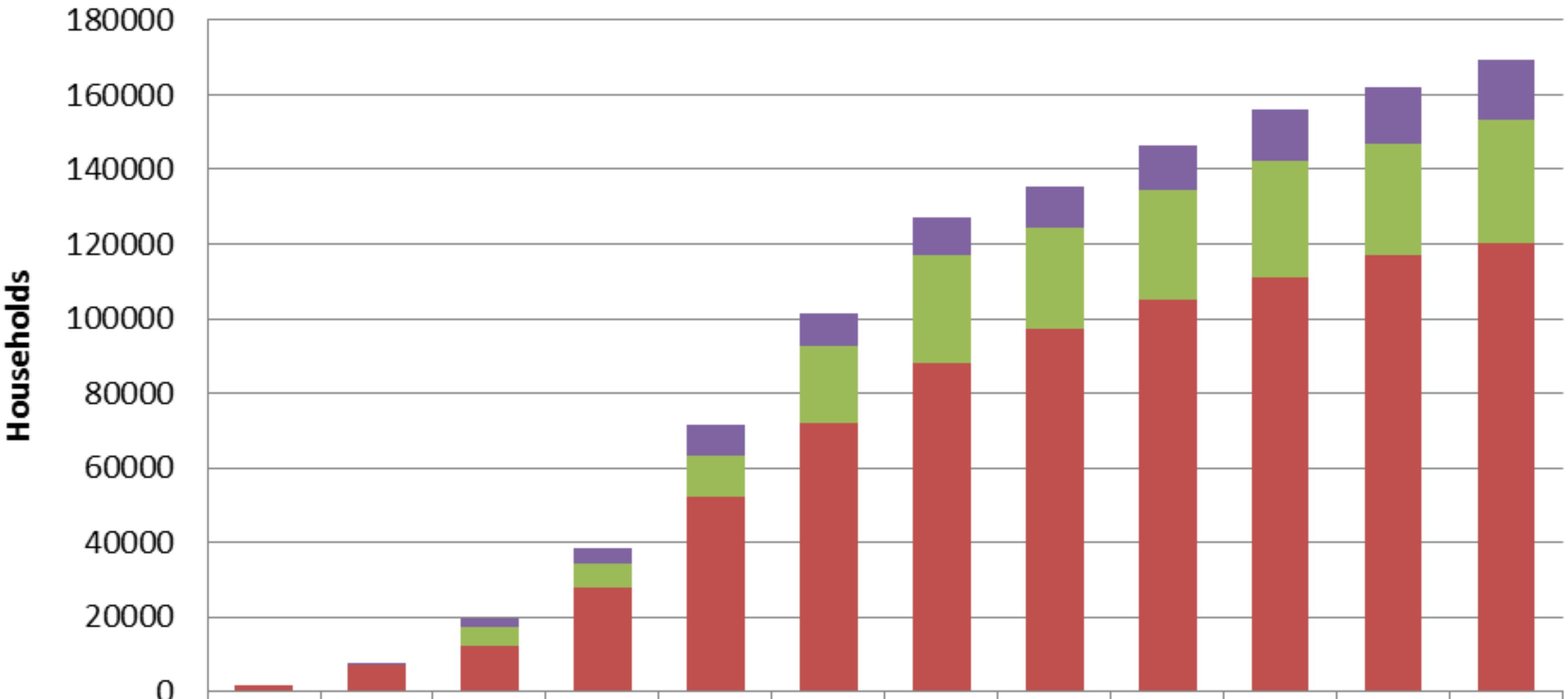
	2005	2006	2007	2008	2009	2010	2011	2012	2013
EPT	56	53	51	52	51	51,8	51	51,5	52,8
OAO	44	47	49	48	49	48,2	49	48,5	47,2

Is it working? Market size has increased substantially



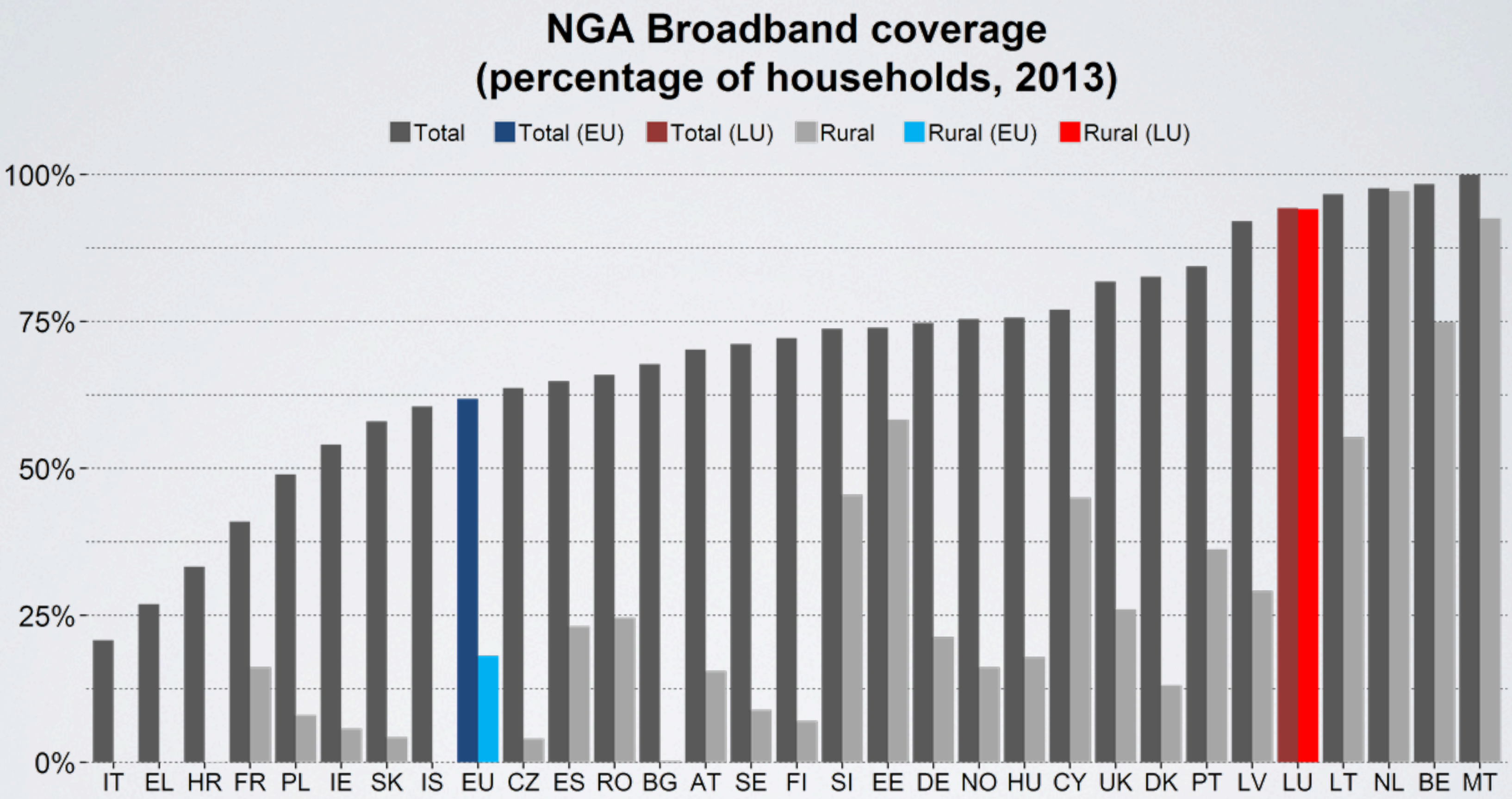
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Market Size	200	310	330	360	398	427	454	485	493	506	506	496	511	557	564
Fixed					233	231	226	238	242	253	255	242	241	254	252,2
Mobile					165	196	228	248	251	252	251	255	270	303	311,9

Is it working? Broadband connectivity has grown



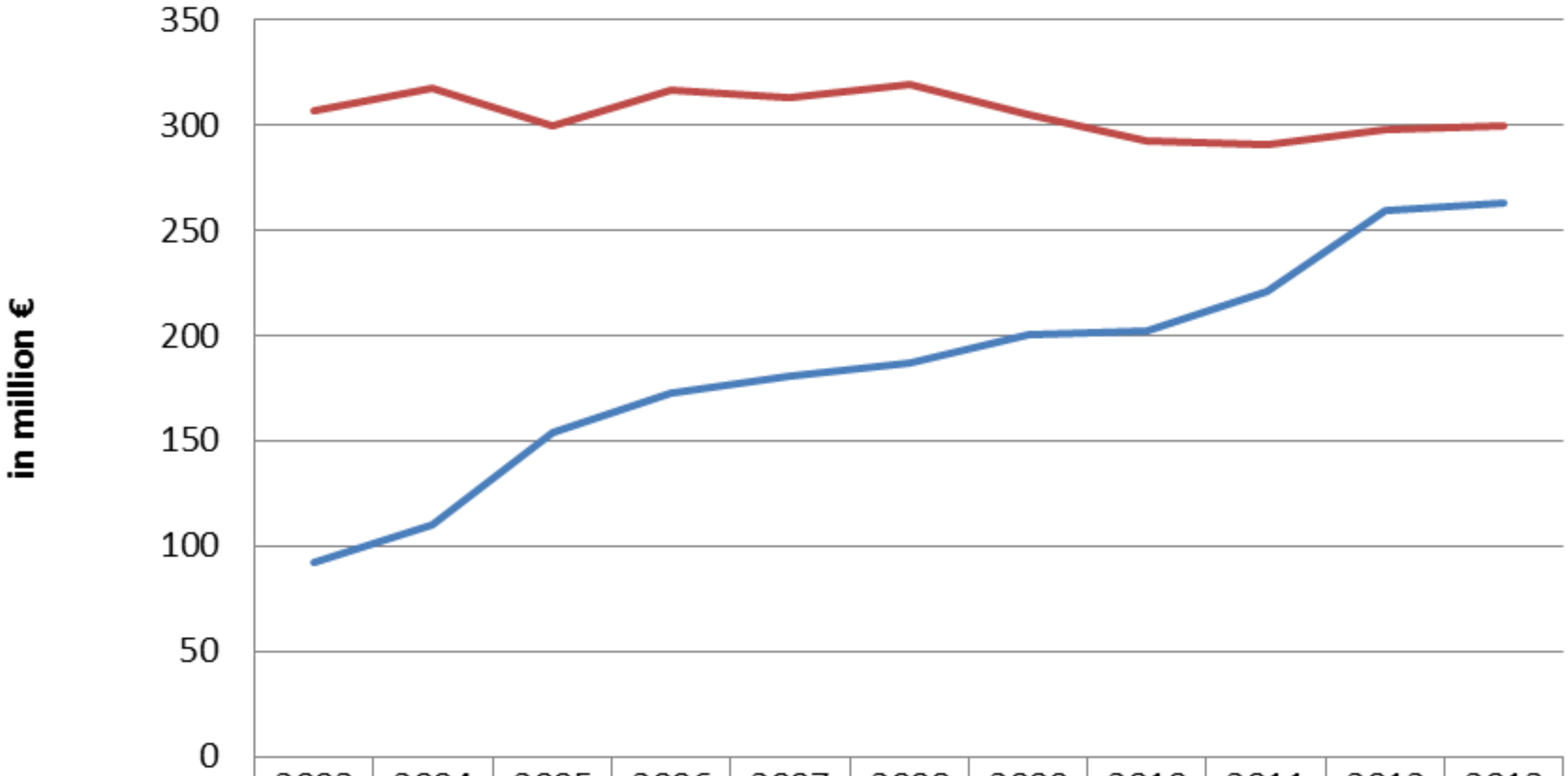
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
CATV	0	400	2500	4081	7956	8710	10000	11000	12000	13900	15200	16500
DSL Other	0	0	5000	6336	11065	20614	28747	26920	29244	31346	30000	32700
DSL EPT	1700	7000	12281	27906	52402	72170	88235	97326	105069	110999	117000	120400

Is it working? NGA Broadband widely available



Source: Digital Agenda scoreboard 2014

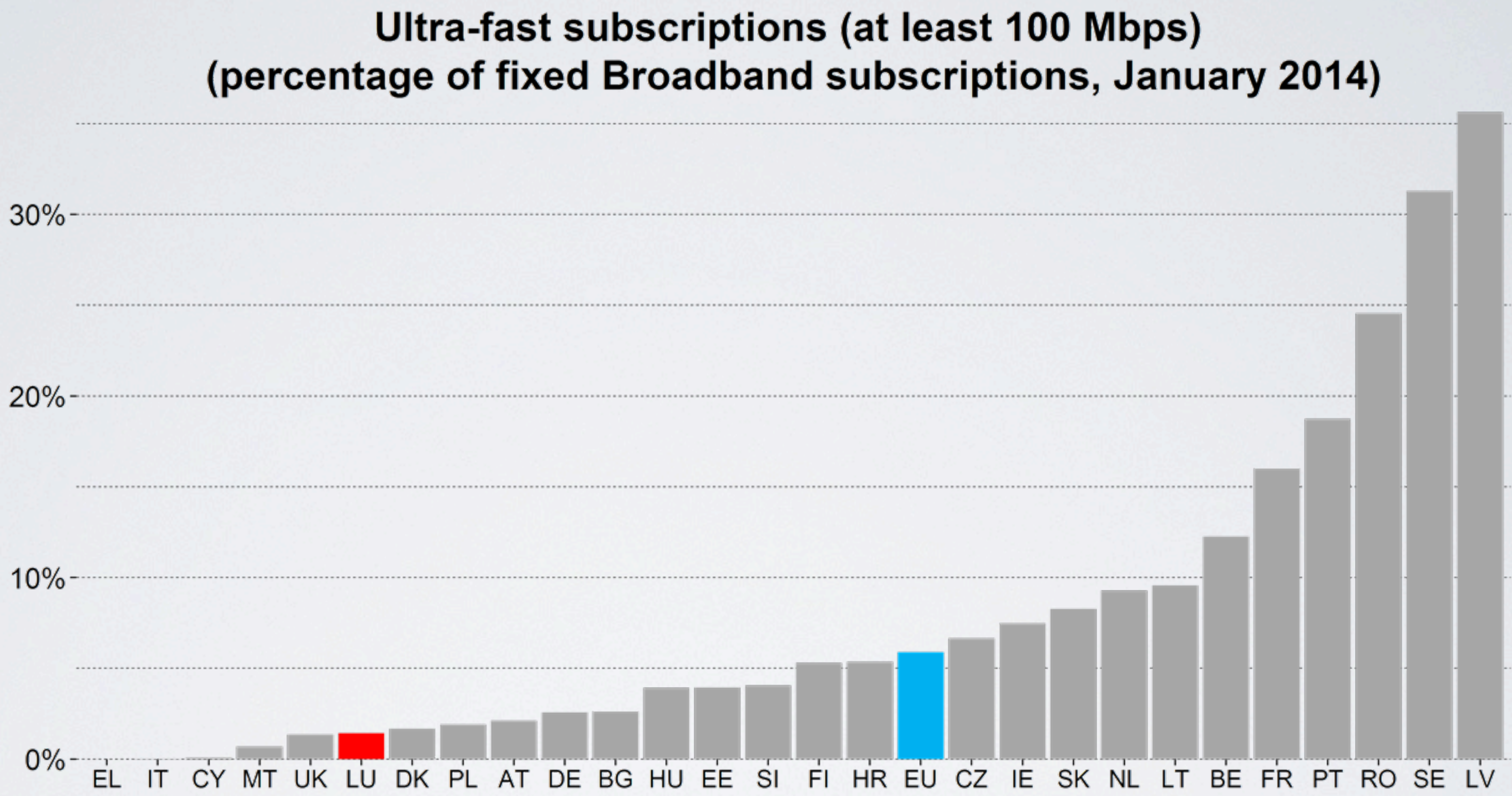
But the incumbent still dominates the market



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
EPT	306	318	300	317	313	319	305	292	291	298	300
Alt. Ops.	92	110	153	173	180	187	201	202	221	259	263

Source: ILR Statistical report 2013, includes TV revenues

And take up of UHB (>100 Mbit/s) is very low



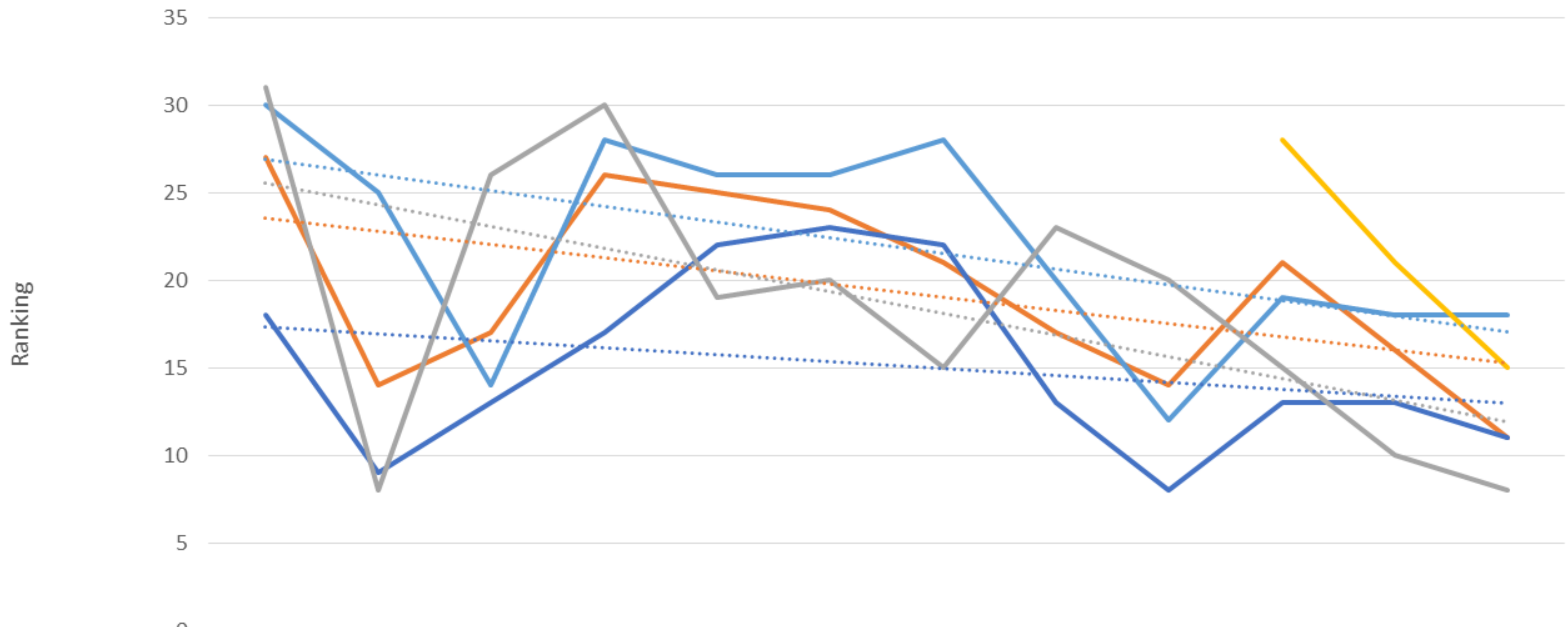
Source: Digital Agenda scoreboard 2014

And privatization?
The State is (still) heavily involved in the industry

Operators in which Governement has a stake	Major Private and International Operators
• Entreprise des Postes et Télécommunications (incumbent) • Post Telecom (incumbent mobile operator • Ebrc – datacentre and resilience provider • Luxconnect (Alternative infrastructure and datacentre provider) • Join Wireless (4th mobile operator, International MVNO) • Teralink (international fibre back-bone) • Hotcity (municipal wireless lan) • Visual Online (internet service provider) • Eltrona (largest CATV operator) • Artelis (telco operator, part of Energy Provider) • Societé Européenne des Satellites (Satellite telecommuncations)	• Tango (2nd mobile operator – Belgacom) • Orange (3rd mobile operator – France Télécom) • Telindus Telecom (B2B alternative carrier) • Numéricable (Altice Group) • Luxembourg Online • Telecom Luxembourg Private Operator (B2B alternative carrier)

Was/Is Luxembourg successful e.g. Networked Readiness Index

Networked Readiness Index and Subindices for Luxembourg and tendencies from 2003 to 2014



	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
NRI	27	14	17	26	25	24	21	17	14	21	16	11
Readiness	30	25	14	28	26	26	28	20	12	19	18	18
Environment	18	9	13	17	22	23	22	13	8	13	13	11
Usage	31	8	26	30	19	20	15	23	20	15	10	8
Impact										28	21	15

Issues

- The incumbent still dominates fixed, mobile and broadband markets at least in the regulated (residential) sector
- Some competition in B2B segment for example through Artelis and Telindus Telecom
- Government heavily involved in infrastructures (networks & datacentres) as well as in services
- Little international investment except for Belgacom and France Télécom
- International success less and less dependent on infrastructures and USP (tax advantage) is disappearing
- State budget under pressure – limited funds for further major investments

What comes next?

Towards a single EU market

- Roaming fees to disappear?
- International competition?

Technological changes

- The cloud
- All-IP networks

Over-the-top Competition?

The “fight” of E-skills?

Any questions or comments?

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