

ELCON: Partner of the German digital plan

White Paper



SUMMARY

1 – GERMAN BROADBAND MARKET

2 – GERMAN BROADBAND EXPANSION PLAN

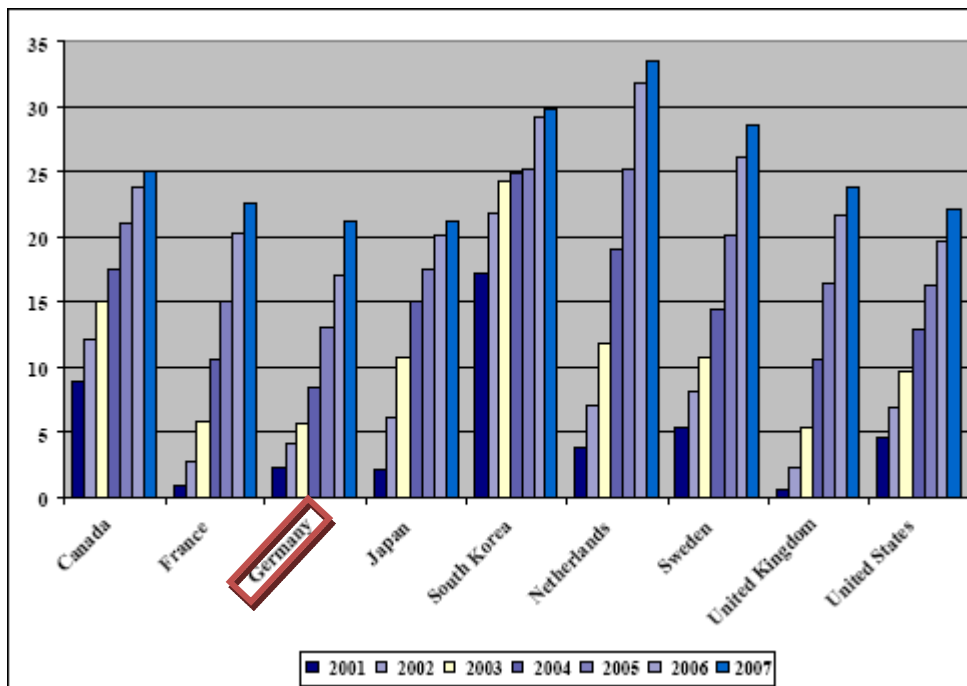
3 – ELCON VALUE PROPOSAL

1 – GERMAN BROADBAND MARKET

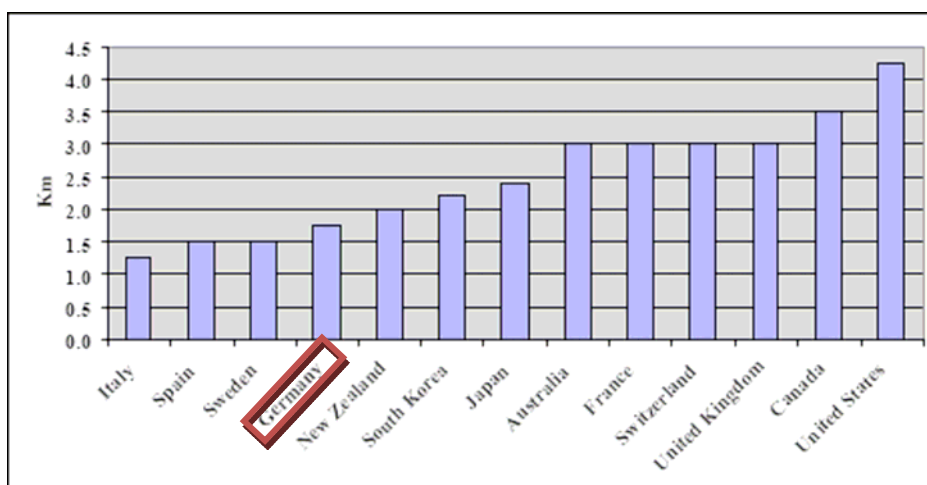
Here after some statistics are available for the German market:

- Broadband Penetration
- Average Local Loop Lengths
- Distribution of Broadband Subscribers by Type of Technology
- Price per Mbps
- Regulated Services Overview
- Next Generation Access (NGA) debate overview

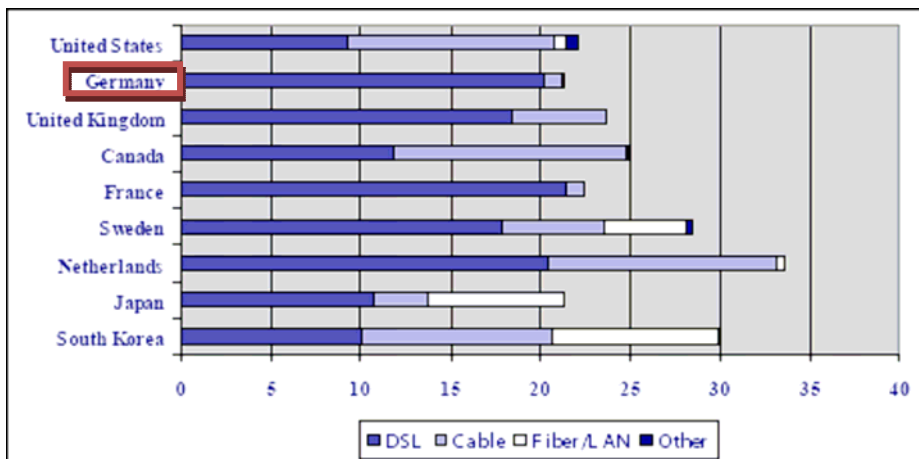
Compared to its neighbored France the German market is very similar except for the Average Local Loop Lengths and Price per Mbps.



Number of Broadband Subscribers per 100 Inhabitants in OECD Countries, 2001-2007 (Source: ITIF May 2008)



Average Local Loop Lengths in Selected OECD Countries (Source: ITIF May 2008)



Distribution of Broadband Subscribers in OECD Countries by Type of Broadband Technology per 100 Inhabitants, 2007 (Source: ITIF May 2008)

Ranking	Nation	Score on Specific Broadband Measures			Composite Score
		Household penetration (Subscribers per household)	Speed (Average download speed in Mbps)	Price (Lowest monthly price per Mbps) (US \$ purchasing power parity)	
1	South Korea	0.93	49.5	0.37	15.92
2	Japan	0.55	63.6	0.13	15.05
3	Finland	0.61	21.7	0.42	12.20
4	Netherlands	0.77	8.8	1.90	11.77
5	France	0.54	17.6	0.33	11.59
6	Sweden	0.54	16.8	0.35	11.53
7	Denmark	0.76	4.6	1.65	11.44
8	Iceland	0.83	6.1	4.93	11.20
9	Norway	0.68	7.7	2.74	11.05
10	Switzerland	0.74	2.3	3.40	10.78
11	Canada	0.65	7.6	3.81	10.61
12	Australia	0.59	1.7	0.94	10.53
13	United Kingdom	0.55	2.6	1.24	10.30
14	Luxembourg	0.56	3.1	1.85	10.25
15	United States	0.57	4.9	2.83	10.25
16	Germany	0.47	6.0	1.10	10.17
17	Belgium	0.57	6.3	3.58	10.17
18	Portugal	0.44	8.1	1.24	10.15
19	New Zealand	0.42	2.5	1.05	9.68
20	Spain	0.49	1.2	2.27	9.68
21	Italy	0.41	4.2	1.97	9.54
22	Austria	0.45	7.2	4.48	9.37
23	Ireland	0.46	2.1	4.72	9.01
24	Greece	0.18	1.0	1.41	8.26
25	Hungary	0.29	3.3	4.67	8.22
26	Poland	0.23	7.9	6.47	7.83
27	Czech Republic	0.30	2.0	9.70	7.03
28	Slovak Republic	0.22	3.5	9.38	6.77
29	Turkey	0.23	2.0	15.75	5.25
30	Mexico	0.20	1.1	18.41	4.41
	Average	0.51	9.2	3.77	10.00

ITI F's Broadband Rankings among the OECD Countries, 2007

	AUS	US	NZ	UK	GER	FRA	ITA	ESP
Retail price controls for basic line rental and voice call mins	✓	✓	✓	x	✓	✓	✓	✓
USO obligations	✓	✓	✓	✓	No operator designated ³¹	✓	✓	✓
Requirement to interconnect	✓	✓	✓	✓	✓	✓	✓	✓
Local call resale / CPS	✓	✓	✓	✓	✓	✓	✓	✓
Wholesale line rental (WLR)	(✓) ³²	✓ ⁴³	x	✓	x	✓	✓ ⁴¹	x
Bitstream and / or broadband resale	x	x	✓	✓	✓	✓	✓	✓
ULL	✓	✓ ⁴²	✓	✓	✓	✓	✓	✓
Partial private circuits	✓	x	x	✓	✓	✓	✓	✓
Accounting/ functional separation	✓	x	✓	✓	x	✓	✓	✓

Overview of regulated services in various international markets (Sources: Ovum, Yankee Group, OECD, individual regulators)

	Competing Infra	Forbearance	Status of regulatory debate on NGAs
Belg	✓	✗	<ul style="list-style-type: none"> • There is significant cable infrastructure in Belgium Initially regulator did not impose any obligations on Belgacom to offer wholesale access to its FTTC/VDSL network • Regulator BIPT has imposed conditions on Belgacom to ensure that its FTTC/VDSL deployment does not prevent altnets use of its DSL based exchanges • On the 4th Jan 2008, the regulator started a consultation on the impact of NGN on investment of alternative operators and existing regulated reference offers. The regulator recommends <ul style="list-style-type: none"> – Develop scenarios for sub loop unbundling, so that alternative operators can assess viability of investment – Publish information on the future evolution of its network per region for a five-year period if it is unbundled, one year if it is not – Keep open for a five year period site where it would like to stop operations following evolution of its network – Propose to altnets, the sharing of infrastructure or provide duct sharing services, access to dark fibre or backhaul solutions in sites where Belgacom has already upgraded its network.¹⁰¹
EU	Partial	✗	<ul style="list-style-type: none"> • Competition will continue to be an important component of any regulatory reform in the EU and is well captured by the following quotes from Viviane Reding: • "...there is an important new question to answer as we look at next generation networks offering high bandwidth, available everywhere, cheap and open to innovation and competition. Where will the investment come from to move us from legacy copper networks to new high bandwidth networks?" • "...a 'regulatory holiday' on fibre is definitely not the right way to boost investments in new infrastructures, as a few stakeholders have been claiming. This is not the way the EU Telecoms Rules work: our EU Framework is based on networks and services competing with each other in a technologically neutral way" • "...the possibility to impose ex ante regulation does not create uncertainty on returns. On the contrary; the EU rules require that only 'appropriate' remedies should be imposed and that those remedies must be differentiated in such a manner that they will allow investors a sufficient return on its investment in new infrastructure" • "So, good 'appropriate' ex ante regulation will safeguard both competition and the incentive to invest." • Additionally, Vivianne Reding has proposed a regulated rate for NGA investors. The guidelines will be issued in late 2008. "The objective will be to give certainty to investors on their return on investments over a reasonable timeframe, and to make also sure that access to new bottleneck infrastructures is guaranteed" . • "I believe that the best way for encouraging long-term investment is to establish a priori a number of principles that national regulators should take into account when regulating access prices with regard to next generation access networks". "In my personal view, these should include a risk premium of around 15%." (Reding, 26 June 2008)
France	Limited	✗	<ul style="list-style-type: none"> • Wide range of consultations by French regulator ARCEP • It has discounted sub-loop unbundling as a potential remedy • It is therefore focussing on options to ensure end-to-end competition in access networks. Therefore, it is seeking to 'mutualise' next generation access investment: <ul style="list-style-type: none"> – access to France Telecom's ducts. It released a consultation on this subject in June 2007. Over the last few years ARCEP, has been pro-actively auditing the quality and availability of FT duct for access and sharing – promoting municipal duct access; and – in building wiring – given the high proportion of multiple dwelling units. It released a consultation on this subject in June 2007 • In the City of Paris, the 1,120-mile sewer passive infrastructure has been made available to lay duct for deploying fibre networks at nominal rates. • FT has agreed to provide duct geo-location information to its competitors in order for the competitor to survey the duct quality and spare capacity • FT is currently in negotiations with the main competing operators in developing a fit for purpose wholesale duct access offering, with ARCEP acting as the arbitrator
Ger	Limited	✓ - under challenge	<ul style="list-style-type: none"> • Significant debate around forbearance and consultations over a number of years • Deutsche Telekom is granted a time-limited regulatory holiday for its FTTx/VDSL roll-out – under challenge from the European Commission. The German regulator (BNetzA) has indicated its preferred approach to promote sub-loop unbundling, allowing competitors to Deutsche Telekom's backhaul from its VDSL cabinets. However, the consultation makes no reference to terms for access to Deutsche Telekom's cabinets • The German approach is currently being challenged by the European Commission on the grounds that it contravenes the current EU Telecommunications Framework [to check] • In June 2007, the German Federal Network Agency obliged Deutsche Telekom to grant access to the 'last mile' of the passive infrastructure of its VDSL network, including not only its duct network, but where duct capacity was not available access to dark fibre

Summary of Next Generation Access debate/remedies by market (Source: Spectrum Value Partners 2008)

2 – GERMAN BROADBAND EXPANSION PLAN



(© dpa/picture-alliance)

Faced with the economic crisis, the German government placed on information technology and communication (ICT). Chancellor Angela Merkel had announced at the 3rd Summit on ICT, 20 November 2008, Darmstadt: it will broaden access to broadband Internet into more remote rural areas. "China and emerging countries develop their road networks. Similarly, we must develop our broadband networks," she explained. The broadband digital networks are a key to the growth of European industrial societies.

The ambition of the German Government is to ensure that not one inch of territory, even rural, is denied of access to broadband Internet. According to the Chancellor, this will be done in Germany "in a few years." But Merkel does not stop there. It also promises to commit to expand the access of rural areas and sparsely populated broadband networks (DSL, UMTS) within the European Union (EU).

To realize her ambition, the German government promised "incentives" to boost business investment in the development of telecommunications networks. It will also create new frequencies for digital wireless applications, in agreement with the Länder.

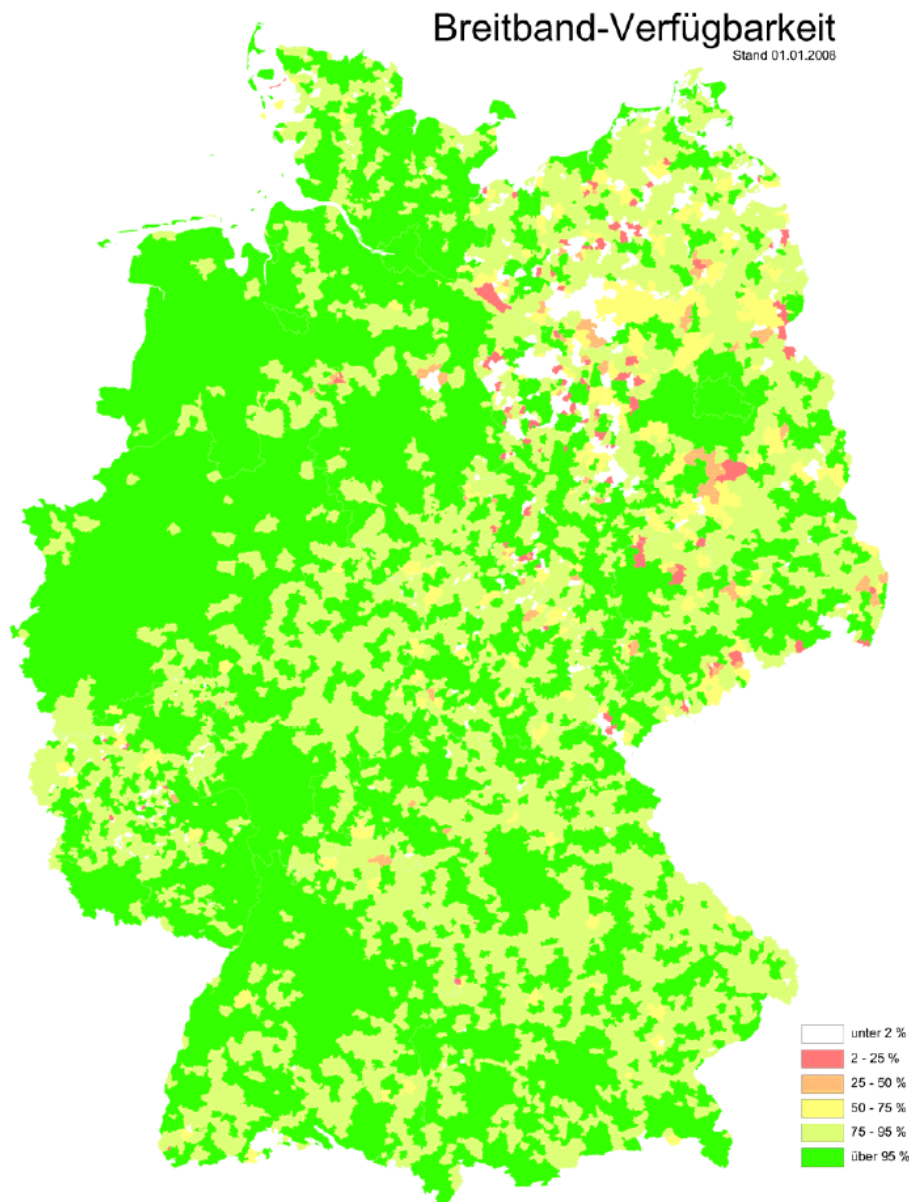
On this occasion, the Federal Ministry of Economics and Technology has presented its strategy "Broadband for the Future", jointly developed with industry in the field of ICT and whose objective is to cover all German territory with broadband. The federal government had already supported this project through various measures.

Among the 5 leading European nations in the ICT field, Germany is in second place behind Britain in terms of broadcasting and use of ICT. Currently, the majority of the Germans use a broadband connection. End 2008, approximately 60% of households use a broadband connection (at least 1 Mbit / s), experts predict that by the end of 2009 more than 99% will be equipped with this type of connection. The next step will be the construction of modern data networks with rates of 50 Mbit / s and beyond, to promote growth in ICT and to exploit the impulse given by the politics.

Michael Glos, Federal Minister of Economics and Technology (BMW), sees the positive improvements in the isolation of certain areas of Germany with regard to broadband connections. As represented on the new version of the map of broadband in Germany [below], many areas have been equipped with high speed in recent years. At present, 98% of households have the opportunity to use a broadband connection. With over 5 million new users in 2007, the German market for broadband is one of the most dynamic in Europe. The proportion of customers using a broadband connection with a throughput greater than 2 Mbit / s is over 70%.

Despite this positive, more than 700,000 homes are without access to broadband. "That is why the federal government will intensify its efforts in this area," said Mr. Glos. The federal government is already promoting the expansion of broadband coverage through a series of measures. Recently within the BMWi, a working group was established to act actively on the lack of broadband coverage in certain areas. This group consists of members from associations of the IT industry, the National Telecommunications Regulatory of Germany (Bundesnetzagentur), leaders of the Länder, the Chamber of Commerce and Industry of Germany (DIHK) and competence centers specializing in broadband technology.

"When this group of actors work together, it is possible to find economic and solid solutions in most cases," said Mr. Glos. **There are often small and medium enterprises which are on site and propose alternative technologies that can rapidly be implemented.**



3 – ELCON VALUE PROPOSAL

ELCON Systemtechnik GmbH with headquarter in Hartmannsdorf (Germany), is a European supplier leader of transmission equipment and network access for the optimization of telecommunications networks over copper, fiber and coaxial cable.

Access to broadband is a priority for the German country planning on which ELCON is giving its support.

Faced with this challenge to society, ELCON offers a set of technological solution that aims to open up areas of the territory that do not have access to the Internet or make the triple play accessible to all.

The following solutions are part of ELCON support program:

- ELCONnect coax that provides easy and low cost distribution of the Internet on coaxial cable for small communities (hotels, retirement residence, hospitals ...) and this from a single Internet access point , typically a wireless link (Satellite, Wimax) or a fixed line.
- ELCONnect DSL-Extender that allow operators to make eligible not covered areas or to give a much higher speed to existing not broadband customers.
- ELCONnect fiber that allows city carriers to offer broadband access based on private fiber network to the local citizens.

More details about all these applications are available on ELCON dedicated white papers.