

Regulation of the telecommunication industry in the EU

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Information society and telecommunication

- Telecomm is the basic infrastructure of IS.
- Bangemann-report – 1994

Europe and the global information society.

Recommendation to the European Council

- ISDN network ☺
- *Cancellation of exclusive and special rights – especially in telecommunications*
- Privacy protection
- IT security
- Standardization

Main telephone lines per 100 inhabitants, 1990-2003

	1990	1995	2000	2003
Austria	42,2	47,8	49,9	47,9
Czech Rep.	15,2	23,7	37,7	35,5
Germany	40,3	51,5	61,1	65,8
Hungary	9,6	21,5	37,2	35,5
Poland	8,7	28,2	28,3	31
Slovakia	13,4	30,9	31,5	24,1

Cellular mobile telephone subscribers, (Thousand) 1990-2003

	1990	1995	2000	2003
Austria	74	384	6114	7095
Czech Rep.	0	49	4346	9709
Germany	273	3725	48202	64800
Hungary	3	265	3076	7945
Poland	0	75	6447	17401
Slovakia	0	12	1110	3679

What happened to the telecomm?

- Boom in technology
- Convergence
- Paradigm shift in regulation

Convergence

■ Green Paper of 1997


- Technology
- Industrial boards (horizontal and vertical)
- Services and markets
- Policies

■ OECD 2005

- New end-user services
- Substituting services on different platforms
- Competitive and complementary approach

Convergence and IP

■ Next Generation Network

- Totality over IP
- More IP-addresses needed
- IP4  IP6

Convergence and IP

■ IP4

- 4 byte-long address
 - 192.65.167.88
- Limited resource
 - $256^4 = 4.294.967.296$

■ IP6

- 16 byte-long address
 - 192.65.167.88
- Limited resource
 - $256^{16} = 3.4 * 10^{38}$

Internet Domain

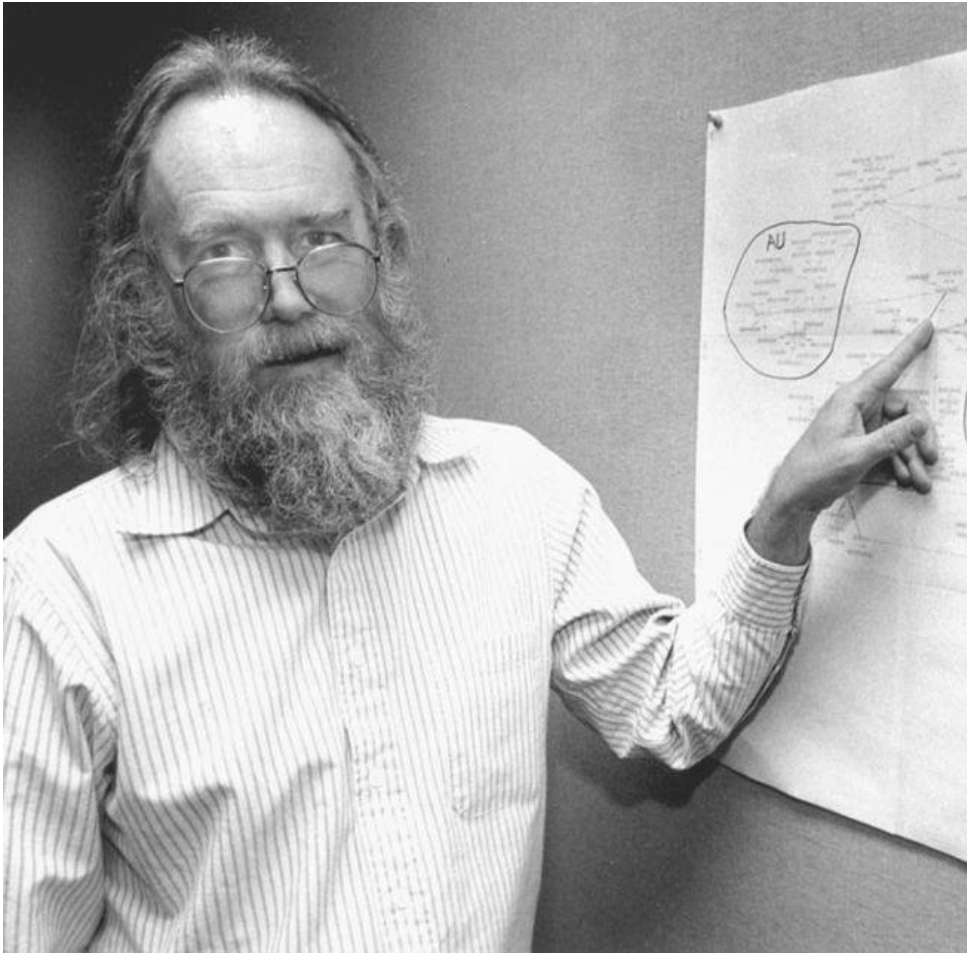
Jel	Régi név	Operátor	Hely
A	ns.internic.net	VeriSign	Dulles, Virginia, USA
B	ns1.isi.edu	ISI	Marina Del Rey, California, USA
C	c.psi.net	Cogent Communications	distributed using anycast
D	terp.umd.edu	University of Maryland	College Park, Maryland, USA
E	ns.nasa.gov	NASA	Mountain View, California, USA
F	ns.isc.org	ISC	distributed using anycast
G	ns.nic.ddn.mil	U.S. DoD NIC	Columbus, Ohio, USA
H	aos.arl.army.mil	U.S. Army Research Lab	Aberdeen Proving Ground, Maryland, USA
I	nic.nordu.net	Autonomica	distributed using anycast
J		VeriSign	distributed using anycast
K		RIPE NCC	distributed using anycast
L		ICANN	Los Angeles, California, USA
M		WIDE Project	distributed using anycast

Internet domain

■ International level

- 1992-1999. NSI = Network Solutions Incorporated
- 1995-1999. IANA = Internet Assigned Names Authority
- 1999- ICANN = Internet Corporation for Assigned Names and Numbers

Internet domain



■ Jon Bruce Postel

1943. aug. 6. – 1998.
okt. 16.

■ Coup 28 January 1998

A.ROOT-

SERVERS.NET.

(198.41.0.4)

DNSROOT.IANA.ORG

(198.32.1.98)

Internet domain



■ Ira Magaziner

- Internet-policy expert
- ICANN initiative

Paradigm shift in regulation

■ State monopoly

- Exclusive and special rights
- Strict control

■ Liberal market

- Market-driven development
- Competitive services

Step-by-step towards the new regulation

- T_0 – State monopoly
- T_1 – Competition in the markets in telecommunications terminal equipment
- T_2 – Concept of liberalization
- T_3 – Unrestricted competition
- T_4 – Electronic communications regulatory framework - 2002

T₀ : Telecommunication as a natural monopoly

■ Reasons...

- Cost-efficiency
- Mass of investment
- Strategic importance
- Legend of the universal services

■ ...and consequences

- One serves; the same regulates
- Non-competitive trading
- Low level of technological innovation

T₁ : The first step

- **Competition in the markets in telecommunications terminal equipment**
 - **Directive 1988/301/EEC**

T₂ : Competition in telecomm market

■ Aims

- Cancellation of state monopoly
- Facilitating of competitive substituting services
- Technological innovation
- Maintenance of universal services

■ Manners

- Separation of service provider and regulatory power
- Opening new markets
- Liberalization of the services
- Liberalization of entrance into market
- Competition law

T₃ : Unrestricted competition

- Separation of service and infrastructure
 - Directive 1996/19/EEC
- Open Network Provision (ONP)
 - Equal conditions for the access to infrastructure
 - Directive 90/387/EEC

T₄ : New regulatory framework

1. Directive 2002/19/EC of the European Parliament and of the Council of 7 March 2002 on access to, and interconnection of, electronic communications networks and associated facilities (**Access Directive**)
2. Directive 2002/20/EC of the European Parliament and of the Council of 7 March 2002 on the authorisation of electronic communications networks and services (**Authorisation Directive**)
3. Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services (**Framework Directive**)
4. Directive 2002/22/EC of the European Parliament and of the Council of 7 March 2002 on universal service and users' rights relating to electronic communications networks and services (**Universal Service Directive**)
5. Directive 2002/58/EC of the European Parliament and of the Council of 12 July 2002 concerning the processing of personal data and the protection of privacy in the electronic communications sector (**Directive on privacy and electronic communications**)
6. Commission Directive 2002/77/EC of 16 September 2002 on competition in the markets for electronic communications networks and services
7. Directive 2006/24/EC of 15 March 2006 on the regulation of generated or processed in connection with the provision of publicly available electronic communications services or of public communications networks and amending Directive 2002/58/EC (**Data Retention Directive**)

T₄ : New regulatory framework

- 1. Access Directive**
- 2. Authorisation Directive**
- 3. Framework Directive**
- 4. Universal Service Directive**
- 5. Telecommunication privacy directive**
- 6. Telecommunication competition directive**
- 7. Data retention directive**

EU Committees and Working Groups in telecomm regulation

1. Communications Committee
2. Radio Spectrum Committee
3. Radio Spectrum Policy Group
4. European Regulators Group
5. Working Party on the Protection of Individuals with regard to the Processing of Personal Data (Article 29 working party)

Platform-neutrality

(a) "**electronic communications network**" means transmission systems and, where applicable, switching or routing equipment and other resources which permit the conveyance of signals by wire, by radio, by optical or by other electromagnetic means, including satellite networks, fixed (circuit- and packet-switched, including Internet) and mobile terrestrial networks, electricity cable systems, to the extent that they are used for the purpose of transmitting signals, networks used for radio and television broadcasting, and cable television networks, irrespective of the type of information conveyed;

Framework Directive (Art. 2)

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 - electricity cable systems, to the extent that they are used for the purpose of transmitting signals,
 - networks used for radio and television broadcasting, and cable television networks,
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Universal service

Universal service directive (art. 3)

- the services are made available at the quality specified to all end users in their territory,
- independently of geographical location, and
- at an affordable price (*in the light of specific national conditions*)

Universal service

- Provision of access at a fixed location
 - connection to the public telephone network and for access to publicly available telephone services
 - able to make and receive local, national and international telephone calls
 - Fax (facsimile communications) and
 - data communications, *at data rates that are sufficient to permit functional Internet access.*
- Directory enquiry services and directories
- Public pay telephones
- Emergency calls from public pay telephones
 - using the single European emergency call number "112" and
 - other national emergency numbers,
 - all free of charge
- Special measures for disabled users

Universal service

Compensation and/or cost sharing

- Member states are allowed to introduce
 - a mechanism to compensate that undertaking for the determined net costs from public funds;
 - **and/or**
 - to share the net cost of universal service obligations between providers of electronic communications networks and services.

Significant market power

- individually or jointly with others, it enjoys a position equivalent to **dominance**
 - DOMINANCE = behave independently of competitors, customers and ultimately consumers *to an appreciable extent*.

Significant market power

- National regulatory authority
 - Market definition procedure
 - Market analysis procedure
- Criteria to be used by national regulatory authorities
 - mature market,
 - stagnant or moderate growth on the demand side,
 - low elasticity of demand,
 - homogeneous product,
 - similar cost structures,
 - similar market shares,
 - lack of technical innovation, mature technology,
 - absence of excess capacity,
 - high barriers to entry,
 - lack of countervailing buying power,
 - lack of potential competition,
 - various kinds of informal or other links between the undertakings concerned,
 - retaliatory mechanisms,
 - lack or reduced scope for price competition.

Data retention directive

(a) data necessary to trace and identify the source of a communication

1. concerning fixed network telephony and mobile telephony:

i. the calling telephone number;

ii. the name and address of the subscriber or registered user;

2. concerning Internet access, Internet e-mail and Internet telephony:

i. the user ID(s) allocated;

ii. the user ID and telephone number allocated to any communication entering the public telephone network;

iii. the name and address of the subscriber or registered user to whom an Internet Protocol (IP) address, user ID or telephone number was allocated at the time of the communication;

Data retention directive

b) data necessary to identify the destination of a communication:

1. concerning fixed network telephony and mobile telephony:

i. the number(s) dialed (the telephone number(s) called), and, in cases involving supplementary services such as call forwarding or call transfer, the number or numbers to which the call is routed;

ii. the name(s) and address(es) of the subscriber(s) or registered user(s);

2. concerning Internet e-mail and Internet telephony:

i. the user ID or telephone number of the intended recipient(s) of an Internet telephony call;

ii. the name(s) and address(es) of the subscriber(s) or registered user(s) and user ID of the intended recipient of the communication;

Data retention directive

c) data necessary to identify the date, time and duration of a communication:

1. concerning fixed network telephony and mobile telephony:

i. the date and time of the start and end of the communication

2. concerning Internet e-mail and Internet telephony:

i. the date and time of the log-in and log-off of the Internet access service, based on a certain time zone, together with the IP address, whether dynamic or static, allocated by the Internet access service provider to a communication, and the user ID of the subscriber or registered user;

ii. the date and time of the log-in and log-off of the Internet e-mail service or Internet telephony service, based on a certain time zone;

Data retention directive

d) data necessary to identify the type of communication:

1. concerning fixed network telephony and mobile telephony:

i. the telephone service used;

2. concerning Internet e-mail and Internet telephony:

i. the Internet service used;

Data retention directive

e) data necessary to identify users' communication equipment or what purports to be their equipment:

1. concerning fixed network telephony

i. the calling and called telephone numbers;

2. concerning mobile telephony:

i. the calling and called telephone numbers;

ii. the International Mobile Subscriber Identity (IMSI) of the calling party;

iii. the International Mobile Equipment Identity (IMEI) of the calling party;

iv. the IMSI of the called party;

v. the IMEI of the called party;

vi. in the case of pre-paid anonymous services, the date and time of the initial activation of the service and the location label (Cell ID) from which the service was activated;

3. concerning Internet e-mail and Internet telephony:

i. the calling telephone number for dial-up access;

ii. the digital subscriber line (DSL) or other end point of the originator of the communication;

Data retention directive

f) data necessary to identify the location of mobile communication equipment:

1. the location label (Cell ID) at the start of the communication;

2. data identifying the geographic location of cells by reference to their location labels (Cell ID) during the period for which communications data are retained.