

## **Regional and international overviews of telecommunication statistics**

- OECD work on communications indicators  
*Mr. S. Paltridge, OECD, France*
- Statistics in Sri Lanka & future developments in telecommunications  
*Mr. A.S.W. Bandusiri Silva, Telecommunication Regulatory Authority,  
Sri Lanka*
- Eurostat's prospects on telecommunications statistics  
*Mr. M. Lumio, Eurostat, Luxembourg*





INTERNATIONAL TELECOMMUNICATION UNION

**TELECOMMUNICATION  
DEVELOPMENT BUREAU**

**INFORMATION SYSTEMS UNIT**

**Document WTIM99/17-E**

**12 March 1999**

**Original: English**

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**2<sup>nd</sup> World Telecommunication Indicators Meeting  
(Geneva, 29 - 31 March 1999)**

**SOURCE: MR. SAM PALTRIDGE, OECD, FRANCE**

**TITLE: OECD WORK ON COMMUNICATION INDICATORS**

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# OECD Work on Communication Indicators

Sam Paltridge and Mary Thomson,  
OECD

Presentation to ITU “2nd World  
Telecommunication Indicators  
Meeting”, Geneva, 29-31 March

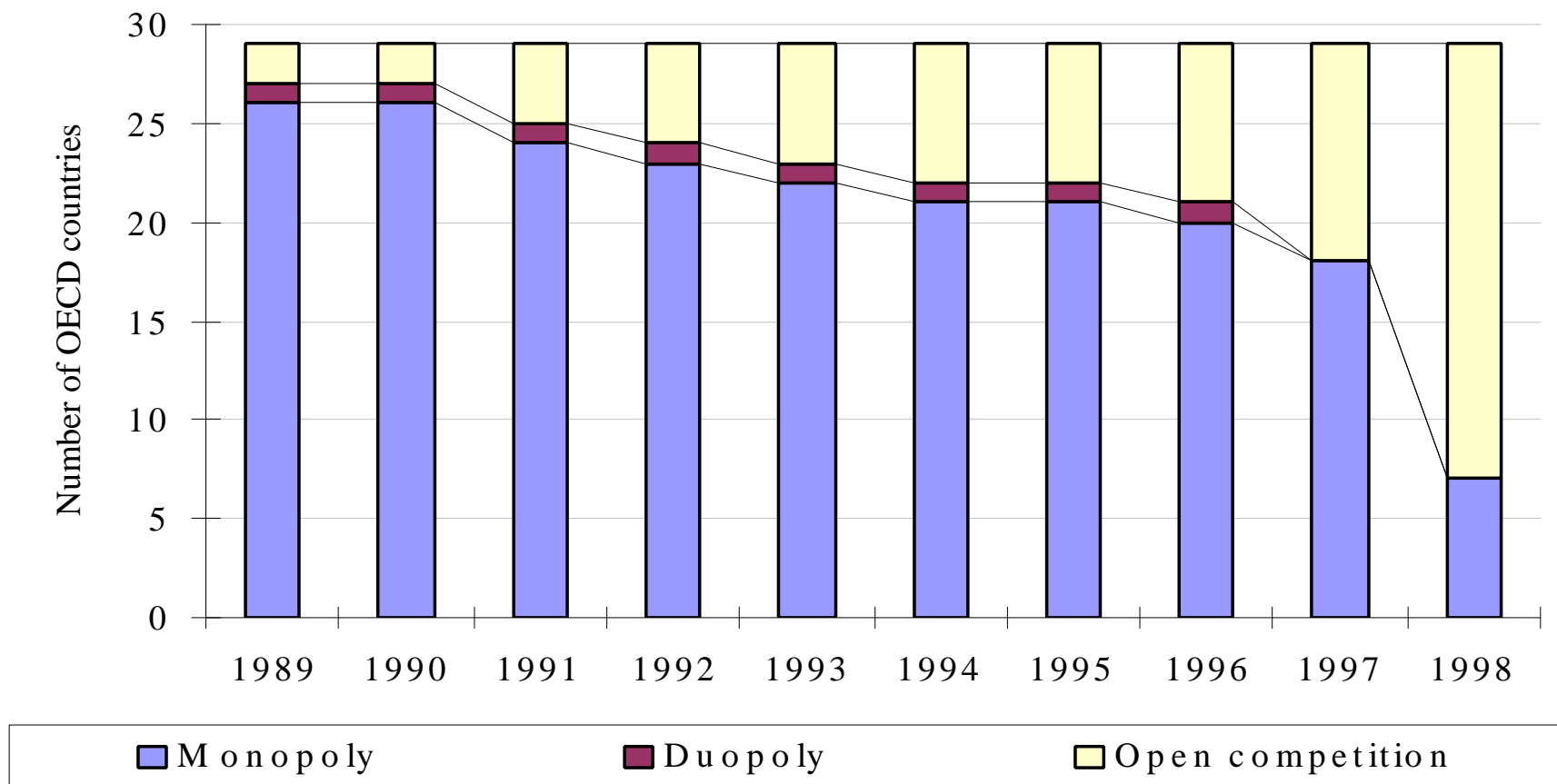


# Introducing OECD work

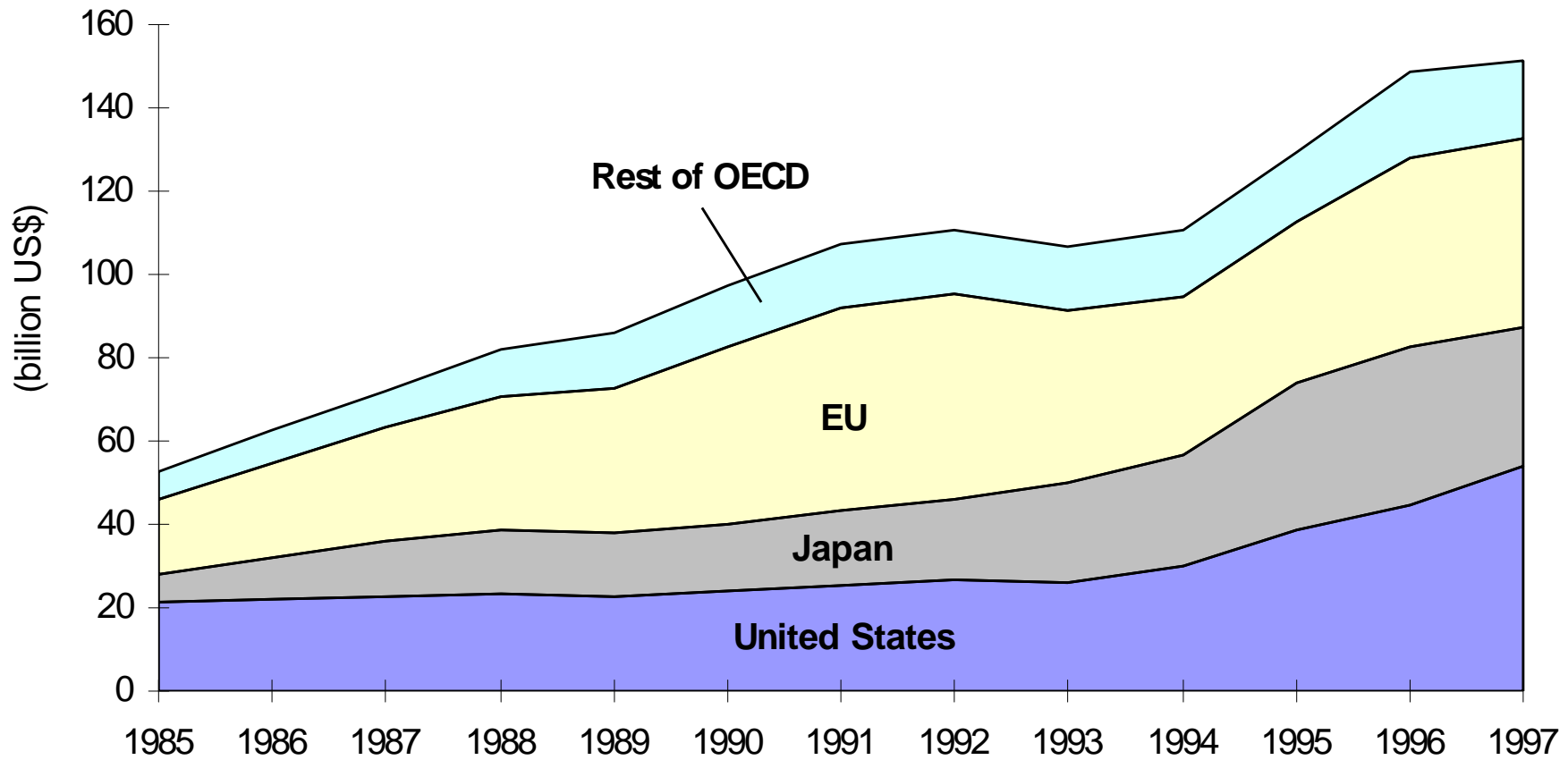
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- Why does the OECD measure communication markets?
- How is work on telecommunication structured at the OECD?
- What is measured?
- New Indicators

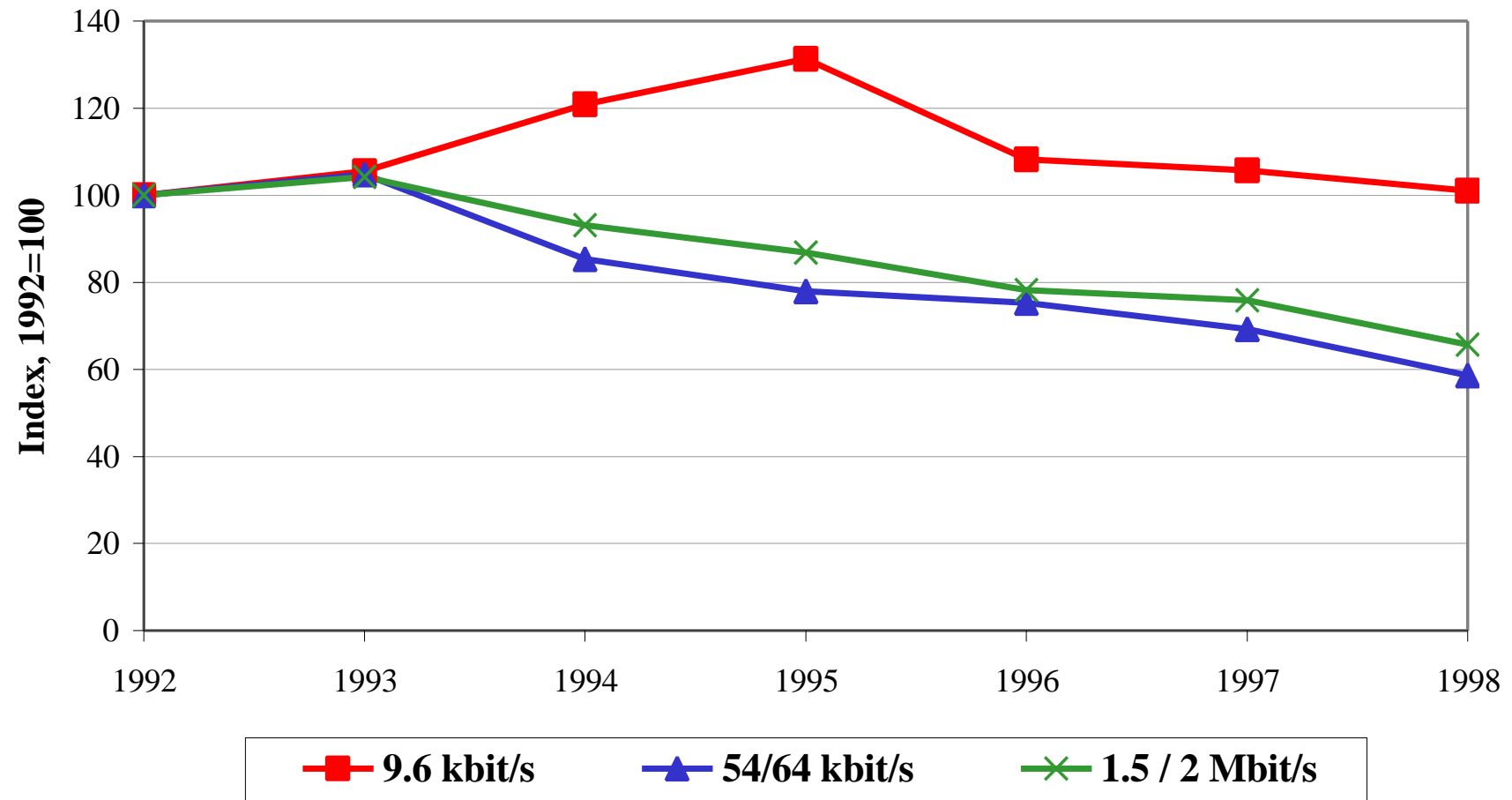
# Market structures and their impacts



# Comparative analysis of policy



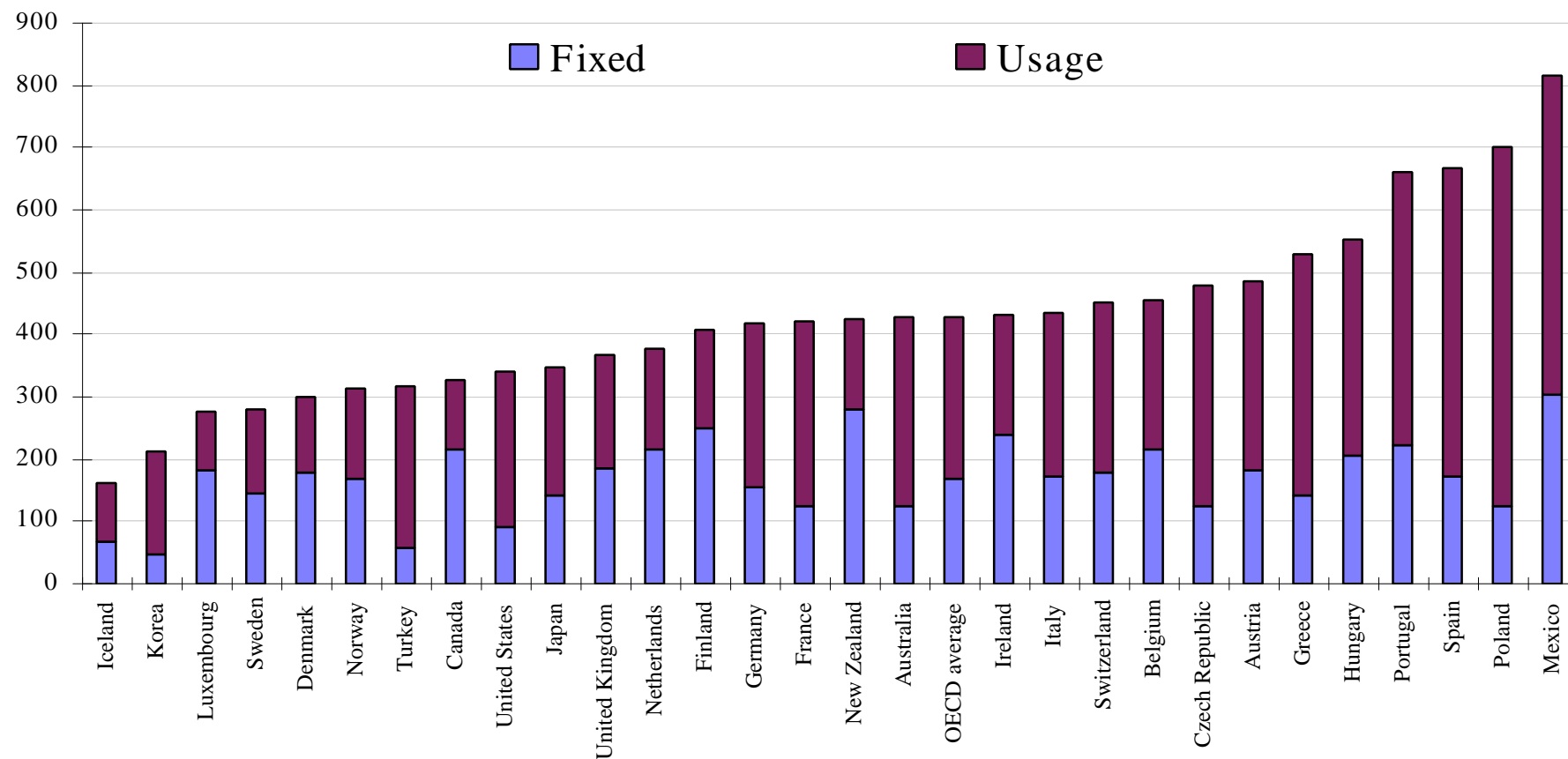
# Time series of leased line tariffs for OECD countries





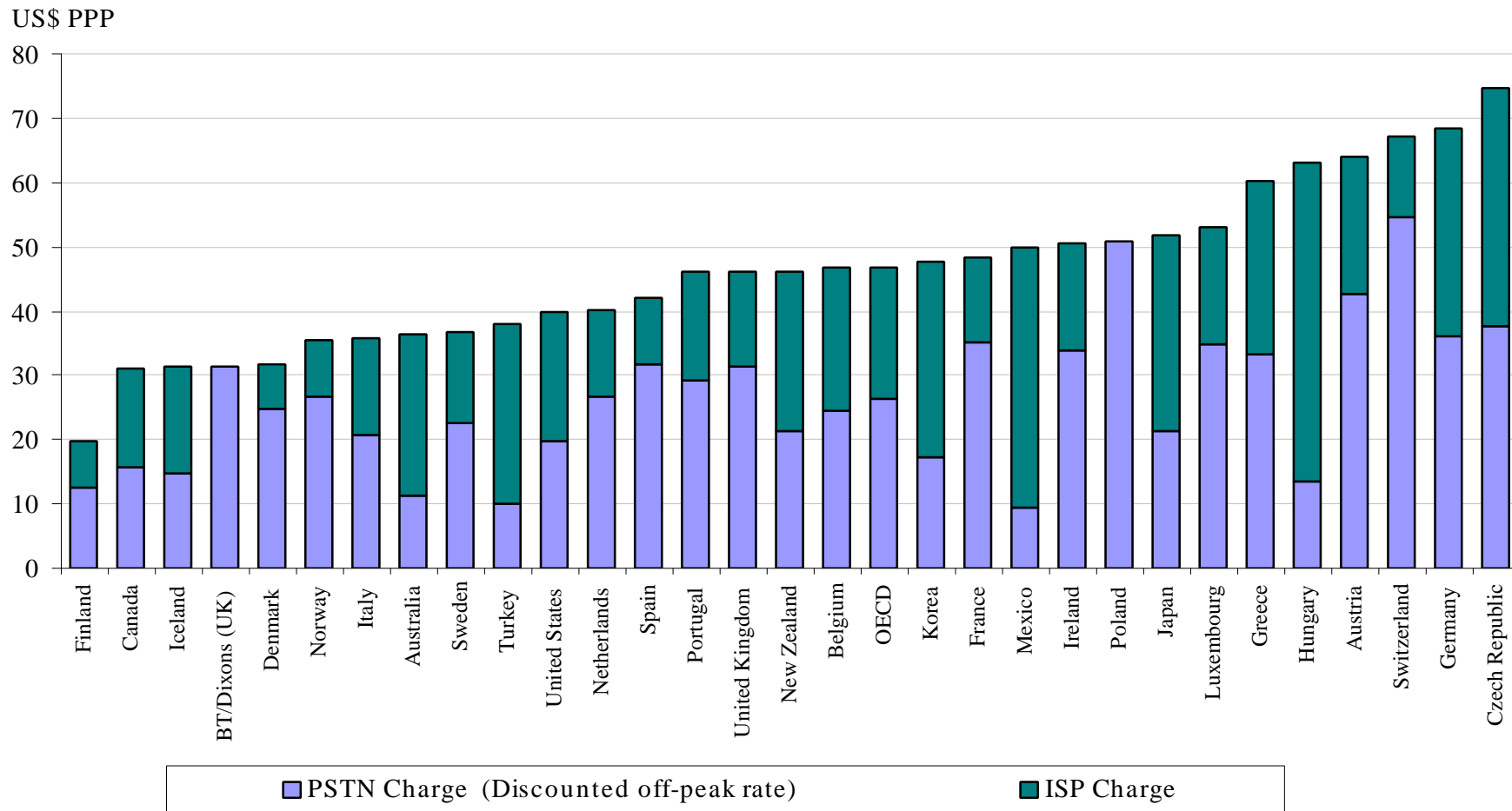
# OECD residential tariff basket

## August 1998



Note: Including tax. Calculation is based on PPP expressed in US\$.

# Off-peak rate Internet access basket, 1998, 20 hours per month



# How is the work structured?

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- Biennial work program
- Past telecommunication projects
  - » Universal Service, Satellite Communication Spectrum Allocation, Price Caps, Infrastructure Competition, Employment, Convergence, Accounting Rates, Numbering, Mobile Communication, Internet Pricing, Domain Names, Webcasting, Internet Traffic Exchange.
- Projects in 1999
  - » Infrastructure for Electronic Commerce, Convergence
  - » Biennial “Communications Outlook”
  - » 1999 Communications Outlook (Published March 16th and available on-line).
- Ongoing Tasks
  - » Telecommunication performance indicators
  - » Tariff comparisons

# What information is collected?

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- How does the OECD define the Communication Market?
  - » Public telecommunication networks and services
  - » Broadcasting and Cable Television
  - » Internet (Prices and available infrastructure measures)
- Regulation
- Services market
- Network dimensions & development
- Broadcasting
- Internet
- Communication tariffs
- Quality of service
- Employment and productivity
- Trade in communication equipment
- Communication Aid

# Data collection and sources of information

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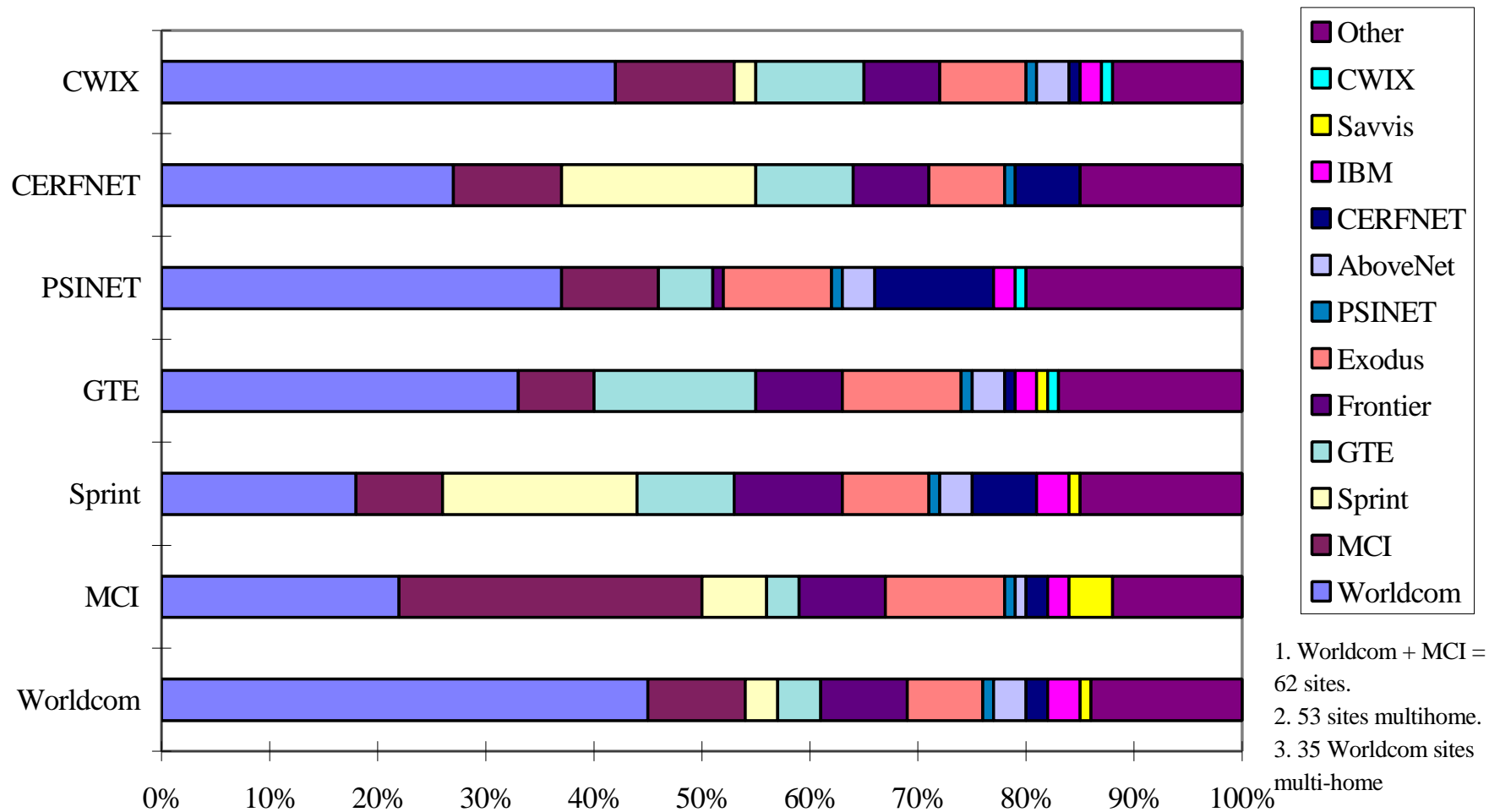
- Biennial “Outlook” questionnaire
  - » Delegations
- Tariff Data
  - » Operators via the Eurodata Foundation
- Ad-hoc project driven questionnaires
- Data exchange (accounting rates)
- Internet Home Pages
- Annual reports, company fact books & statistical supplements
- Company filings
  - » Financial Regulators (SEC - EDGAR)
  - » Regulators (e.g. FCC, OFTEL)
  - » Company Internet Home Pages
- Official publications (e.g. Canada, Finland)
- Industry associations (e.g. CTIA)
- International Organisations (ITU, Eurostat)
- Internet surveys such as Network Wizards, RIPE, Netcraft)
- Online tools for data collection

# If the ‘public Internet’ provided the “Hot Line”!

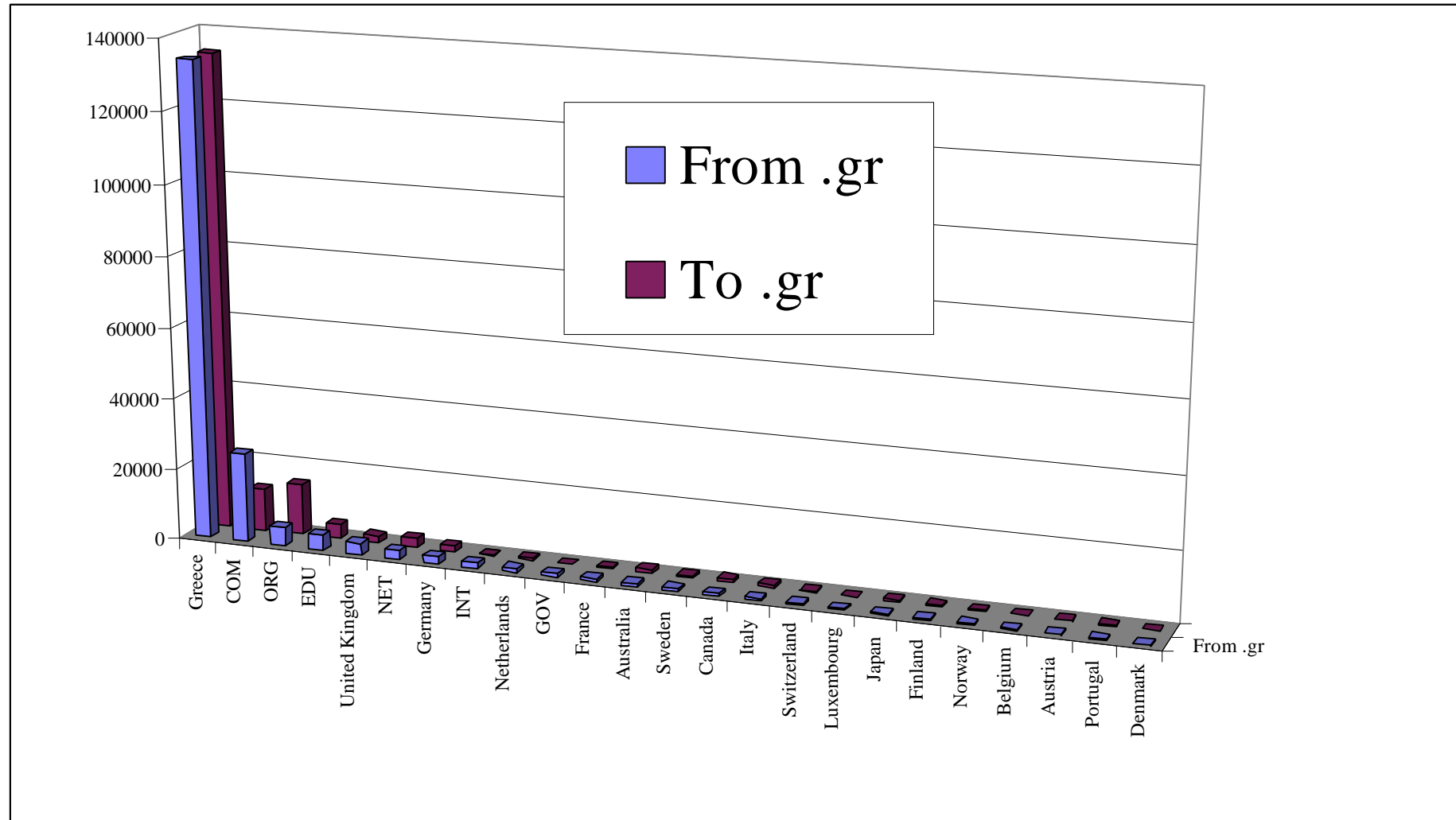
- 1 **www1.whitehouse.gov** (198.137.240.91)
  - 2 198.137.240.65 (198.137.240.65)
  - 3 198.137.240.34 (198.137.240.34)
  - 4 **ip1.ci3.herndon.va.us.psi.net** (38.25.11.1)
  - 5 **sc.southeast.us.psi.net** (38.1.25.1)
  - 6 38.1.4.6 (38.1.4.6)
  - 7 **tip1-mae-east.cwix.net** (192.41.177.182)
  - 8 **tip-7513-2-f11-0.cwix.net** (207.124.104.98)
  - 9 **blb-7513-1-h3-0.cwix.net** (207.124.105.78)
  - 10 **phy-7513-1-h9-0.cwix.net** (207.124.117.5)
  - 11 **nyd-7513-2-h4-0.cwix.net** (207.124.108.41)
  - 12 **lon-7513-2-a10-0-1.cwix.net** (207.124.108.62)
  - 13 207.124.116.70 (207.124.116.70)
  - 14 194.186.157.69 (194.186.157.69)
  - 15 194.186.157.73 (194.186.157.73)
  - 16 **cisco1.Moscow.ST.NET** (194.67.0.246)
  - 17 **MSK-M9-1-S1-0-1.iip.net** (195.178.192.65)
  - 18 **kremlin.fr.iip.net** (195.178.192.73)
  - 19 195.178.196.70 (195.178.196.70)
- (Kremlin Museumwebsite picture via [www.kremlinkam.com/](http://www.kremlinkam.com/))



# Traceroutes to Top 100 websites across US backbones, 1998



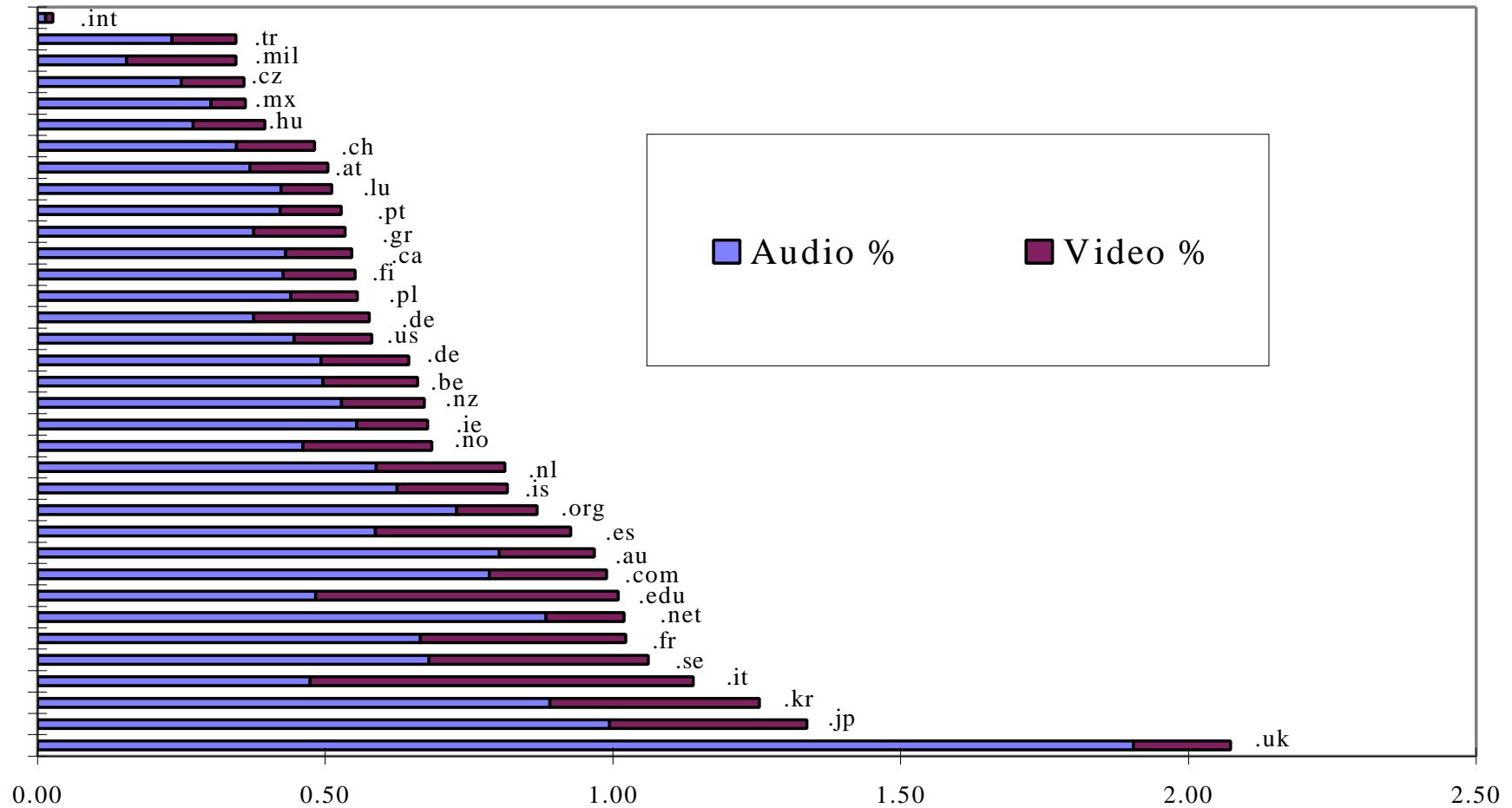
# WWW Links to and from .gr



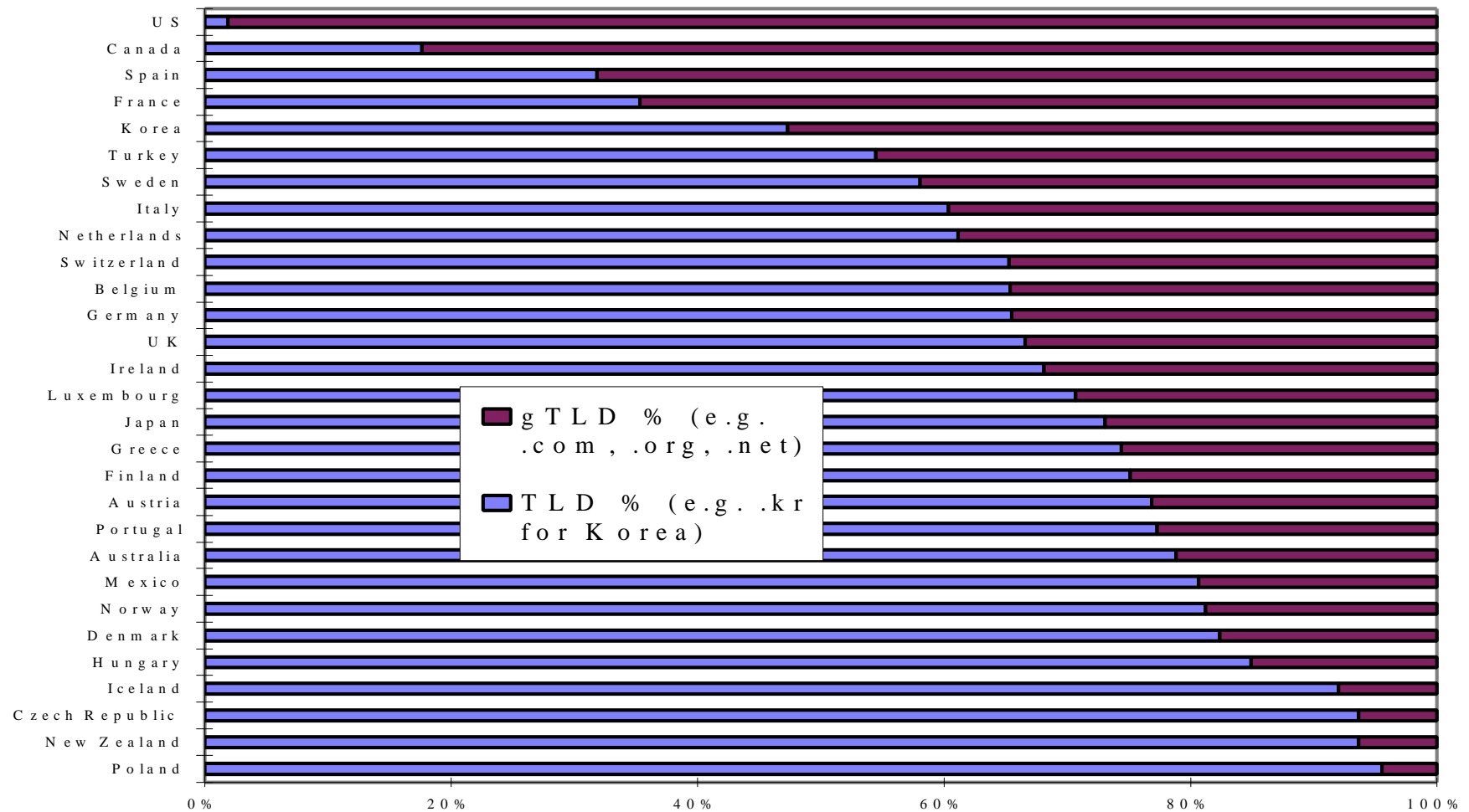


# Convergence and the Internet

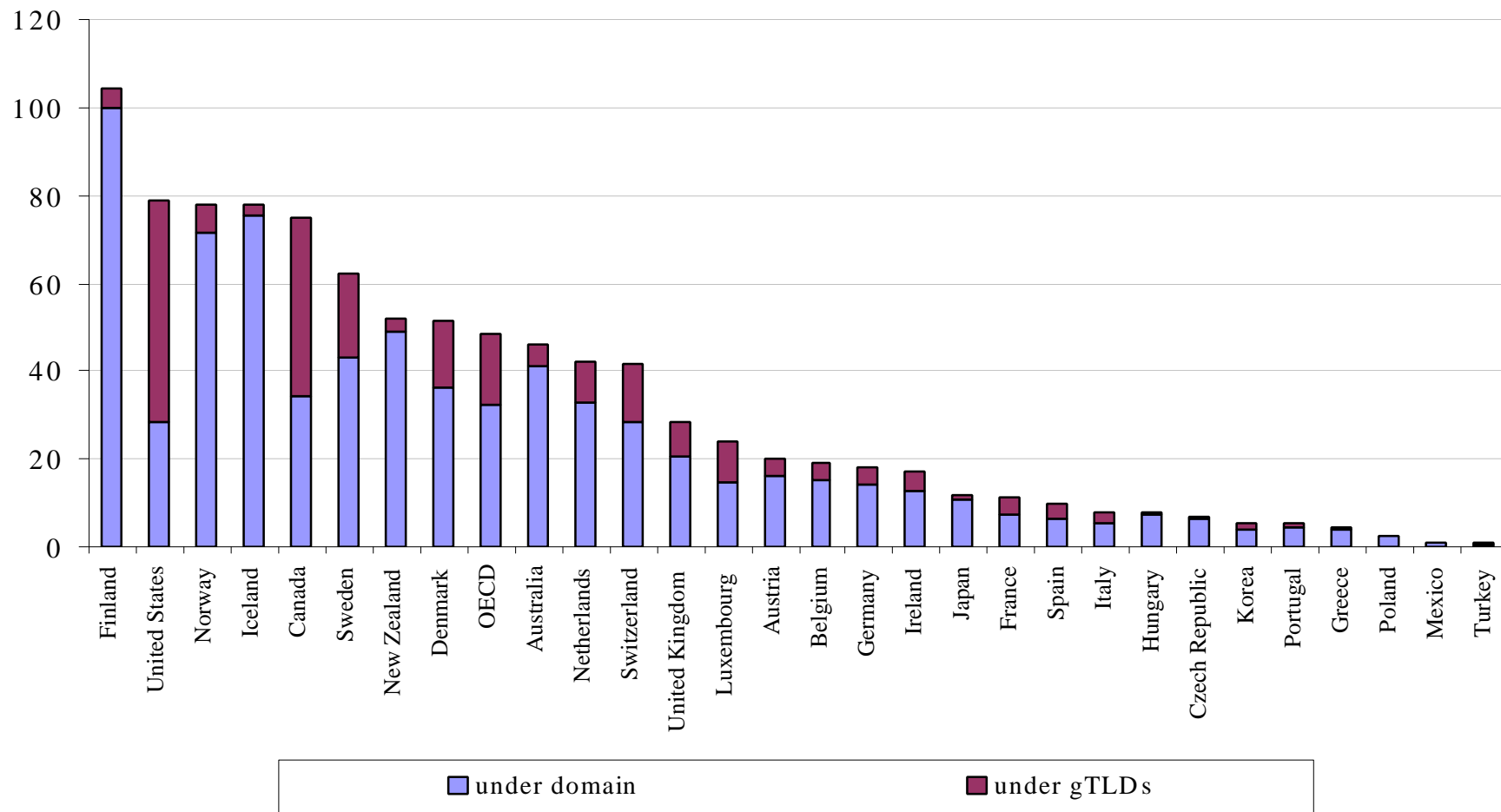
## Audio and Video applications on WWW under gTLDs and TLDs



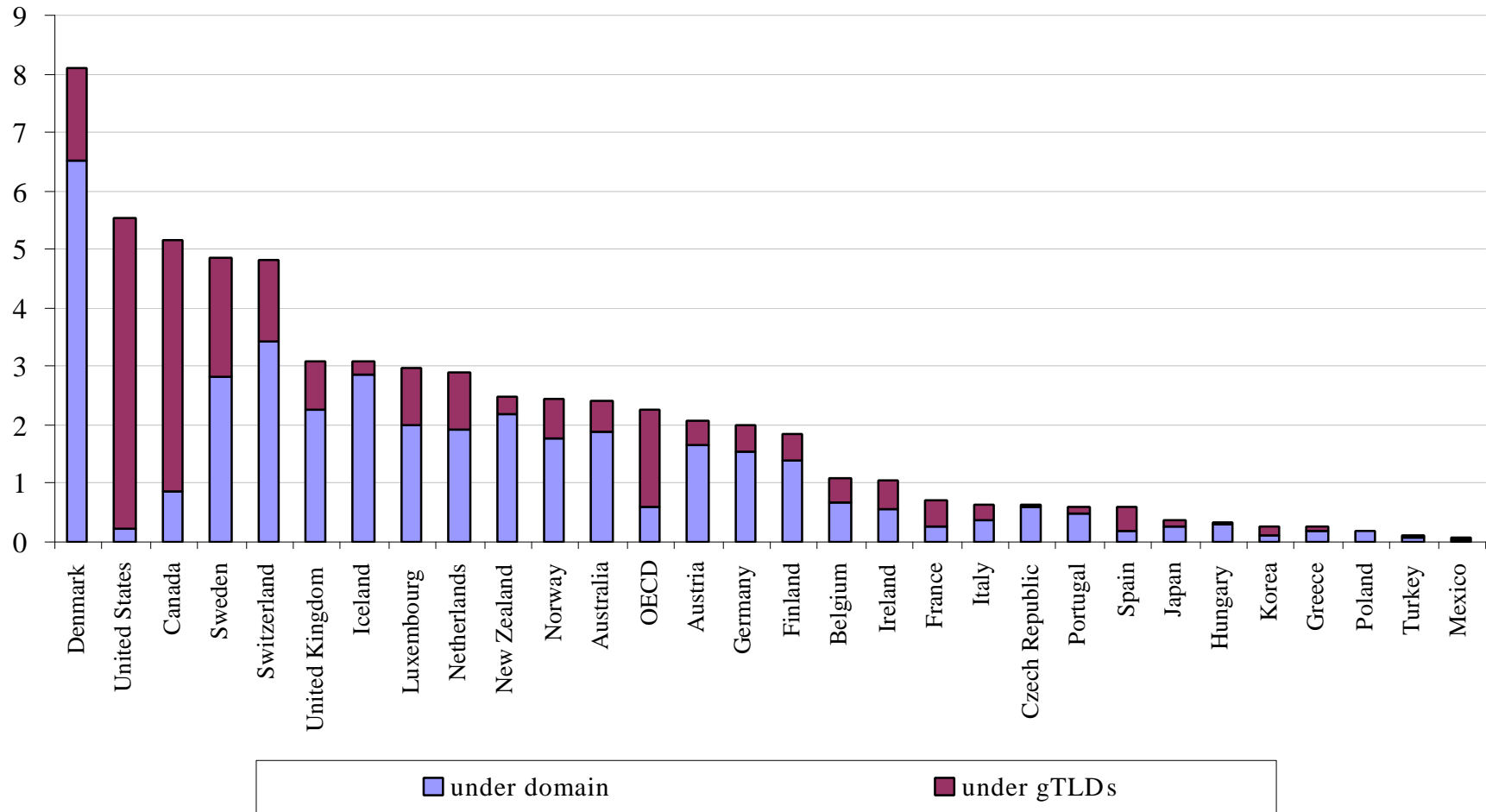
# Balance of gTLDs and TLDs



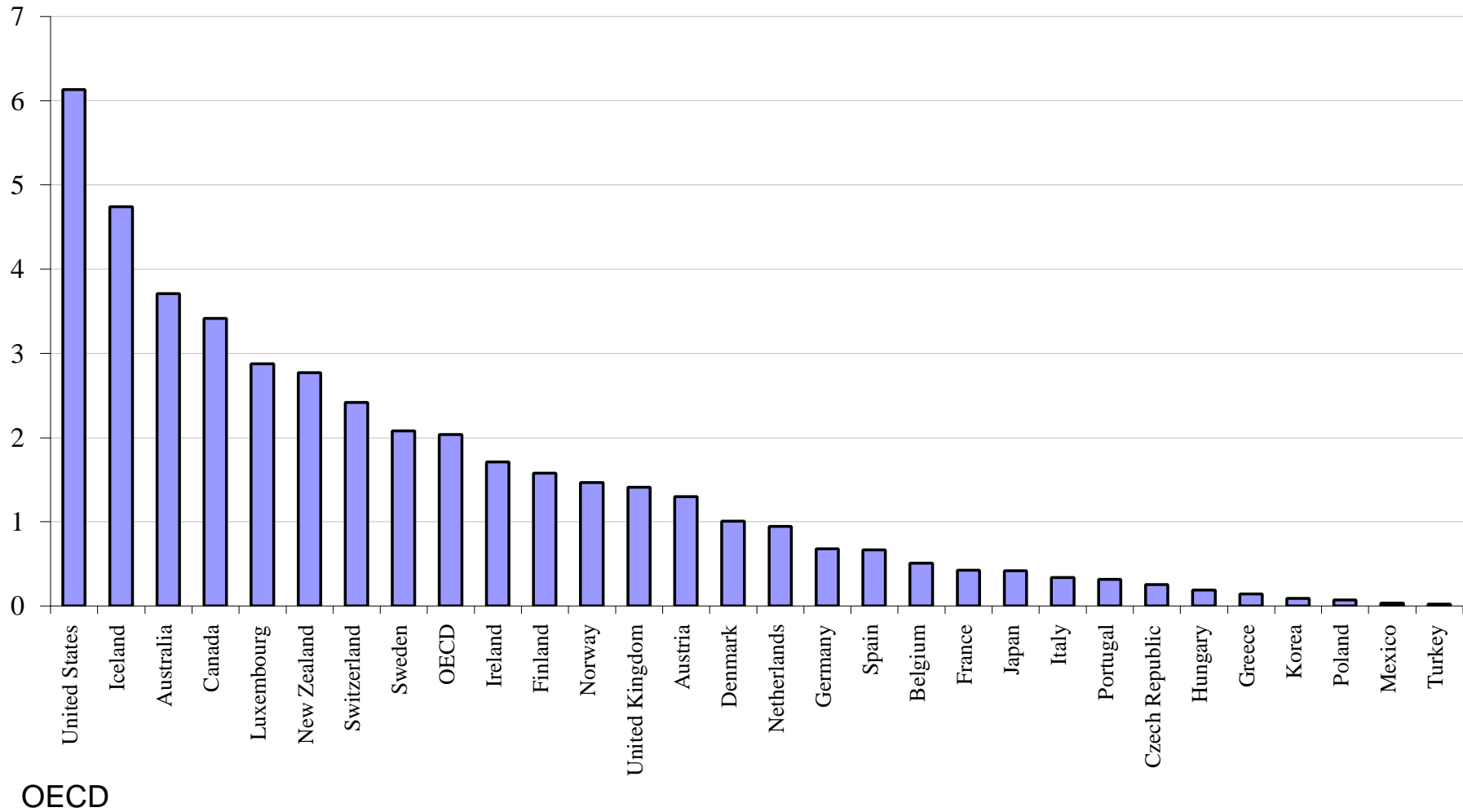
# Internet hosts per 1000 inhabitants July 1998 (including: .com, .net, .org), Source: Network Wizards, Imperative.



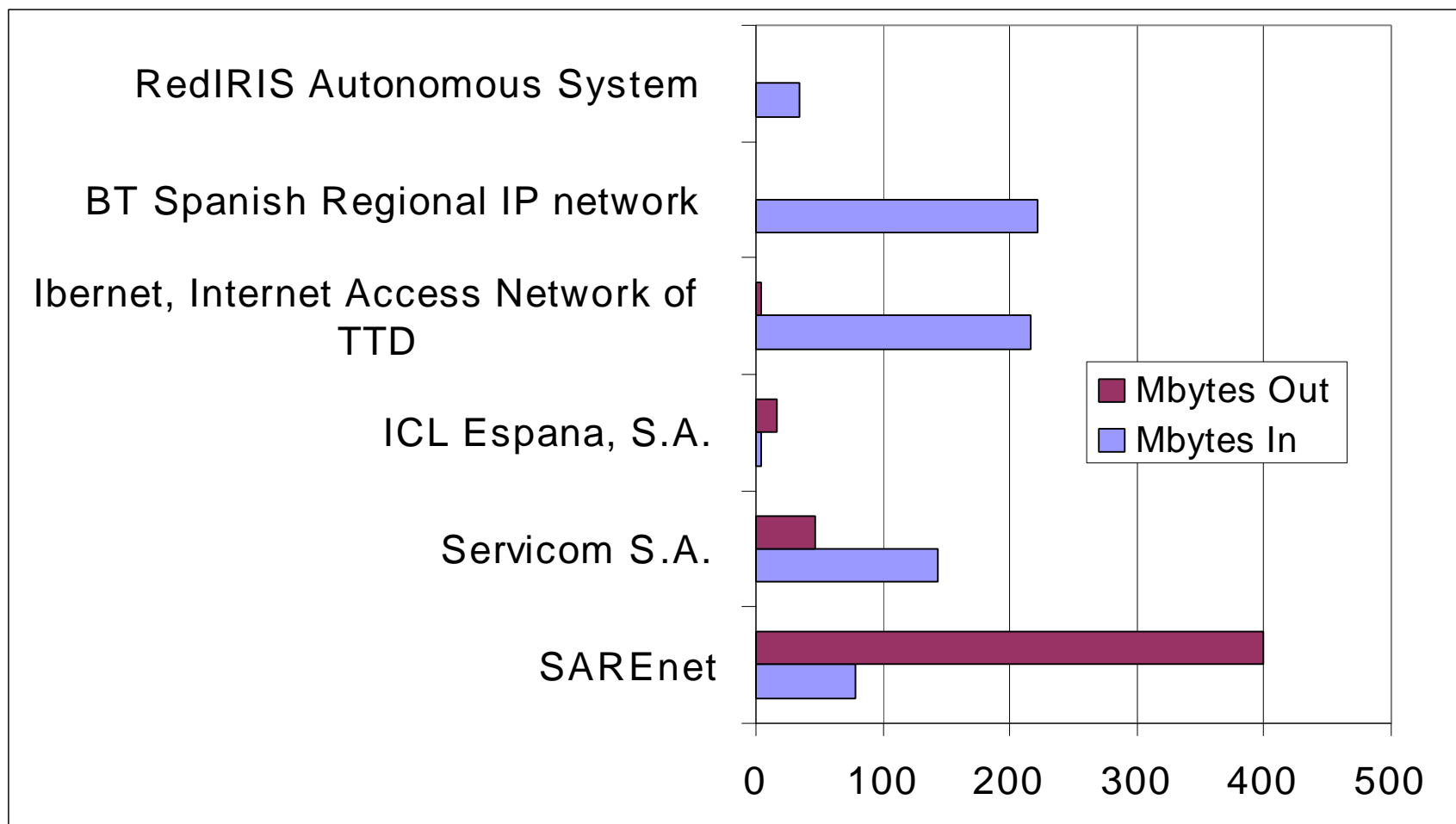
# Web Server Sites per 1000 inhabitants July 1998.(incl. .com, .net, .org), Source: Netcraft ([www.netcraft.co.uk](http://www.netcraft.co.uk))



# Secure web servers for electronic commerce per 100 000 inhabitants, August 1998 (Source: Netcraft)

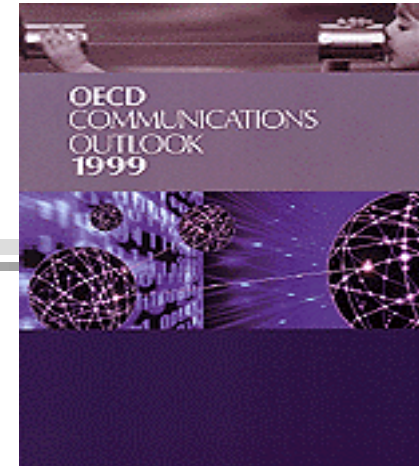


# Traffic Measures: Telstra traffic with Spanish ISPs (one day sample Feb'99)



# Some reference material

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- “Communications Outlook 1999”
- Telecommunication Database
- “Performance Indicators for Public Telecommunications Operators”, ICCP #22, Paris 1990.
- “Internet Infrastructure Indicators”
- “Internet Traffic Exchange: Developments and Policy”
- <http://www.oecd.org/dsti/sti/it/index.htm>







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**SOURCE: MR. A.S.W BANDUSIRI SILVA, TRC, SRI LANKA**

**TITLE: STATISTICS IN SRI LANKA & FUTURE DEVELOPMENTS IN  
TELECOMMUNICATIONS**

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**TELECOMMUNICATIONS REGULATORY COMMISSION  
OF SRI LANKA**

**For presentation  
at ITU World Telecommunication Indicators meeting  
29 March - 31 March 1999, Geneva, Switzerland and**

**Mr. A. S. W. Bandusiri Silva**

**Statistical Officer**

**Telecommunications Regulatory Commission of Sri Lanka  
276 Elvitigala Mawatha  
Colombo 08, Sri Lanka**

**E-mail [dgtsl@sl.t.lk](mailto:dgtsl@sl.t.lk) ; [bandusiri@hotmail.com](mailto:bandusiri@hotmail.com)**

**Fax: 94 1 689341**

**Voice: 94 1 689345**

## **Introduction**

Sri Lanka's National economic policy gives priority to infrastructure development. It recognizes telecommunications as a vital infrastructure element. Sri Lanka's National Telecommunications policy envisages further development of the telecommunications sector through private and public sector participation and competition.

The Sri Lanka Telecommunications Act, 25 of 1991, introduced regulation to the Sri Lanka telecommunications in 1991. The Office of the Director General of Telecommunications, the predecessor of the Telecommunications Regulatory Commission, was mandated with the following broad responsibilities:

1. Provide Policy advice and License recommendations to the Minister.
2. Maintain the spectrum resource in optimal condition as its sole manager.
3. Provide fair, transparent, prompt and effective decision processes to operators.
4. Ensure that the different parts of Sri Lanka's network work properly by assuring standardization.
5. Create safeguards to protect consumers from the exercise of market power and information asymmetries.

In order to achieve these objects the Commission has been given various powers including those to obtain information, approve and modify technical plans, and direct operators to give redress to customers. The Act gives the Commission power to make rules and regulations that can spell out in greater detail the regulatory regime.

The Sri Lanka Telecommunications Amendment Act of 1996 converted the Office of Director General of Telecommunications to the Telecommunications Regulatory Commission. The Commission comprises of three private sector members with security of tenure, representing the fields of Business, Finance and Law. The Secretary of the Ministry of Telecommunications serves as Chairman ex officio, and the Director General of Telecommunications who also serves as the Chief Executive Officer of the organization represent the public sector.

## **Statistics**

Sri Lanka Telecom (SLT) is the major supplier of fixed telephony. Suntel and Lanka Bell were licensed in 1996 to compete with SLT through the provision of fixed wireless local loop (WLL) connections. The major supplier of fixed telephony also provides wireless local loop connections within the 800 MHz band. Figure 1 shows the rapid growth of fixed access telephone connectivity in the past few years.

The country has four mobile telephony operators. Figure 2 shows the growth of mobile connectivity since 1991.

International data transmission is also a competitive sector with six providers (plus the specialized provider SITA). In addition there are six non

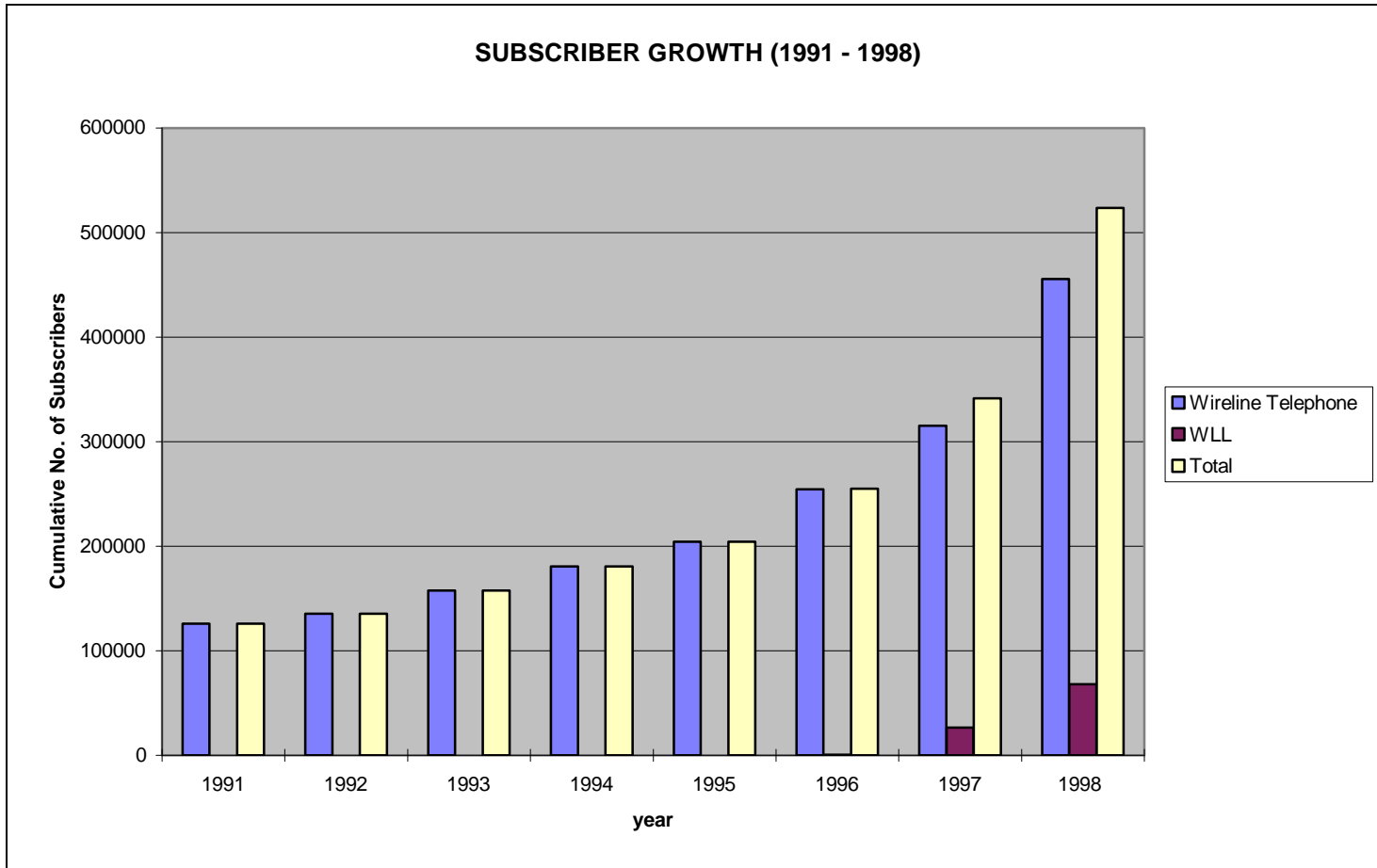
facilities based Internet services providers (ISPs) four of whom are not offering services.. Figure 3 shows the rapid growth of Data, Fax, Internet and E-mail subscribers in last three years.

There are five paging service operators. Figure 4 shows the growth of paging operators connectivity in the past few years.

There is one mobile trunk operator, a specialized infrastructure provider and the specialized private service provider (Air Lanka).

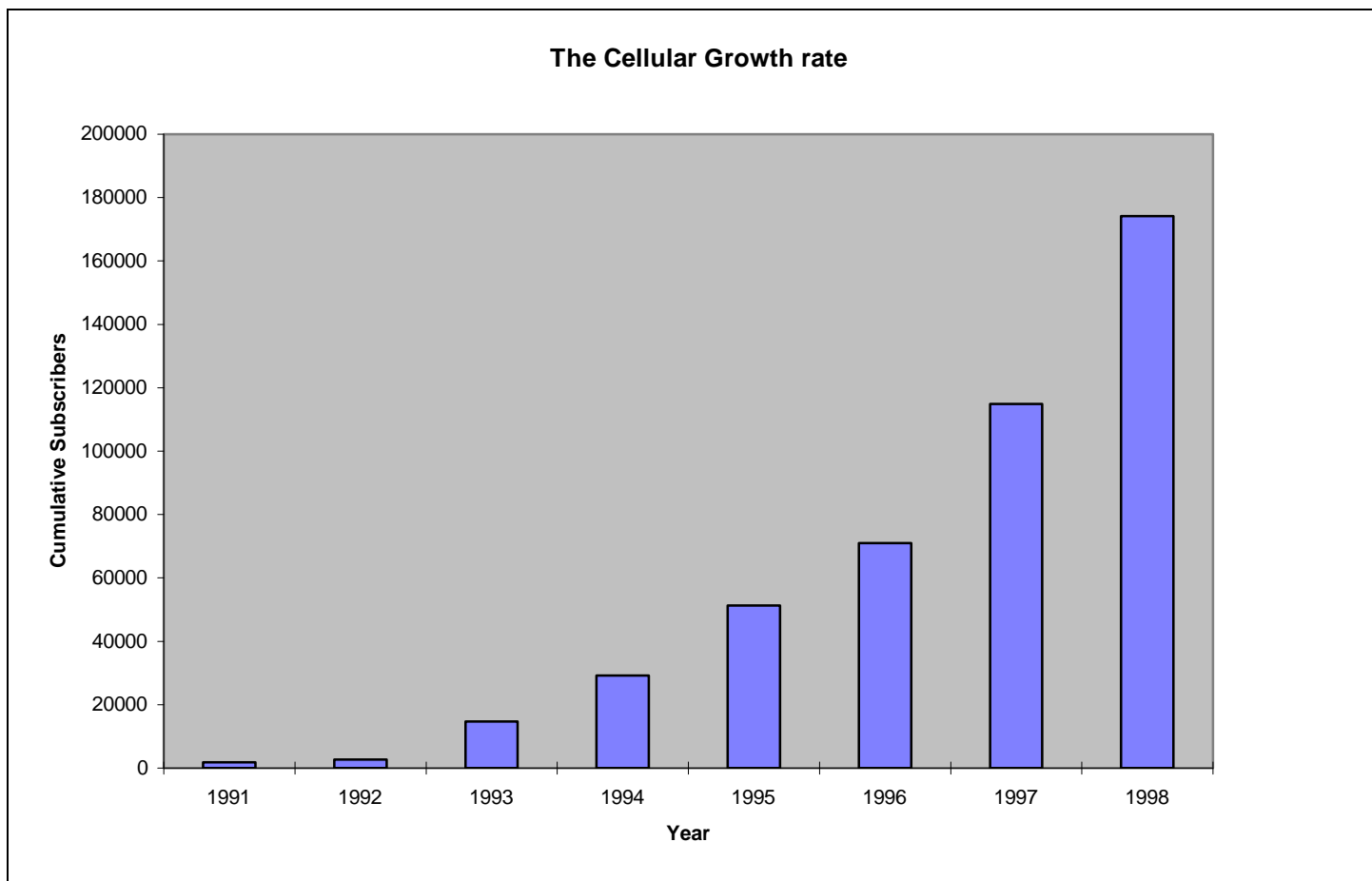
The Minister, on the recommendation of the Commission has licensed two payphone operators one of whom is not offering services. In addition to acting as a major player in this market with its network of coin telephones, SLT has authorized three payphone companies. Figure 5 shows the growth of the payphone sector.

Figure 1



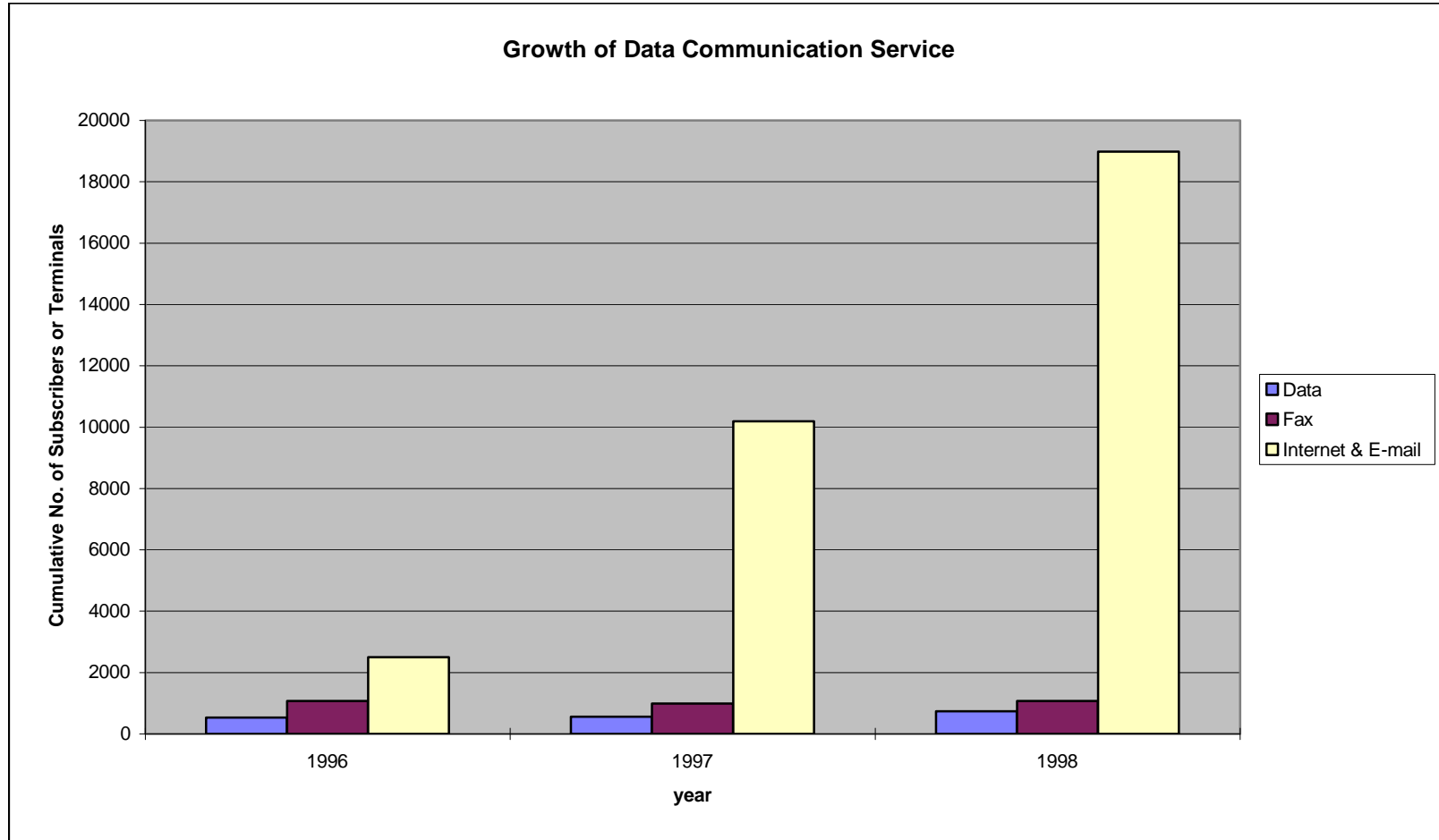
	1991	1992	1993	1994	1995	1996	1997	1998
Wireline Telephone	125834	135504	157774	180724	204350	254500	315241	455598
WLL						527	26381	67931
Total	125834	135504	157774	180724	204350	255027	341622	523529

Figure 2



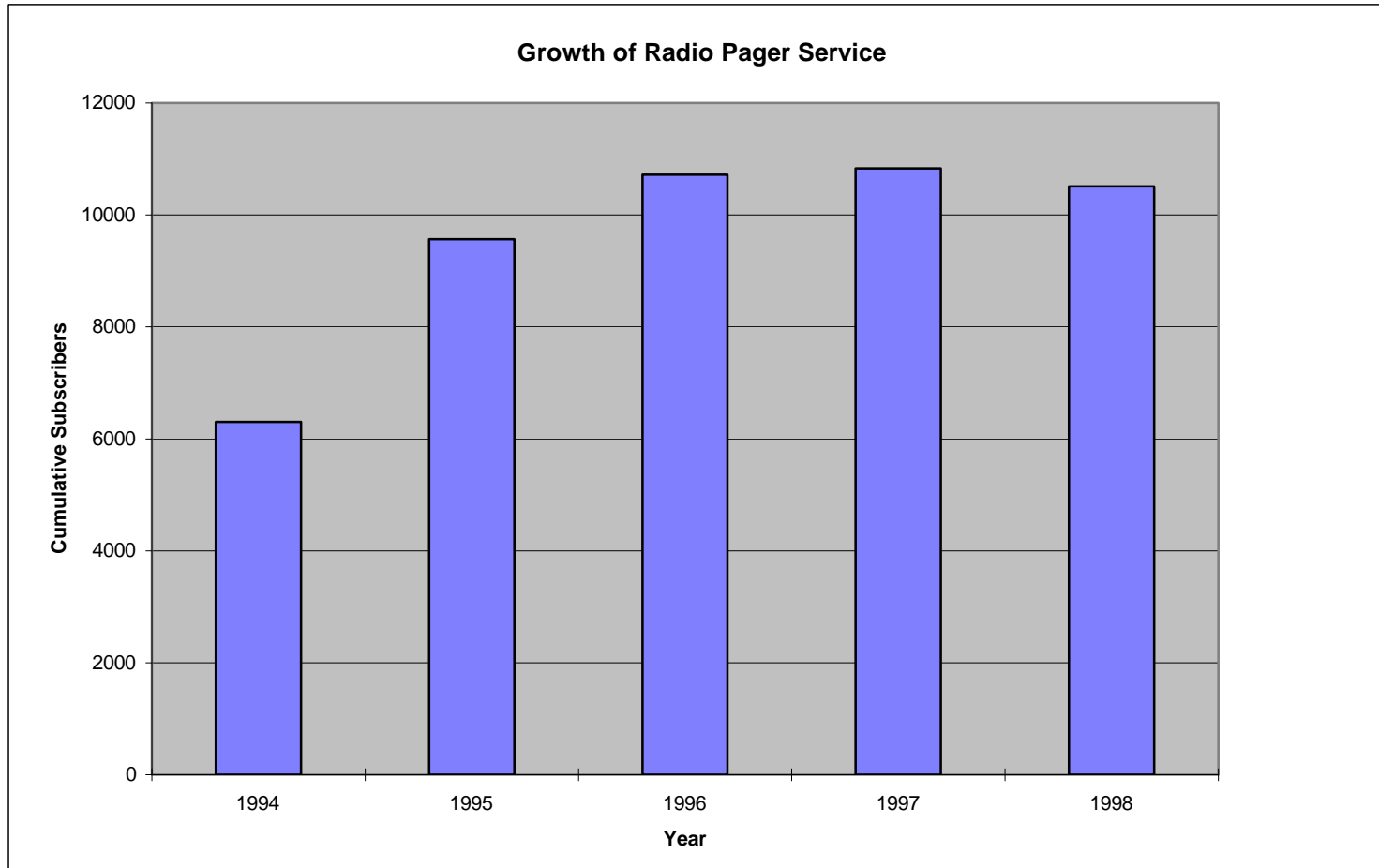
	1991	1992	1993	1994	1995	1996	1997	1998
Cellular	1800	2644	14687	29182	51316	71029	114888	174202

Figure 3



	1996	1997	1998
Data	534	561	736
Fax (Paid)	1072	989	1069
Internet & E-mail	2504	10195	18984

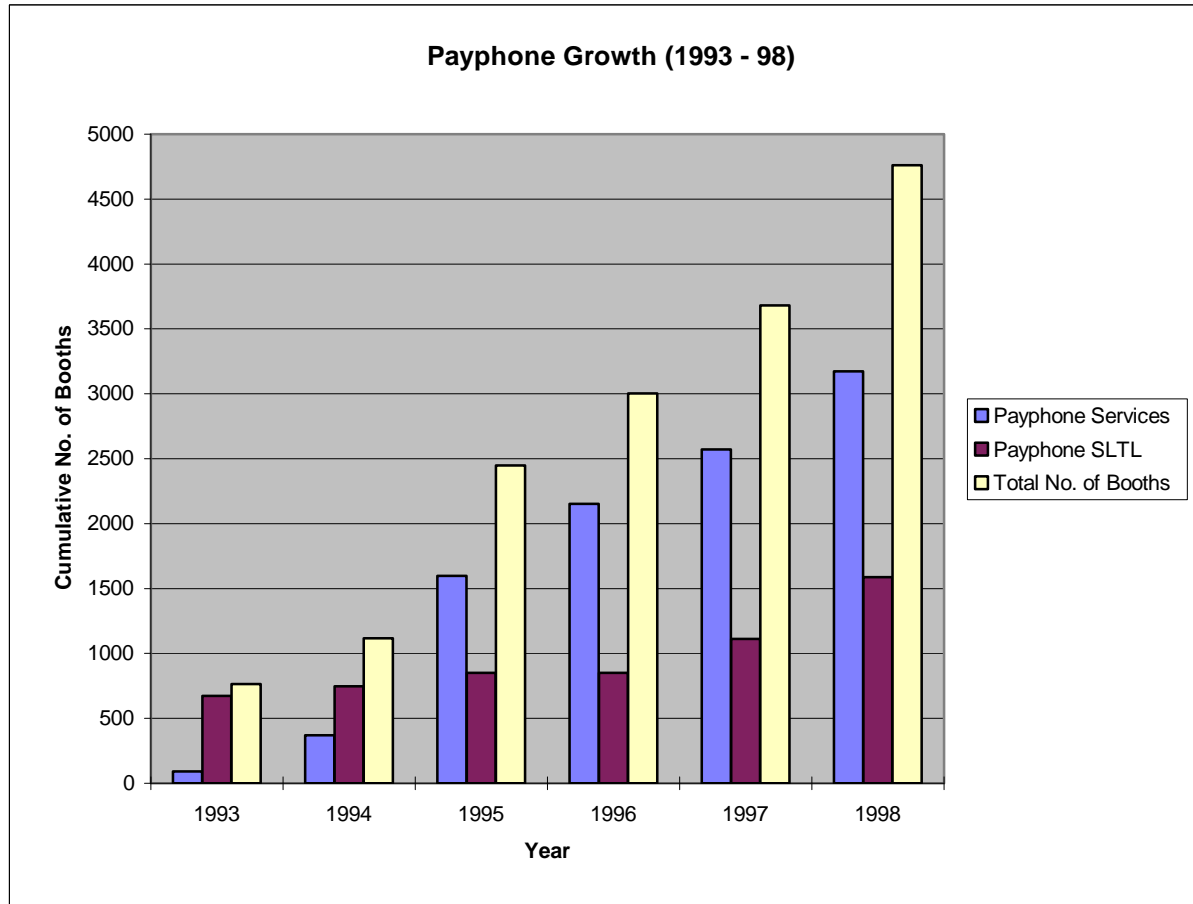
Figure 4



Year	1994	1995	1996	1997	1998
Pagers (Cumulative)	6302	9565	10721	10829	10511



Figure 5



	1993	1994	1995	1996	1997	1998
Payphone Services	91	371	1597	2152	2571	3174
Payphone SLTL	673	747	850	850	1111	1587
Total No. of Booths	764	1118	2447	3002	3682	4761

**TELECOMMUNICATIONS REGULATORY COMMISSION OF SRI LANKA**

**Telecommunications System Operators Licences**

<u>N°</u>	<u>Name of Licensee</u>	<u>Date of issue of licence</u>	<u>Period of licence</u>	<u>Address</u> <u>Telephone,</u> <u>Fax</u>
<b>Fixed Operators</b>				
1.	Sri Lanka Telecom.	08.08.1991	20 years	Sri Lanka Telecom Ltd., Lotus Road, Colombo 01. TP: 329711 Fax: 440000
2.	Telia Lanka (Private) Ltd.	22.02.1996	20 years	Suntel (Pvt.) Ltd., Colombo 02. TP: 074 - 747000 Fax: 074 - 748000
3.	Lanka Bell ( Pvt) Ltd.	26.02.1996	20 years	Lanka Bell (Pvt.) Ltd., 68, Bauddhaloka Mawatha, Colombo 04. TP: 075 - 335000 Fax: 075 - 330140
<b>Mobile Operators</b>				
4.	Celltel Lanka Limited	07.09.1995	13 years	Celltel Lanka Ltd., 163, Union place, Colombo 02. TP: 541541, 072 - 288888 Fax: 541145, 072 - 280565
5.	Lanka Cellular Services ( Pvt) Ltd.	11.02.1992	20 years	Lanka Cellular Services (Pvt.) Ltd., 175, Bauddhaloka Mawatha, Colombo 04. TP: 597549 Fax: 501677, 592640
6.	OTC Australia ( Pvt) Ltd.	11.02.1993	07 years	Mobitel (Pvt.) Ltd., 3rd Floor, 108, W A D Ramanayake Mw, Colombo 02. TP: 330550, 071 - 734422 Fax: 441904
7.	MTN Networks ( Pvt) Ltd.	28.09.1993	20 years	MTN Networks (Pvt.) Ltd., 475, Union Place Colombo 02. TP: 678688, 077 - 330159 Fax: 678703

	<b>Facilities Based Data Carriers</b>			
8.	Lanka Communication Services (Pvt) Ltd.	04.07.1991	20 years	Lanka Communication Services (Pvt) Ltd., 65C, Dharmapala Mawattha, Colombo 07. TP: 437545-6 Fax: 437547
9.	Electroteks (Pvt) Ltd.	05.11.1991	20 years	Electroteks Ltd., 429D, Galle Road, Ratmalana. TP: 633312, 637430 Fax: 605104
10.	Societe International Telecommunications Aeronautiques.(SITA )	06.08.1992	20 years	SITA, 06- 02 East Tower, 6th floor, World Trade Centre, Echelon Square, Colombo 01. TP: 448578 Fax: 345471
11.	Lanka Internet Service Ltd.	06.12.1994	20 years	Lanka Internet Services Ltd., 156 1/1, Walukarama Road, Colombo 03. TP: 075 - 335994, 071 - 738935 Fax: 565080
12.	Ceycom Global Communications Ltd.	19.09.1995	20 years	Ceycom Global Communication Ltd., 347A, Galle Road, Colombo 03. TP: 573749 Fax: 573752
13.	Itmin Ltd.	06.06.1996	20 years	ITMIN Ltd., P. O. Box 2151 Colombo 07. TP: 683948 Fax: 683945
14.	Millenium Communications( Pvt ) Ltd.,	11.08.1997	10 years	Milleneum Communication (Pvt.) Ltd., 146/2, Havelock Road, Colombo 05. TP: Fax:

	<b>Non Facilities Based ISPs</b>			
15.	Eureka Online ( Pvt) Ltd.	16.08.1996	10 years	Eureka Online (Pvt.) Ltd., 1, Alfred House Gardens, Colombo 03. TP: 347455 - 9, Fax: 598705
16.	Pan Lanka Networking ( Pvt) Ltd.	28.04.1997	10 years	Pan Lanka (Pvt.) Ltd., 26, Colling Wood Place, Colombo 06. TP: 596828, Fax: 074 - 514527
17.	Project Consultants International ( Pvt) Ltd.,	28.04.1998	10 years	Project Consultants (Pvt.) Ltd., Colombo TP: 439216 Fax: 439205
18.	DPMC Electronics Ltd.,	04.12.1998	10 years	DPMC Electronics 75 Hide Park Corner Colombo 2. TP: Fax:
19.	MTT Network (Pvt.) Ltd.,	27.01.1999	10 years	MTT Network (Pvt.) Ltd., 5th Floor IBM Building No. 48 Nawam Mawatha Colombo 02. TP: 01 - 441020 Fax: 01 - 441025
20.	Celltel Lanka Limited.	23.03.1999	10 years	Celltel Lanka Ltd., 163, Union Place Colombo 02. TP: 541541, 072 - 288888 Fax: 541145, 072 - 280565
	<b>Payphone Services</b>			
21.	The Payphone Company ( Pvt) Ltd.	09.12.1994	10 years	The Payphone Co. td ., 360, Union Place, Colombo 02. TP:341066 Fax:341068
22.	TSG Lanka Ltd.,	30.03.1998	10 years	TSG Lanka (Pvt.) Ltd., 451/A, Kandy Road, Kelaniya, Sri Lanka. TP: 910452 Fax: 910458

<b>Paging Services</b>				
23.	Infocom Lanka Ltd.	07.09.1992	10 years	Infocom Lanka Ltd., 70, D S Senanayake Mw, Colombo 08. TP: 597774, Fax: 597773
24.	Bell Communication Lanka ( Pvt) Ltd.	18.12.1992	10 years	Bell Comm. Lanka (Pvt.) Ltd., 26, Rotunda Gardens, Colombo 03. TP: 075 377779, Fax: 377778
25.	Fentons Ltd.	11.02.1993	10 years	Fentons Ltd., 350, Union Place, Colombo 02. TP: 448518, Fax: 448517
26.	Intercity Paging services ( Pvt) Ltd.	01.04.1993	10 years	Intercity Paging Services (Pvt.) Ltd., 65, Walukarama Road, Colombo 03. TP: 574371, Fax: 575729
27.	Equipment Trades Ltd	10.09.1993	10 years	Equipment Traders Ltd., 294 1/1 Galle Road, Colombo 04. TP: 503606, Fax: 500613
<b>Trunking Operators</b>				
28.	Dynacom Engineering ( Pvt) Ltd.	25.02.1993	05 years	Dynacom Electronic (Pvt.) Ltd., 451/A , Kandy Road, Kelaniya, Sri Lanka. TP: 910703 Fax: 910469
<b>Other Types of Licences</b>				
29.	Air Lanka Ltd.	06.12.1994	05 years	Air Lanka (Pvt.) Ltd., Colombo 01. TP: 073 - 5555 Fax: 073 - 5122
30.	MTT Network ( Pvt) Ltd.	08.05.1995	20 years	MTT Network (Pvt.) Ltd., 5th Floor IBM Building No. 48 Nawam Mawatha Colombo 02. TP: 01 - 441020 Fax: 01 - 441025





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**2<sup>nd</sup> World Telecommunication Indicators Meeting  
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**SOURCE: MR. MARTTI LUMIO, EUROSTAT, LUXEMBOURG**

**TITLE: EUROSTAT'S PROSPECTS ON TELECOMMUNICATION STATISTICS**

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EUROPEAN COMMISSION



STATISTICAL OFFICE OF THE EUROPEAN COMMUNITIES

Business statistics

Unit: D-3, Special sectors/ Martti Lumio  
Tel. (352) 4301-32234, Fax (352) 4301-34359

## **Eurostat's perspectives on telecommunications statistics**

In the telecommunications field, the EU Commission has carried out policies aiming at liberalisation of the market opening it for competition and promoting new technologies i.a. To evaluate the results and efficiency of the measures taken, statistics are needed, and providing those statistics is the basic reason for Eurostat to be active in this domain.

The production of statistics on communications in the EU is taking place in an environment which is quickly changing in many respects. The degree of competition in the industry varies across countries. Confidentiality problems are arising because what were public monopolies are now private sector enterprises which are dominant in their market sector. Telecommunications services are under rapid development and so should be the concepts and classifications applied in the statistics as well as the contents of the whole statistical description.

In spite of the changes, the annual data collection, data processing, dissemination of and provision of information services goes on, whilst meeting growing difficulties. The Eurostat databases are updated as far as the circumstances allow.

### **Work under way**

Eurostat receives statistics collected by Member States as part of the harmonised system of annual surveys on the structure of enterprises. In addition, there is a specific annual data collection and dissemination of information on telecommunications. The variables cover economy, infrastructure, employment and traffic. The data collected is registered in the COINS database, where it is used for production of publications, update of the New Cronos database and information services at request. This process, which used to be an annual routine, has become more time and resources consuming and it has produced less results year by year. Our present data collection concerns year 1997.

To establish working relationships with the 11 candidate countries and Mediterranean partner countries, a concise set of data was collected last year. The experience was very positive and we hope to engage those countries in permanent co-operation in the future.

A pilot survey of telecommunications services producers is under way in 7 Member States. The information collected covers the enterprise information specified by the Structural Business Statistics regulation, data on the telecommunications services defined according to the experimental Eurostat classification and some telecommunication specific variables. A comprehensive explanation of the methods used and problems encountered is expected by the end of this year.



Information concerning telecommunications is also included in many statistical systems in Eurostat, which are not specialised in this industrial activity. There are for instance structural business data, national accounts etc., which are not covered by this presentation.

## Central problems

### **Data availability**

In time it has become more and more difficult to get data on communications. Statistics on communications used to be produced by national governmental bodies, which were in charge of post and telecommunication services as well as administration in the field. When those institutions were transformed into enterprises, their administrative function was transferred to a new regulatory body, which tended to have neither interest nor resources to produce *public* statistics. On the other hand, most of the National Statistical Institutes have neither traditions nor resources in the field of communications statistics.

### **Confidentiality**

The situation is further complicated by the fact, that the previous monopoly operator holds a dominant position in the market even a long time after the liberalisation resulting in confidentiality problems. Confidentiality problems have a twofold effect. First they make it difficult to get data, as stated in the previous paragraph. Second, if data are supplied, they cannot be published on a level, which would reveal information on an individual company. Often this is the case already on the national level with one operator dominant in the market.

## Possible improvements

### **Organisational aspects**

For Eurostat, the national statistical institutes (NSI) are the usual partners in production of the statistics for needs of the Union. Together they form the European Statistical System (ESS), which generally works quite effectively, especially when the responsibilities are clearly defined. In the case of telecommunications statistics, however, the statistical authorities lack the experience in the branch and the data for the COINS database is collected on a voluntary a basis. The NSIs are also generally faced with resource cuts, which makes it very difficult to start new statistical systems. On the other hand, the earlier producer of telecommunications statistics has a good tradition and know-how, but not necessarily any will to make information public. The regulator also has some valuable numeric information. Eurostat would now like to engage the statistical institutes and regulators in discussion with each other to clarify responsibilities and find resources to have statistics on one of the most dynamic activities in the modern society. Some good examples can be shown to prove this is possible.

### **Confidentiality**

The traditional way to deal with confidentiality problems is to disclose data only at summary levels high enough to prevent unit level sensitive information from being identified. At the EU level this could be solved by the EU receiving confidential data and publishing country aggregates where publication of individual country data was not possible. At the country level, one solution could be for authorisation to be given

by enterprises for publication of industry aggregates, perhaps linked to embargoes on the release of recent data.

### **Methodological development, manual**

Many new materials have been or are about to be produced, giving the possibility to build up a common coherent framework for EU statistics on telecommunications. The SBS-regulation, the Short-Term Statistics regulation and the pilot study of telecommunications services in seven of the Member States were already mentioned. However, some essential parts of the framework are still missing or are out of date. The new products available in the market should be defined, assessing their groups in the standard CPA (Classification of Products by Activity) classification of commodities and eventually produce a suggestion for modifying the CPA for the telecommunications services. In the work, experience gained from the pilot survey should also be exploited. The system of data collection, the variables to be collected and the timing in the production process should be reviewed. To support those working in this field of statistics, it is necessary to collect together the various contributions to methodologies in telecommunications statistics into a methodological manual, which can serve as a coherent framework for the producers of the statistics. Our user need study will shed light on the preferences of users.

In a situation of scarce resources in the statistical services, we are hoping to raise the interest of experts in telecommunications enough to engage themselves in the conceptual work. It should be noted that the Fifth Framework programme on Research and Development is at its starting stage, and “Creating a user friendly Information Society” is a central theme. Thus this is an ideal moment for national authorities to launch projects with other European partners related to the subject.