



International Telecommunication Union

Regulating the Internet

Laura Männistö, ITU

CTO Event M128

**The Development of National and
International Regulation**

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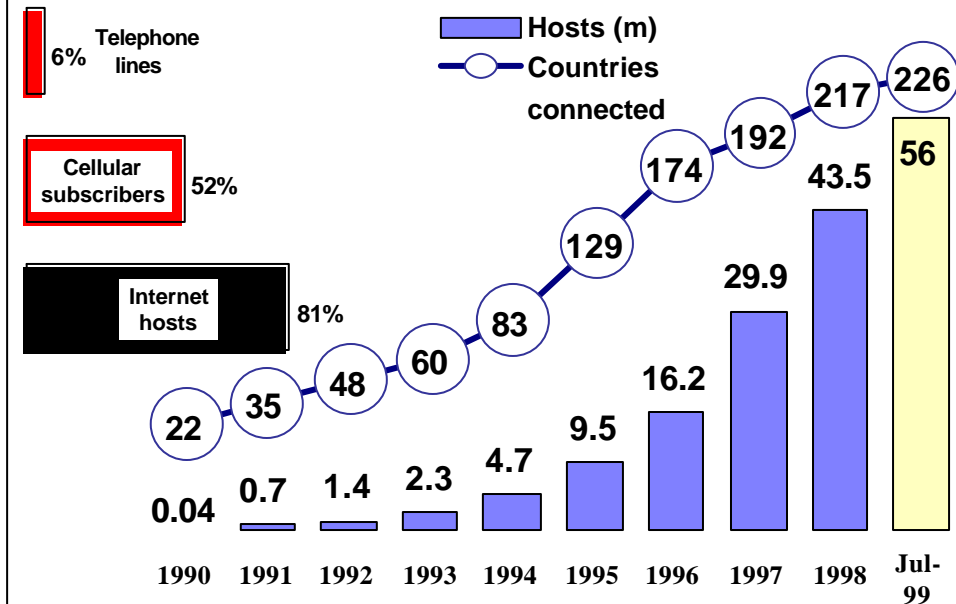
Note: The views expressed in this paper are those of the author and may not necessarily reflect the opinions of the ITU or its membership. The author can be contacted at Laura.Mannisto@itu.int.



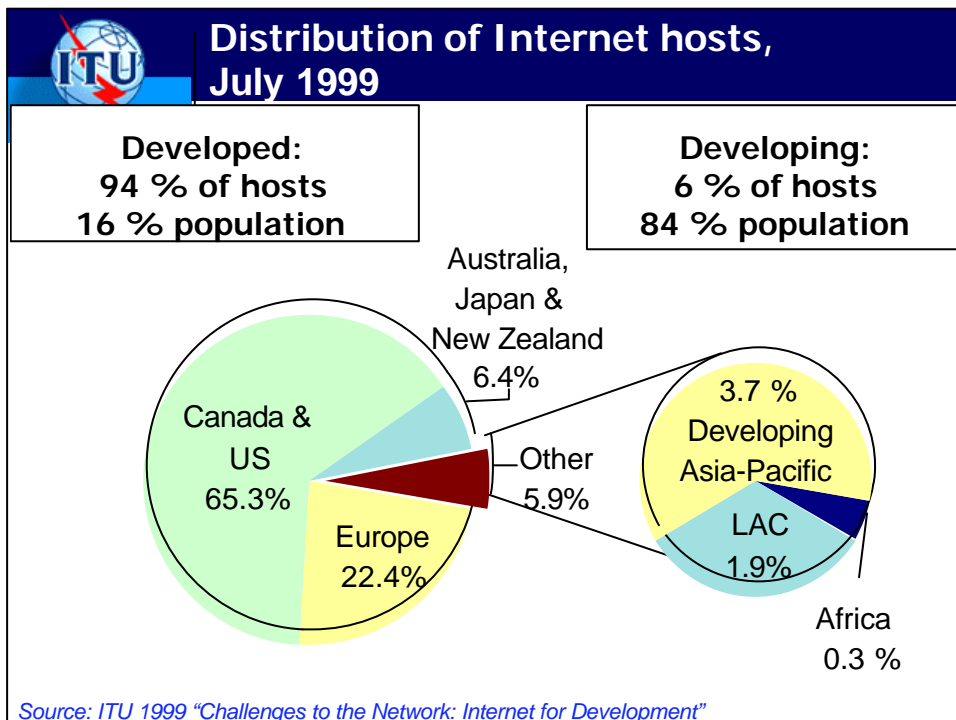
Agenda

- **The Internet phenomenon**
- **Issues of Internet regulation**
- **Regulation of e-commerce**
- **Conclusions**

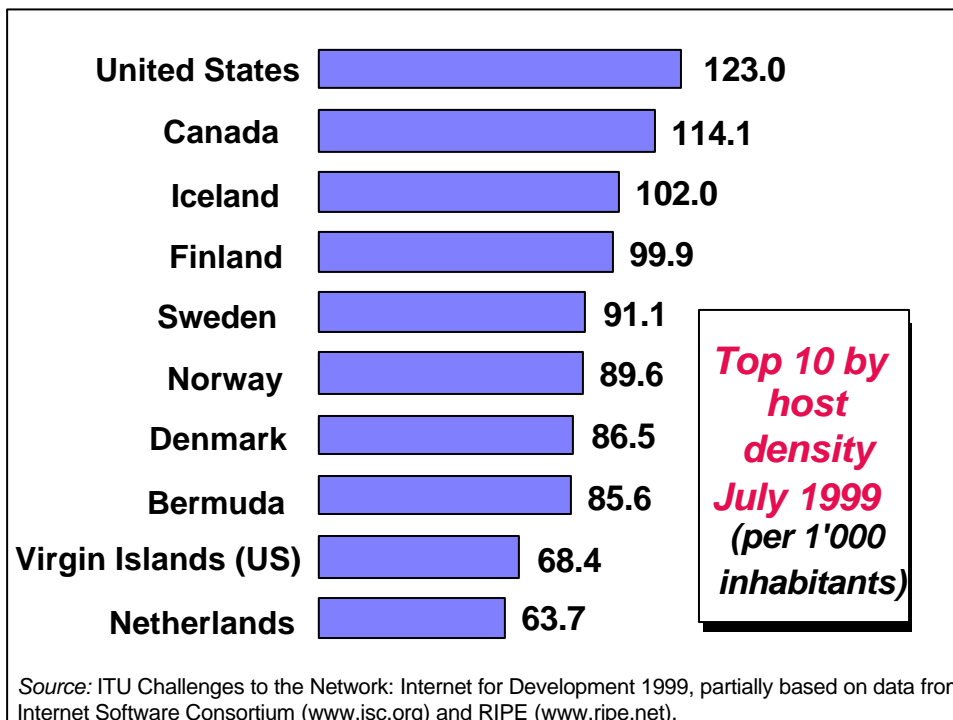
Internet hosts (million) and growth rates, 1990-99



Source: ITU Challenges to the Network: Internet for Development 1999, partially based on data from Internet Software Consortium (www.isc.org) and RIPE (www.ripe.net).



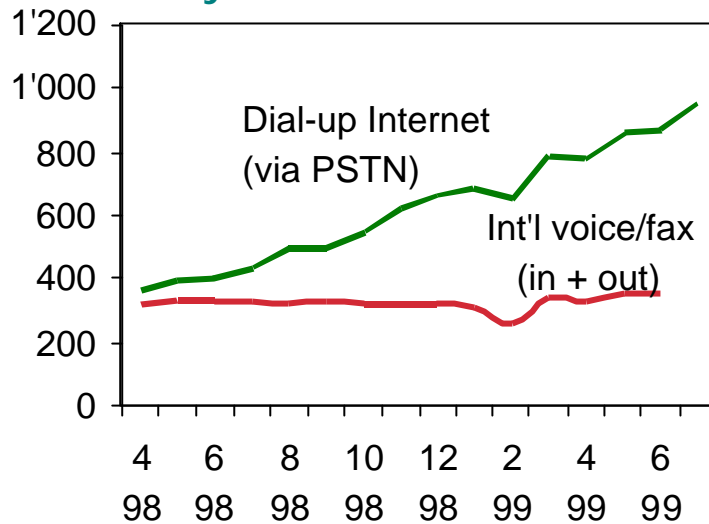
Source: ITU 1999 "Challenges to the Network: Internet for Development"



Multimedia access									
Over-all Rank		Telephone main lines per 100 people		TV sets per 100 people		Internet hosts per 10'000 people		Cellular mobile subscribers per 100 people	
	Economy	1998	Rank	1998	Rank	1998	Rank	1998	Rank
1	United States	64.37	10	84.73	3	941.35	1	25.60	16
2	Finland	55.39	19	64.03	9	891.67	3	57.18	1
3	Norway	66.01	7	57.90	18	793.57	5	47.39	3
4	Denmark	65.97	8	56.87	19	743.16	6	36.44	6
4	Sweden	67.37	6	53.12	22	661.73	7	46.40	4
6	Luxembourg	69.17	4	61.92	13	290.77	19	30.80	12
7	Canada	63.50	11	71.49	5	853.83	4	17.56	31
8	Bermuda	83.95	1	103.13	1	630.75	8	12.47	43
9	Switzerland	67.54	5	53.55	21	507.84	10	23.52	19
10	Australia	51.21	24	63.89	10	482.60	11	28.82	14
11	United Kingdom	54.49	20	64.22	8	340.58	16	25.23	17
12	Netherlands	59.31	13	54.34	20	507.97	9	21.29	21
13	Japan	47.91	28	70.70	6	146.79	27	37.44	5
14	Iceland	64.65	9	35.59	51	924.52	2	33.14	10
15	Hongkong SAR	55.77	18	43.13	41	346.80	15	47.47	2

Source: ITU Challenges to the Network: Internet for Development 1999, Internet host data partially based on data from Internet Software Consortium (www.isc.org) and RIPE (www.ripe.net).

Internet traffic overtaking int'l voice traffic Hongkong-China, monthly minutes of use, April 1998-July 1999



Source: ITU, TeleGeography Inc., "Direction of Traffic, 1999", OFTA.
Note: Excludes Internet access from leased lines.



Should the Internet be regulated?

o Opposing views:

1 Internet is a *new method* of communicating and doing business

- Internet should be treated like any other industry and, if necessary, it should be regulated.

2 Internet is a *special case*

- Should operate and function without government interference.



To regulate or not to regulate?

- Four possible approaches
 - Statutory control
 - Independent regulation
 - Self-regulation
 - no regulation at all
- But *regulate or not* may not be the right question; ask instead:
 - which aspects of the Internet do require regulation and which do not?



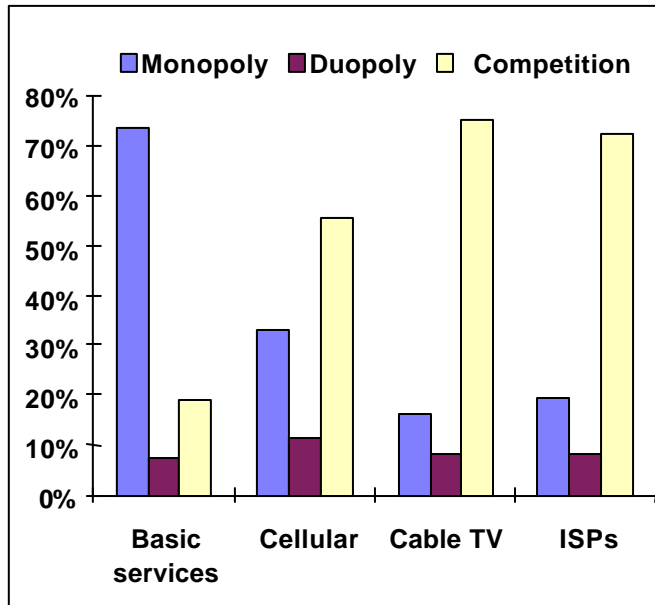
Which aspects of Internet demand regulatory monitoring?

- *Regulatory monitoring* is desirable to remove barriers to Internet development, including:
 - the cost of services
 - retail pricing for Internet services, local calls, availability of flat-rate access etc.
 - wholesale pricing on IP backbone, international and domestic leased lines
 - basic infrastructure
 - e.g. promotion of IP infrastructure



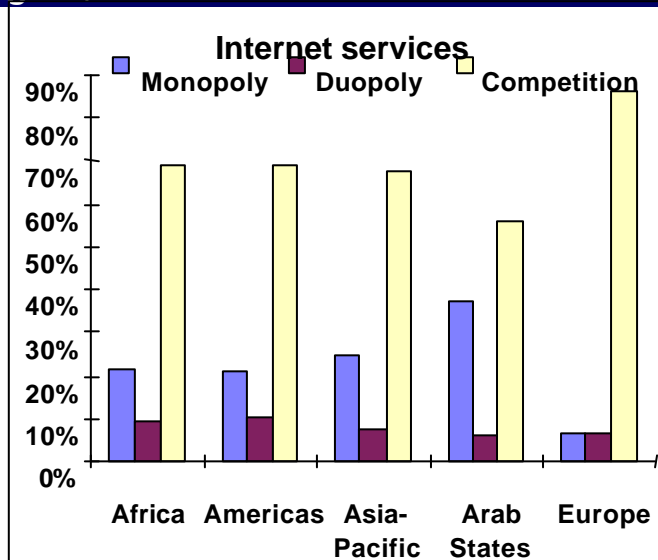
Competition in ISP markets compared to other markets, 1999

- 81 % of countries allow competition in Internet markets in 1999
- In more than 73 % of cases there are three or more ISPs



Competition in Internet services, by region, 1999

- Least competition in Arab States: 62% of countries
- Most competition in Europe: 93% of countries
- In Americas, Asia-Pacific & Africa some 80 % of countries allow competition

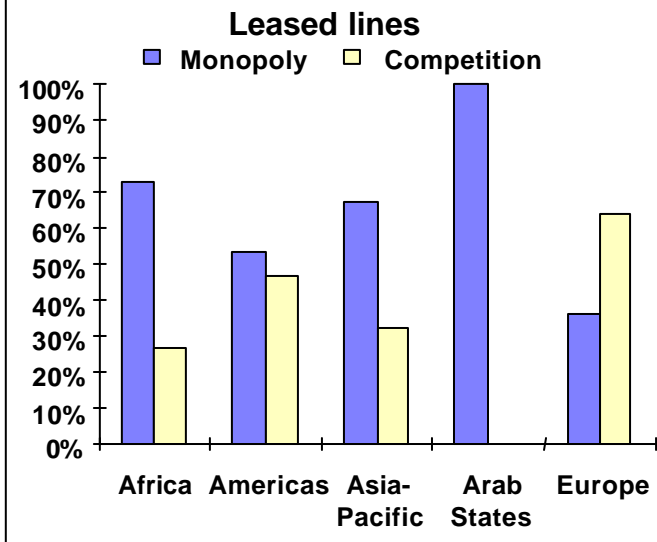


Source: ITU Trends in Telecommunication Reform: Convergence and regulation 1999



Competition in leased lines, by region, 1999

- Despite the competition in ISP markets, prices remain high because of the lack of competition in leased line supply.
- 60 % of the leased line markets remain under monopoly control

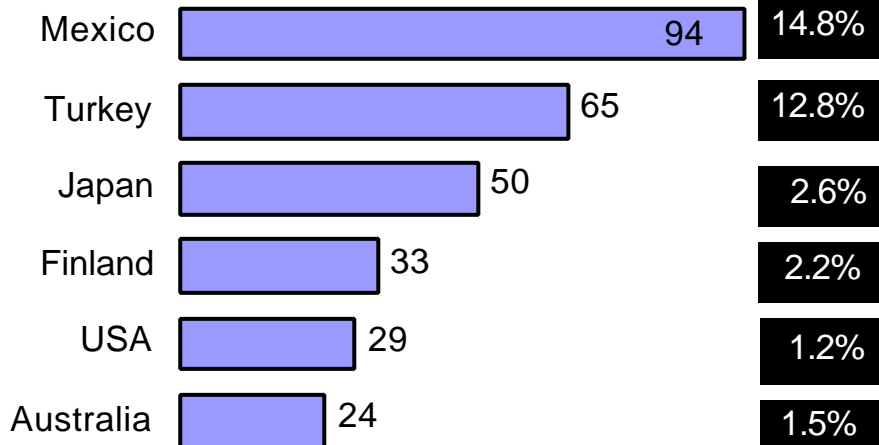


Source: ITU Trends in Telecommunication Reform: Convergence and regulation 1999

The relative cost of services

OECD, Internet monthly access charge, US\$

As % of GDP per capita



Source: ITU 1999 "Challenges to the Network: Internet for Development"



Restrictions in Internet Service Markets

- Transmission supply side
 - *National level:* Lack of competition in the leased line market
 - *Global level:* Due to concentration, the IP Backbone market remains much less competitive than the retail side
- Services side: e.g. IP telephony
 - Almost 90 ITU Member States have banned call-back and may restrict IP telephony



Why should developing countries not ban IP telephony?

- Because the shift of traffic away from the PSTN to the Internet may be delayed, but not prevented in the longer run.
- Because IP is likely to form the backbone for integrated voice/data services in the future
- Main issue:
 - NOT: to defend existing revenue streams
 - RATHER: to compete for new ones.
- With short-term regulatory protection in their existing markets, developing countries may be less eager, and less-well prepared for competing for new opportunities.



What are the regulatory approaches to IP telephony?

- **United States:** IP telephony is considered information service, thus unregulated
- **European Union:** ISPs are considered information and value-added telecoms service providers, thus currently unregulated
- **Others:**
 - Many still undecided: e.g. Peru, Chile, Mexico, Venezuela, Bolivia and Brazil,
 - Others ban it: e.g. Argentina, India, some Eastern European countries, etc.



Internet-related Regulatory Issues

- Interconnection
- Spectrum management
- Licensing
- Competition policy
- Price regulation
- Universal access

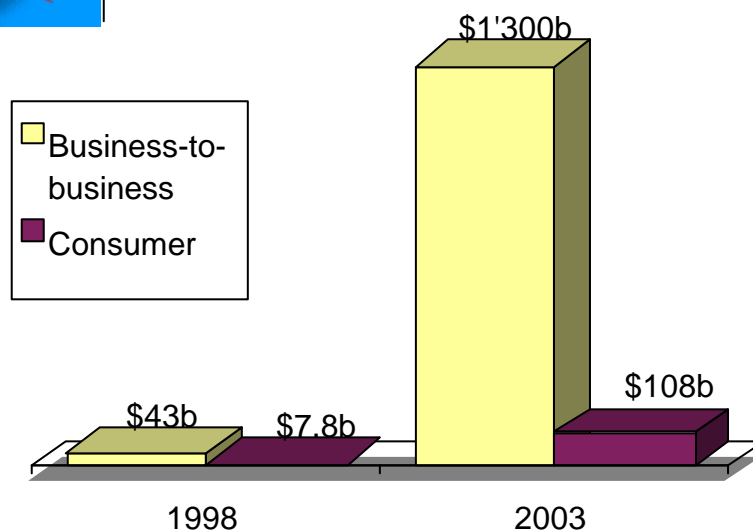


IP Telephony Regulatory concerns: national

- Should IP Telephony Providers be licensed?
- Should they be subject to the same regulatory regime as other telephony providers?
- Should they pay for interconnect with the telephone network at retail or wholesale rates?
- Should they be required to contribute to universal service obligations?
- Should they be subject to broadcasting regulations? (e.g., on advertising, decency, content filtering etc)
- Should their operations be taxed?



E-commerce forecast 1998-2003 In billions (US\$)



Source: Forrester Research, Inc. 1999



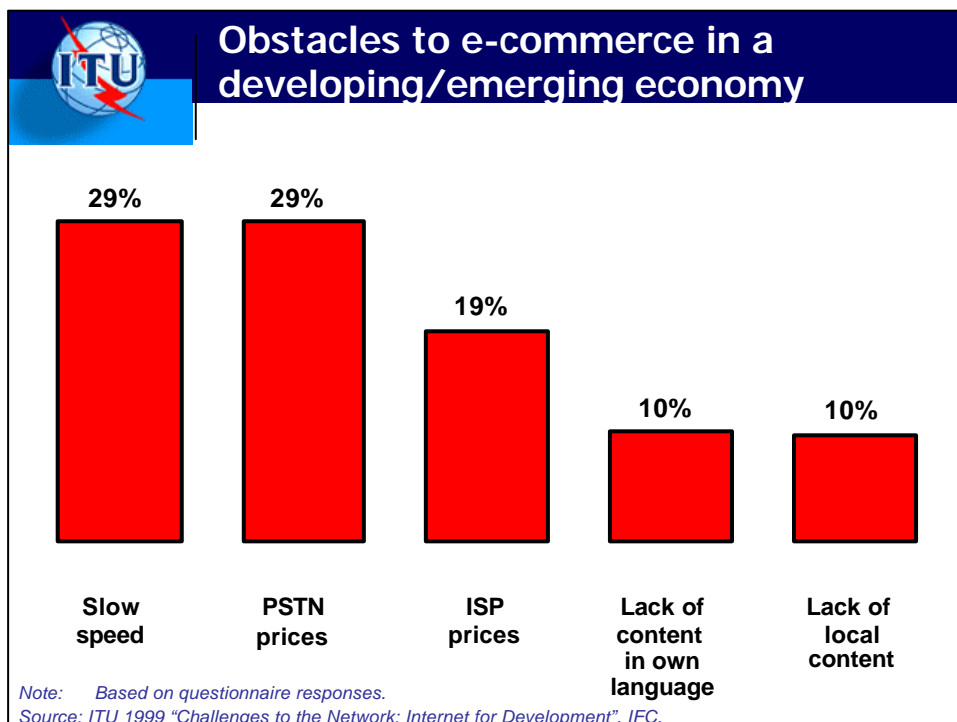
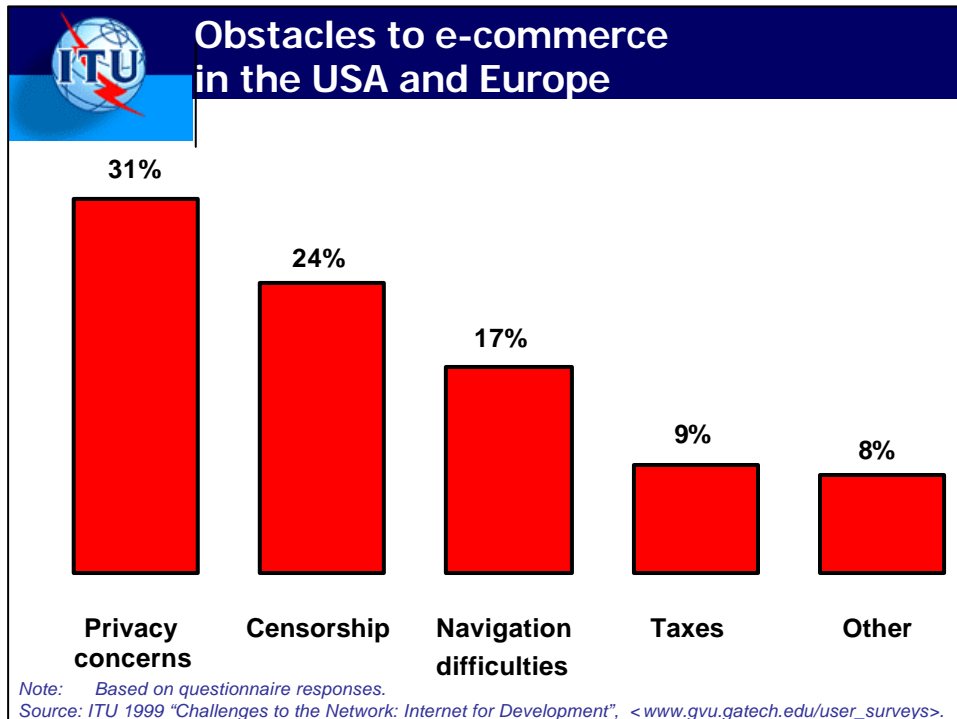
Internet **commerce**-related Regulatory Issues

- legal framework for Internet transactions
 - **Commercial code**
 - **intellectual property**
 - **copyright and trademarks**
 - **domain names**
 - **privacy and security**
- adequate financial framework
 - **customs and taxation**
 - **electronic payments**
- provision of market access and trade logistics
 - **Market access to the Internet**
 - **Shipping of goods**



Challenges to e-commerce

- In the *developed* world the major concerns are related to privacy, taxation, etc.
 - These are being dealt with by private sector initiatives, governments and int'l organizations (e.g., ITU, UNCITRAL, WTO, WIPO, OECD, etc.)
- In the *developing* world the primary concerns are related to
 - **telecom and IT infrastructure**
 - **pricing**
 - **content**
 - **awareness and know-how.**





Promoting Internet Development

- Promote the industry
- Build infrastructure
- Expand access to infrastructure and services
- Promote growth of Internet access market
- Promote production of local content
- Stimulate usage



Conclusions (1)

- Internet regulation poses special challenges:
 - The Internet moves so fast that it is hard to keep up
 - The Internet community does not want to be regulated while PTO incumbents view asymmetric regulation as unfair
 - A further complication is the global nature of the Internet which "routes around" regulation and national borders



Conclusions (2)

- A regulatory challenge is to develop:
 - **consistent and relevant technology-neutral regulations which**
 - *promote growth of the sector and*
 - *actively encourage innovation.*
 - *and serve the best interests of users.*
- Promotion of open and fair competition between all players is the key to long term success