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Improving IP Connectivity in the Least Developed Countries

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Outline

- International Context
- LDCs
- Connectivity
- Vicious circle
- Conclusions: barriers
- Options for international collaboration
- Virtuous circle

International context

- Digital divide initiatives (DOT force, UN ICT task force)

"Improve connectivity, increase [ICT] access and lower cost"

- World Summit on Information Society – Millennium Declaration Goals

world summit
on the information society
Geneva 2003 - Tunis 2005

Minneapolis 1998: World Summit on Information Society proposal

ITU Council 2001: Summit in two phases with the first phase to be held from 10 to 12 December 2003, in Geneva, Switzerland and the second in 2005 in Tunis, Tunisia.

Objective:

WSIS will provide the opportunity for all key stakeholders to assemble at a high-level gathering to develop a better understanding of this revolution and its impact on the international community

world summit
on the information society
Geneva 2003 - Tunis 2005

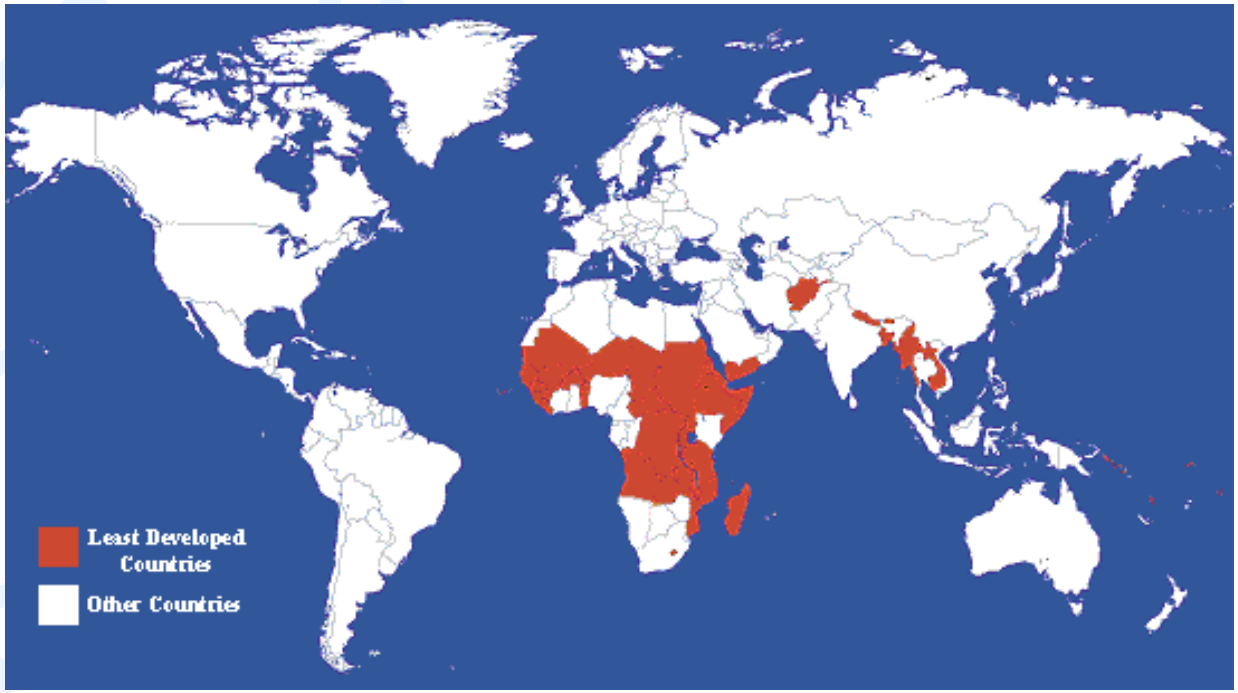
The **UN General Assembly** (Res. 56/183) endorsed the framework for the Summit and **recognized the need to:**

- ✓harness the potential of knowledge and technology for promoting the goals of the **United Nations Millennium Declaration** and

- ✓find effective and innovative ways to put this potential at the service of **development for all**

Focus 1: LDCs

Forty-nine countries, with a total population of about 680 million inhabitants, are currently designated by the United Nations as "least developed countries" (LDCs).



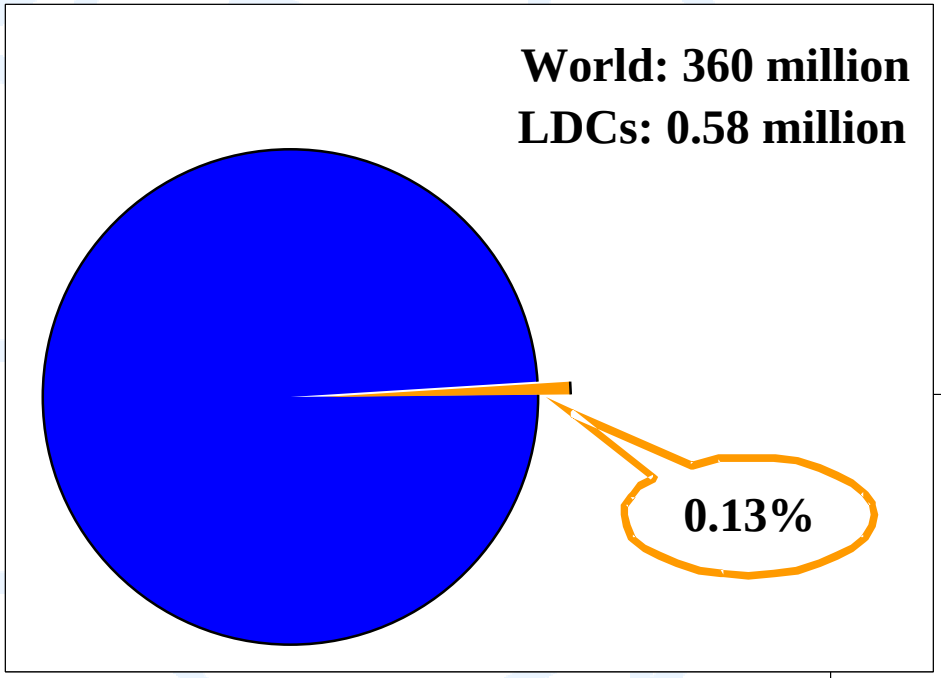
Why least developed countries?

- In LDCs teledensity is 0.59%, compared to 10% in developing countries

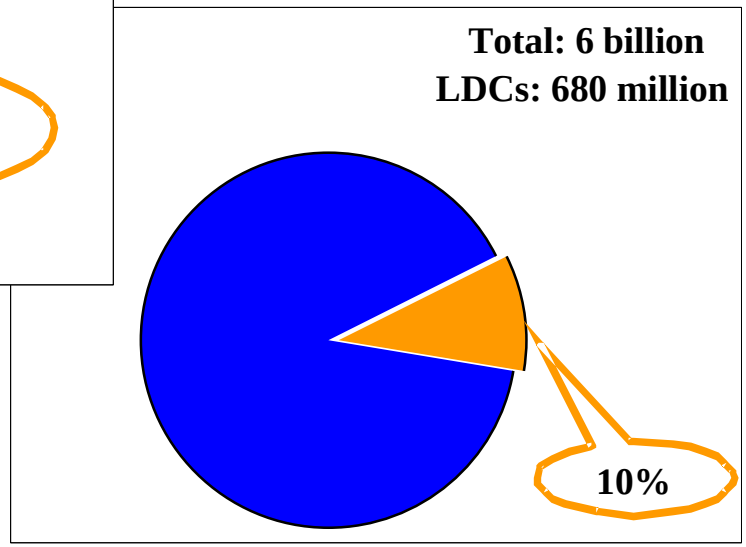
In LDCs problems are more extreme than those of developing countries, and deserve special attention

- There is less than one Internet user per one thousand people in LDCs, against one user per 36 people in developing countries

LDCs are falling behind…

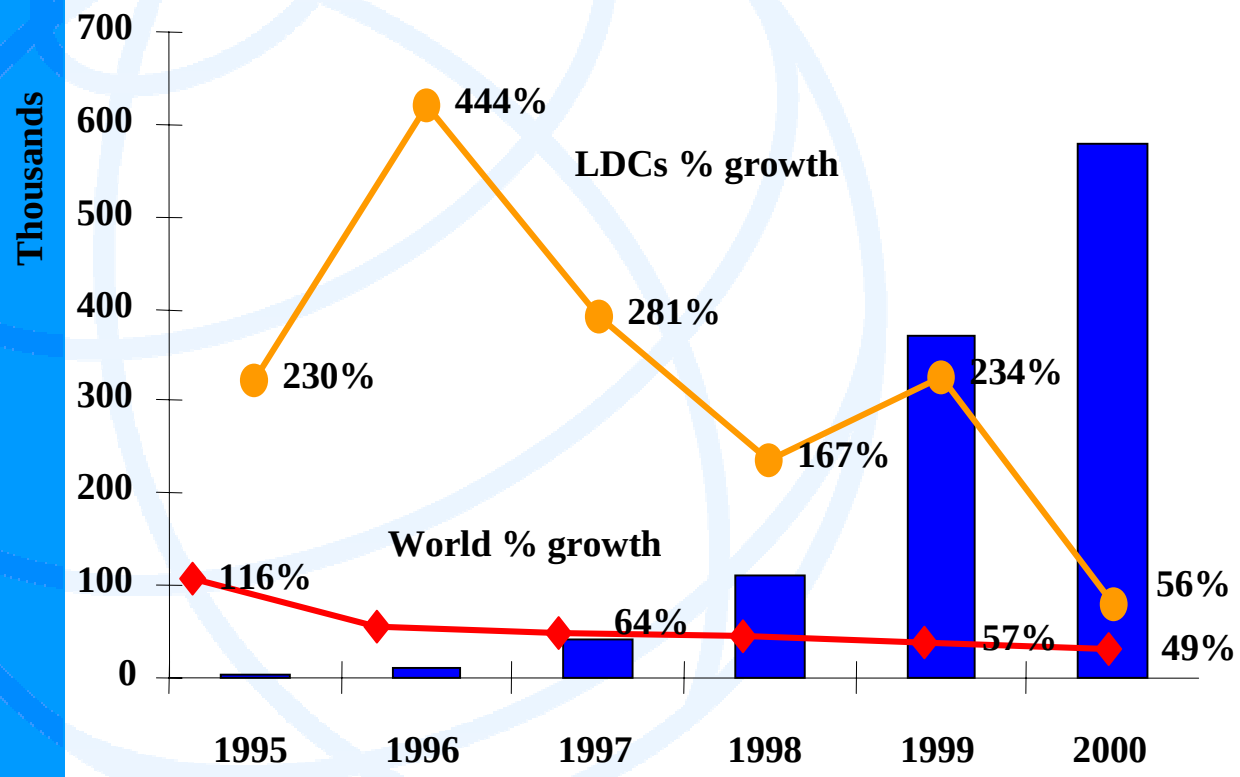


Estimated Internet Users



Population

…and failing to catch up

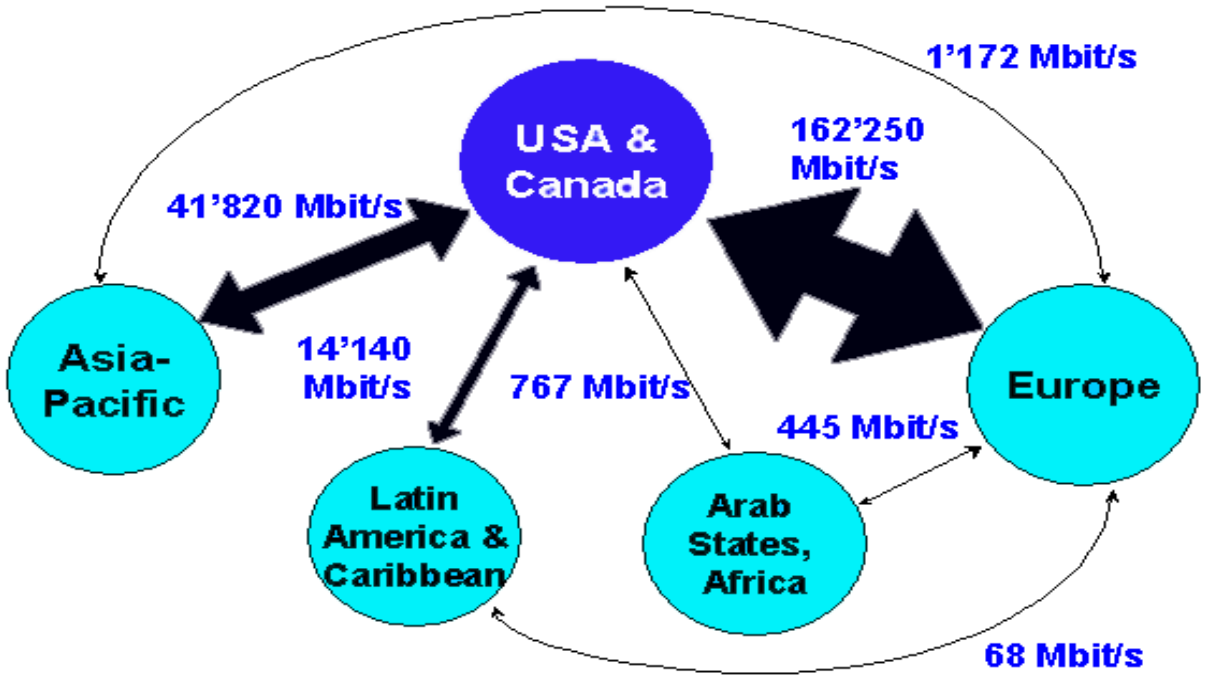


Internet users growth rate (56%) in LDCs is only a few points above average growth worldwide (49%)

Focus 2: IP connectivity

- Connectivity is the possibility for a user of an electronic network to communicate with other networks
- Connectivity is fundamental, as it precedes access to and use of the Internet
- LDCs have very low levels of connectivity …

International Internet bandwidth…



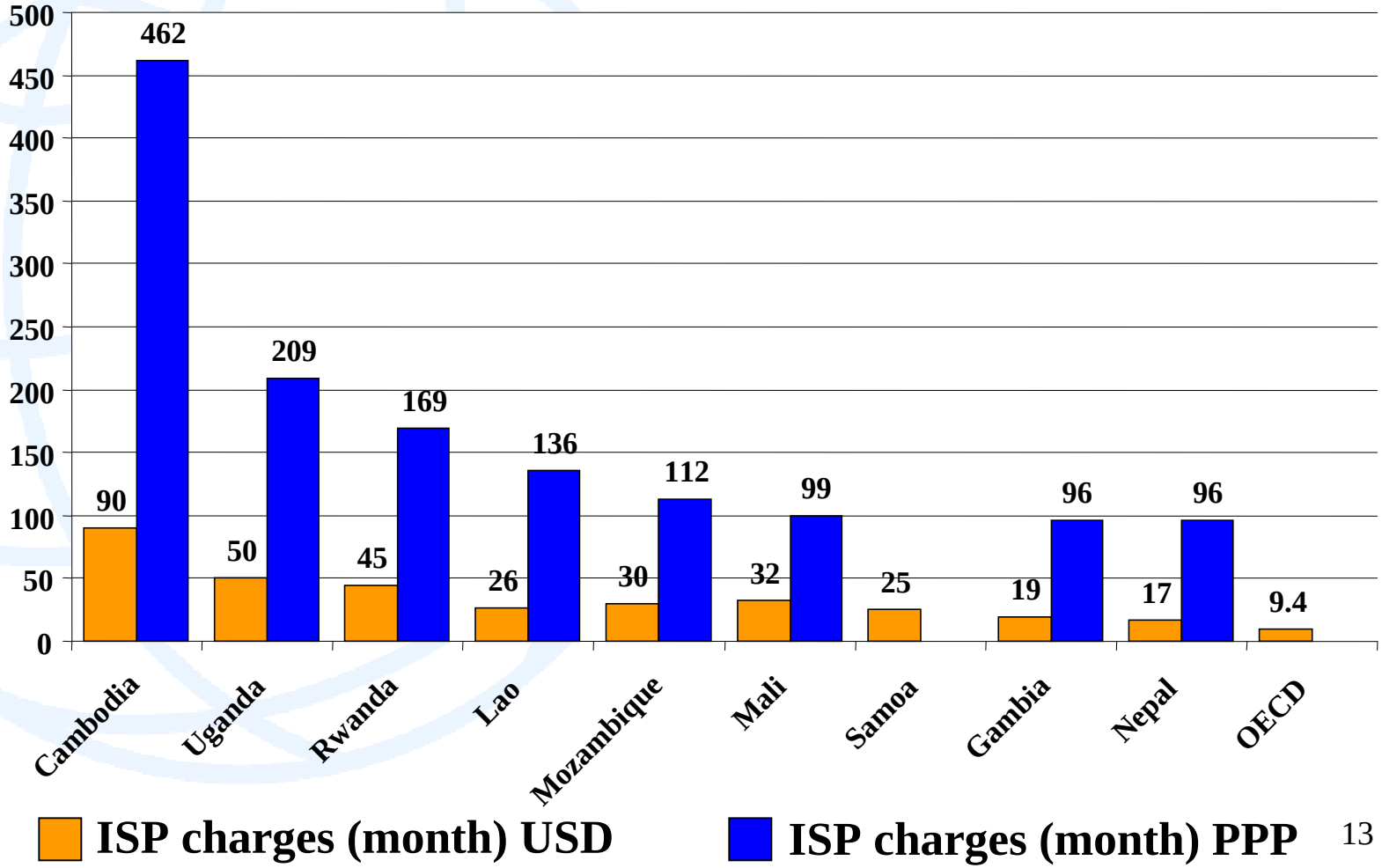
Source: TeleGeography Inc. Data valid for September 2001

…is not equally distributed

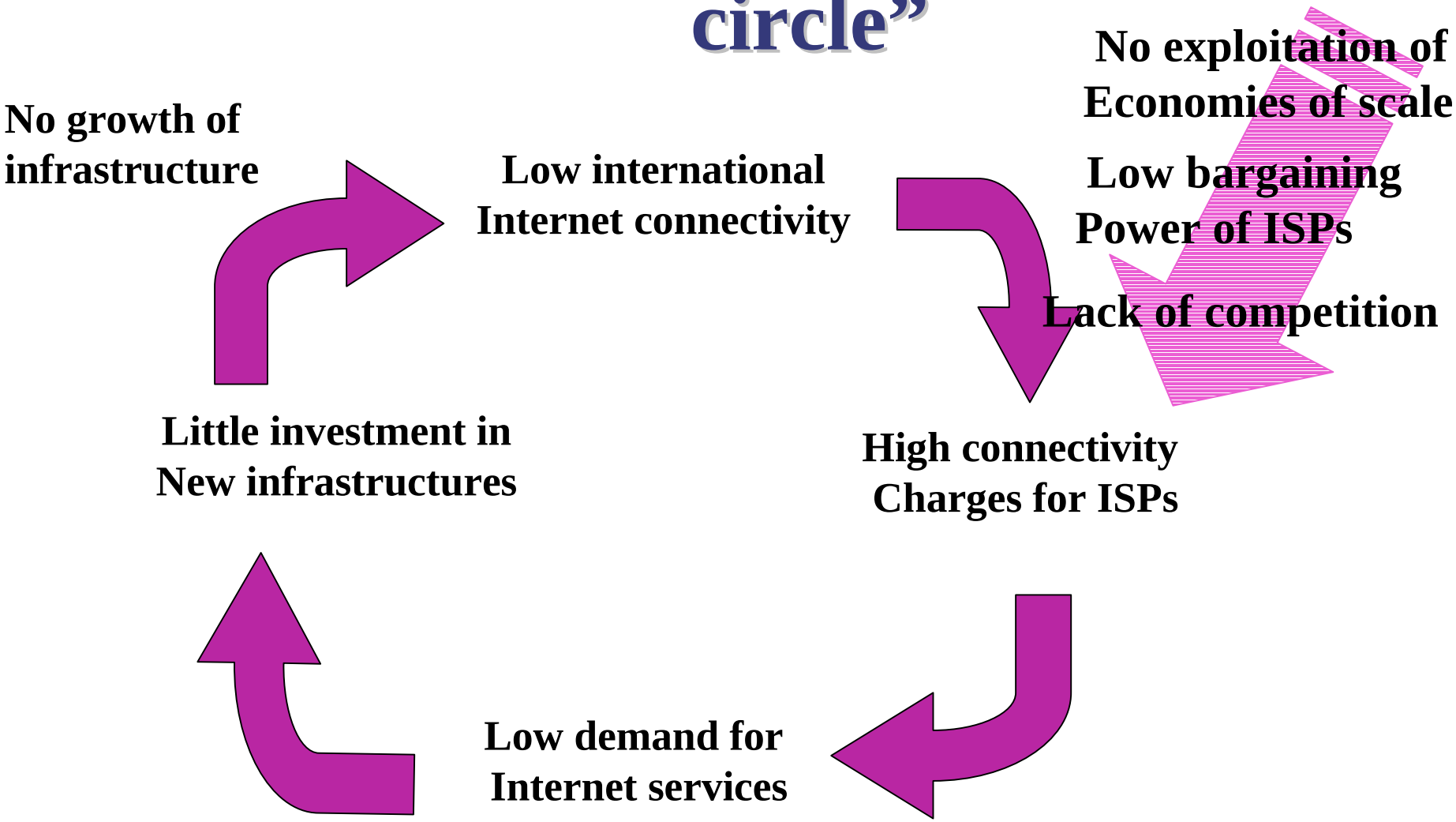
Infrastructure: limited and expensive

Country	Uplink/downlink capacity	Population (million)	Proportionate cost per 64 Kbit/s unit/month
Lao PDR	1.644/ 1.244 Mbit/s	5.23	*n.a.*
Rwanda	1.256/1.5 Mbit/s	7.73	*n.a.*
Mali	2/3 Mbit/s	11.23	USD 1’500
Samoa	512/2.256 Kbit/s	0.18	USD 840
Cambodia	3.5/6 Mbit/s	13.11	USD 625
Mozambique	1.6/2.2 Mbit/s	19.68	*n.a.*
Gambia	5/5 Mbit/s	1.30	USD 625/265
Nepal	5.5/10 Mbit/s	23.04	USD 625
Uganda	4/12 Mbit/s	23.30	*n.a.*

Result: High ISP costs for the end-user



This translates into a "vicious circle"



Conclusions:
There are many barriers to connectivity for LDCs

- **Infrastructure:**
  - **High cost, low availability**
- **Restrictive regulation:**
  - **Monopoly of telecommunication sector**
  - **Only one provider imposing its tariffs**
  - **Limited competition on the end-user side (ISPs)**
- **Market Failure:**
  - **Small market**
  - **Operators cannot benefit from economies of scale**
  - **Operators do not have bargaining power to obtain more attractive prices**
  - **Latent demand is not satisfied**

Options for international collaboration

Elaboration of a project to provide low cost <u>Internet connectivity</u> to LDCs through the utilization of flexible, less expensive and simple technology, like VSATs, engendering a "virtuous circle" which can help reducing the digital divide among countries.

One possible solution…

1. **Internationally-funded project**
2. **To provide bandwidth to ISPs in LDCs**
3. **Objective: to allow for the provision of low-cost Internet access for end-users**

1. International funding:
VSAT costs are still too high for LDCs

- **Internationally-funded Project structured over 5-7 years, decreasing each year to support bandwidth provision**

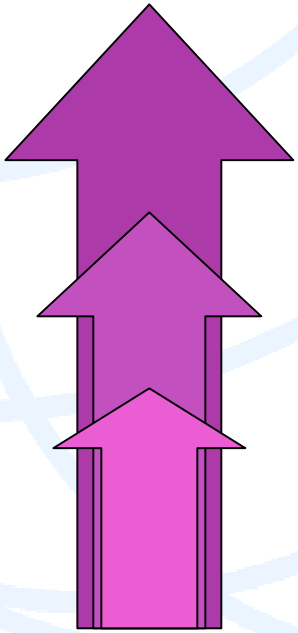
- **Financing allocated to ISPs through a competitive tendering process based on the reverse auction system (least cost subsidy):**

  The winner will be the entity providing the service at given conditions with the smaller financing

2. Why target ISPs?

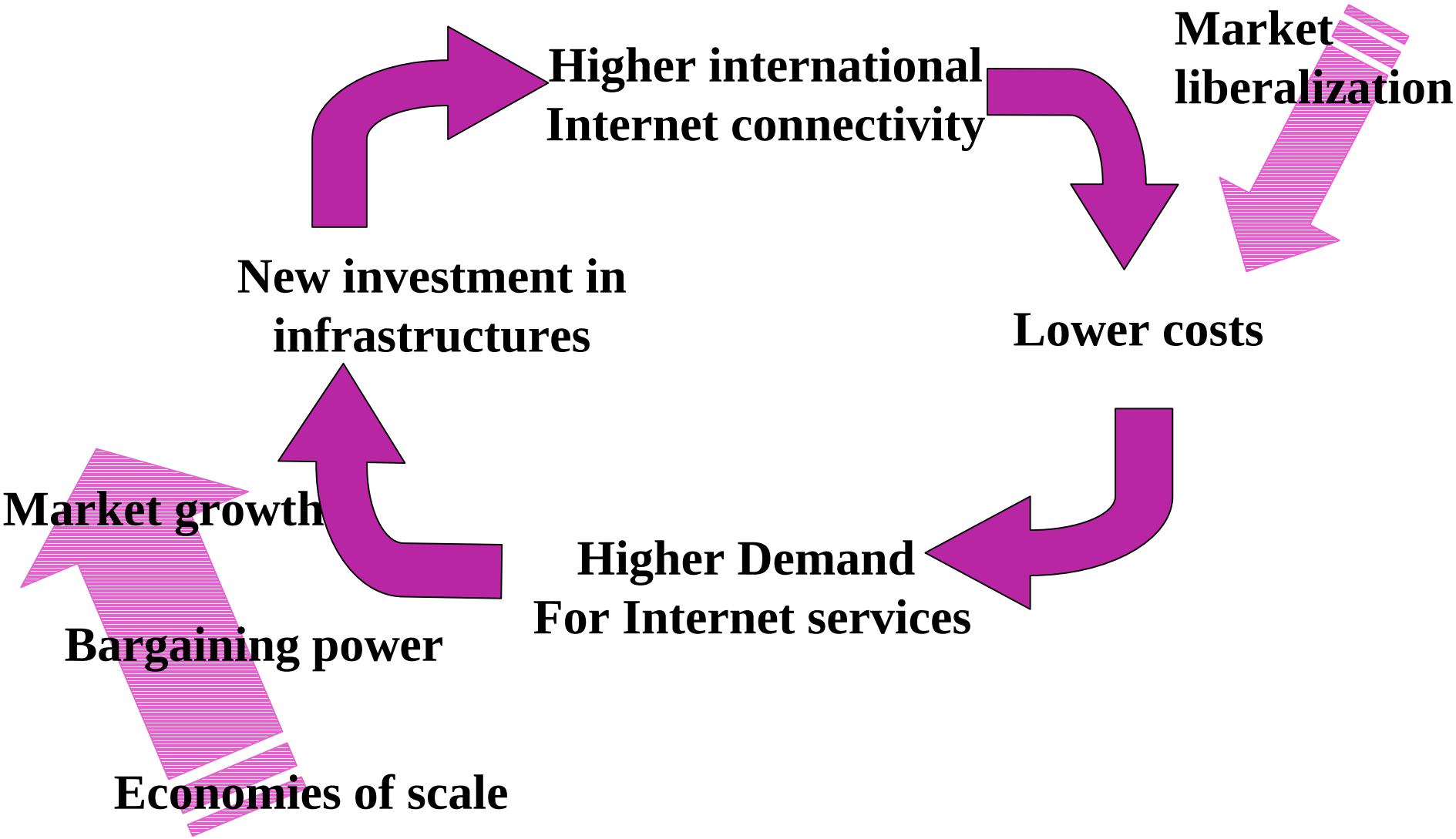
- Allows not to bypass local market and local network (less regulatory problems)
- ISPs are the most appropriate target for the project, as they already have technical knowledge and equipment to provide services.
- Computer services shops and cybercafés could also be targeted.

3. The effect of improved connectivity: Catching up…?



- Increased number of users
- Drop in costs
- Increased bandwidth

IP Connectivity Project: virtuous circle



Thank you !

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Useful links:

- **Improving IP connectivity in LDCs: http://www.itu.int/ipdc**
- **World Summit on Information Society: www.itu.int/wsis**
- **UN Millennium Declaration: http://www.un.org/millennium/declaration/ares552e.htm**
- **UNGA Res. 56/183: http://www.un.org/documents/ga/res/56/a56r183.pdf**