

United Nations Conference on Trade and Development (UNCTAD)

Briefing on the work of the United Nations Conference on Trade and Development in the area of World Telecommunication/ICT Indicators

A ready contribution to the WSIS

The United Nations Conference on Trade and Development (UNCTAD) is working on ICT Indicators. Our activities in this area include: work on benchmarking and technology indicators; individual country case studies; and more long-term policy analysis.

1. ICT Development Indices

In conjunction with the United Nations Commission on Science and Technology for Development (UNCSTD), UNCTAD reviewed and evaluated existing work to measure ICTs from different sources, including academia, the private sector and international organizations (UNDP, UNIDO, OECD and the ITU). On the basis of this work, UNCTAD constructed a theoretical framework from which to approach ICT measurement, comprising indicators of connectivity, access, usage and policy.

(Table 1)

Benchmarking is important in measuring outcomes from policies and monitoring progress in ICT connectivity and access. A standard selection of indicators against which countries can be measured allows comparisons and initial policy conclusions between countries and over time. Although more sophisticated, statistical methods are required for detailed investigation of causation, benchmarking is more straightforward and is an essential input to policy analysis.

ITU (2002) notes in its 2002 World Telecommunications Development Report that "over the last few decades, virtually every country has succeeded in improving its telecommunications sector. Thus, every country can show that its particular blend of policies has been successful. It is only by making *international comparisons* that it is possible to show which policies have been more successful than others... For this reason, an approach based on *comparative rankings* may be more meaningful than one that uses absolute growth rates". UNCTAD therefore uses a methodology based

on relative rankings, rather than absolute scores (although these may be more appropriate for some purposes e.g. for questions relating to the digital divide).

UNCTAD benchmarked and analysed the diffusion of ICT capabilities across 160-200 countries for 1995-2002. This cross-country study compiles data and ICT Development Indices for: connectivity (Internet hosts, number of PCs, telephone mainlines, mobile phones); wider access to ICTs (literacy, GDP per capita and cost of local calls, as well as actual number of Internet users); usage of ICTs (incoming and outgoing telecom traffic); and policy (presence of a domestic Internet exchange, as well as competition in local loop, domestic long distance and ISP market). (Table 2)

The study analysed index rankings by regions and by income to identify trends and to classify countries as 'falling behind', 'keeping up' and 'getting ahead'. As a broad generalisation, African and South Asian countries were classified as 'falling behind', Latin American and transition economies as 'keeping up' and OECD countries and S.E.Asian Tigers as 'getting ahead'. Rankings were stable and consistent over time, and in line with expectations based on income. Such stability is consistent with the long-term planning and time horizons required for telecommunications investment. It also implies that these Indices are measuring indicators of central technological development.

2. Digital Divide

UNCTAD has analysed and measured the international digital divide in terms of inequality in the distributions of hardware equipment (Internet hosts, PCs, fixed mainlines, mobiles) and Internet users across countries, using the Gini measure of inequality. Our results show that more recent technologies such as Internet (measured by Internet hosts) are more unevenly distributed relative to older technologies, such as fixed line telephony. Our findings also demonstrate 'leapfrogging' in mobile telephony (with lower inequality, which reduces the fastest), suggesting greater potential for more equally distributed technologies in bridging the digital divide. Overall, these reductions represent only small, incremental reductions in inequality from their high levels of inequality.

3. Policy Work

In future work, UNCTAD plans to analyse best practice cases of ICT development. The experience of different developing countries in the building-up of ICT capacity will be evaluated in order to identify policies that proved successful and those that were less successful. An attempt will be made to understand the reasons for success or failure and to make conclusions from these experiences which could be recommended for application elsewhere. The study will help identify effective ICT initiatives and formulate successful policies for national ICT capabilities to promote greater inclusion of LDCs and DCs in the world economy through ICT capacity building.

Index	UNCTAD (2002)	Mosaic Group (1998)	Mosaic Group (1996)	McConnell International (2001, 2000)	Economist (EIU) (2001, 2000)	Harvard University	ITU
<i>Perspective</i>	Tech. Development	General IT	Defence	Commercial	Commercial	Sociological	Telecoms
<i>Item measured</i>	ICT diffusion	Global Diffusion of Internet	IT capability	E-Readiness	E-Readiness	Networked Readiness	Internet Access
1.Connectivity (physical capacity; infrastructure)	Internet hosts; Tel. Mainlines; PCs; Mobile subscribers.	Pervasiveness; Connectivity Infrastructure.		Connectivity Infrastructure pricing	Connectivity (30%) fixed & mobile, narrow band/broadband	Info Infrastructure Software & Hardware	Hosts; servers; telephones; PCs.
2. Access	Internet users; Literacy; Average revenue; call costs.	Pervasiveness Geographical dispersion	Pervasiveness	Access	Cost of access Availability Affordability	Availability Affordability	Users; subscribers.
3. Policy environment	Competition: Local loop, long distance; Internet exchange.	Organisational infrastructure	Depth of Development	E-Leadership; E-Business Climate	Legal and Regulatory Env't (15%) Business Env't (20%)	Legal Environment: Telecom & Trade policy	ISPs; Prices; Traffic
4. Usage	Telecom traffic: incoming; outgoing.	Sectoral Absorption Sophistication of use	Sophistication of usage	Information Security	E-commerce (20%); consumer/business use; e-services (10%)	Content B2B education B2C Ecommerce;	
Additional Factors			Proximity to Tech. Frontier, Indigenisation	Human Capital	Social/cultural infrastructure 5%, Education/literacy	IT Sector ICT Training	

Table 1: Review of Existing Work

