

# From Digital Divide to Digital Dividend

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## INTRODUCTION

Despite rapidly falling costs of hardware, software, and telecommunications services, a wide gap persists between rich and poor nations in terms of their capabilities of accessing, delivering, and exchanging information in digital forms (Carter & Grieco, 2000). Developing countries, comprising over 81% of the world population, account for a tiny fraction of global e-commerce. An estimate suggests that 99.9% of business-to-consumer e-commerce in 2003 took place in the developed regions of North America, Europe, and Asia Pacific (Computer Economics, 2000).

Whereas high-income countries have income 63 times that of low-income countries, the respective ratios are 97 for PCs (personal computers), 133 for mobile phones, and over 2,100 for Internet hosts (Dholakia & Kshetri, 2003). While reliable data on e-commerce transactions are not available, the ratio is likely to be even higher for e-commerce transactions since e-commerce is virtually non-existent in many developing countries. The pattern indicates that the gap between developed and developing countries is wider for more recent technologies such as PCs, mobile phone, and the Internet than for technologies that were introduced earlier.

In the absence of appropriate policy measures, it is likely that the "global digital divide" will become wider (Dholakia & Kshetri, 2003; Economist.com, 2000). Policy measures directed at making appropriate networks available to the digitally excluded populations at reasonable costs could bridge the gap or at least decrease the rate at which it widens.

This article provides an assessment of two computer networks that redefine the conventional definition of market value by allowing developing nations and communities (Brooks, 2001) to reap the benefits of modern ICTs (information and communications technologies): Global Trade Point Network (GTPNet) and Little Intelligent Communities (LINCOS).

## BACKGROUND

The global digital divide is the result of the complex interactions among ICTs and various economic, political, and social factors in the environment. First, a large majority of potential users in developing countries are unable to afford a telephone line, a PC, and the telephone and Internet services provider (ISP) access charges. Whereas the cost of a PC is 5% of the per capita GDP (gross domestic product) in high-income countries, it is as high as 289% in low-income countries (ITU, 2001). Furthermore, monthly Internet access charge as a proportion of per capita GDP in the world varies from 1.2% in the US to 614% in Madagascar (UNDP, 2001).

Second, for some consumers in developing countries that are willing to pay for the connection of a telephone line, there is a big gap between demand and supply. For instance, in 2001, 33 million people in the developing world were on the registered waiting lists for telephone connections, the average waiting periods being over 10 years in some countries.

A third problem is related to the lack of skills. A majority of potential users in developing countries lack English language and computer skills, prerequisites for the use of the Internet. For instance, in 1998 about 85% of the text on the Internet was in English (Nunberg, 2000). This proportion decreased to 80% in 1999 and 50% by 2003. Although a shift of Internet content to non-English languages is under way, some knowledge of English is still necessary to use the Internet as the bulk of software used in the Internet is in English (Hedley, 1999) and most of the human-computer interfaces favor English-language users (Goodman, Press, Ruth, & Ruthowski, 1994).

A fourth problem is related to the lack of relevant content. Although there are over 17 billion Web pages<sup>1</sup> in existence, the content remains largely geared to the needs of advanced nations. Edejer (2000) observes the difficulty of finding reliable health-related information relevant to developing countries online:

*Few reports of health research from developing countries are published in journals indexed by Western services such as Medline. Western indexing services cover some 3,000 journals, of which 98% are from the developed world. The whole of Latin America accounted for 0.39% of the total number of articles referenced by Medline in 1996.... Because only a small number of journals from developing countries are indexed by Medline, research from these countries is almost invisible.*

## **CREATIVE WAYS TO BRIDGE THE DIGITAL DIVIDE: SOME EXAMPLES**

The effectiveness of a network in bridging the global digital divide is thus a function of (a) the network's ability to identify priorities of digitally excluded populations and (b) the network's ability to attack the major barriers to Internet and e-commerce adoption. In the following section, we examine two networks designed to enable e-business systems for the global poor: GTPNet (Figure 1) and LINCOS (Figure 2).

### **Global Trade Point Network of the World Trade Point Federation (<http://www.wtpfed.org/>)**

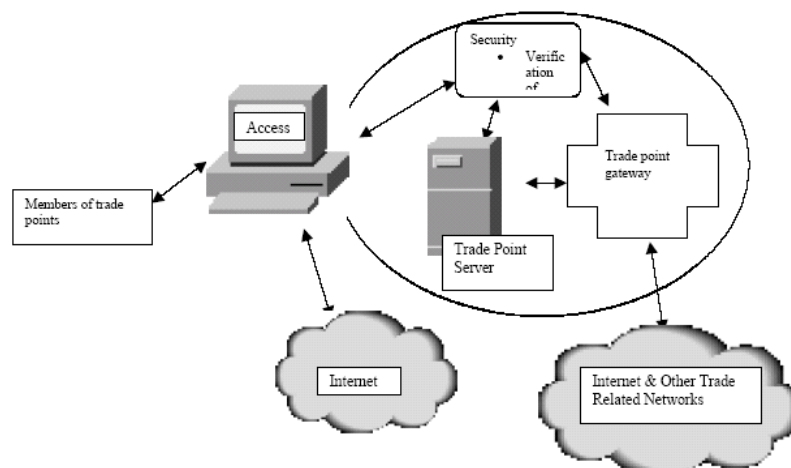
The United Nations Conference on Trade and Development (UNCTAD) launched the Global Trade Point Program in 1992 to facilitate the access to international markets for SMEs. The program was taken over by the World Trade Point Federation in November 2002. In mid-2003, GTPNet had a human network of 121 trade points in over 80 countries on five continents<sup>2</sup>.

In a trade point, participants in foreign trade transactions (e.g., customs authorities, foreign trade institutes, banks, chambers of commerce, freight forwarders, transport and insurance companies) are grouped together under a single physical or virtual roof to provide all required services at a reasonable cost. It is a source of trade-related information providing actual and potential traders with data about business and market opportunities, potential clients and suppliers, trade regulations and requirements, and so forth. A survey found that 85.7% of trade-point customers are SMEs and microenterprises (UNCTAD, 1997).

The ETO (electronic trading opportunity) system is probably one of the most important aspects of the GTPNet. It was started by the UN Trade Point Development Center (UNTPDC) in June 1993 and is the world's largest Internet-based business opportunities system. ETOs are offers and demands for products, services, and investment and are distributed point to point and company to company. They are forwarded to the GTPNet system by trade points and third-party information providers. A random survey of ETO users conducted in 1998 revealed that 48% of the ETO users received 1 to 10 responses per posted ETO, an additional 14% receive 10 to 30 responses, and about 7% receive over 100 reactions. About a third of respondents made business deals on the basis of ETOs.

Developing countries also have a much higher share in the ETOs than in overall global e-commerce. A UNTPDC analysis of ETOs posted on the GTPNet during March 1 to July 15, 1998, indicated that 20% of them were posted by US-based companies, followed by companies in China (19%), South Korea (11%), and India (7%; UNCTAD, 1998). It is interesting to note that the US accounted for 74% of the global Internet commerce market in 1998 (Wang, 1999).

*Figure 1. UNCTAD GTPN*



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