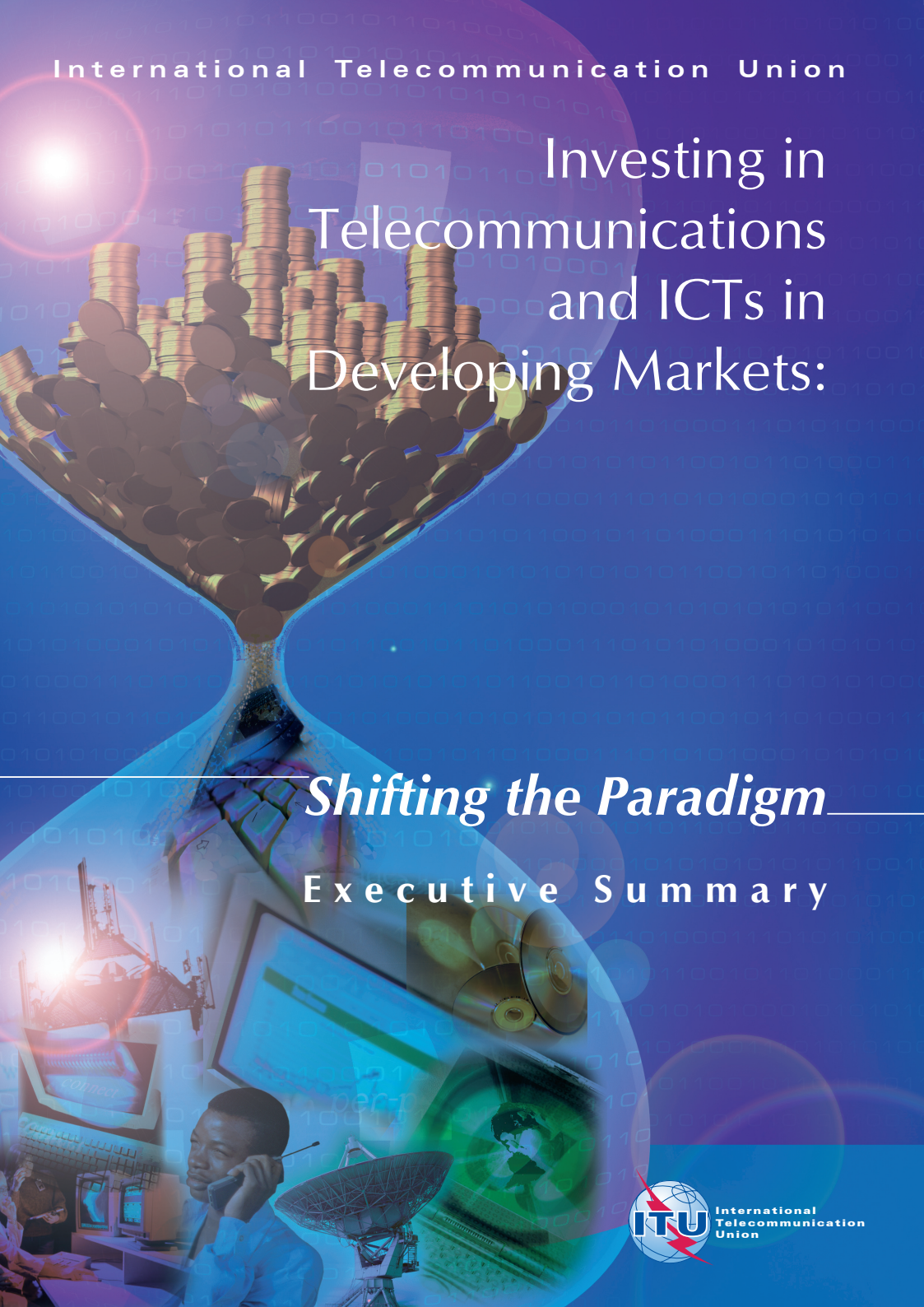


International Telecommunication Union

# Investing in Telecommunications and ICTs in Developing Markets:

## *Shifting the Paradigm*

### Executive Summary



International  
Telecommunication  
Union



**INVESTING IN TELECOMMUNICATIONS  
AND ICTs IN DEVELOPING MARKETS:**

*Shifting the Paradigm*

**Executive Summary**

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Related documents available from ITU/BDT ([www.itu.int/ITU-D/finance/](http://www.itu.int/ITU-D/finance/)):

- Financing Telecommunication Development: The Example of Albania
- Financing Telecommunication Development: The Example of Bolivia
- Financing Telecommunication Development: The Example of Cameroon
- Financing Telecommunication Development: The Example of Chad

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# INVESTING IN TELECOMMUNICATIONS AND ICTs IN DEVELOPING MARKETS:

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### Executive Summary

#### 1. Introduction

It goes without saying that human development is a major international objective. The United Nations brought global unity on this crucial objective with the Millennium Declaration of 2000. This Declaration mobilized the international community to action with the release of the Millennium Development Goals that set forth specific targets related to ending poverty, enhancing education, promoting equality, improving health care, fostering environmental sustainability, and generally stimulating economic development.

The purpose of the report *Investing in Telecommunications and ICTs in Developing Markets: Shifting the Paradigm* is to contribute to the discussion of how to enhance the proliferation of telecommunications and ICTs particularly in developing countries in a way that promotes the achievement of the Millennium Development Goals. The major focus of the report is to provide insight into how to stimulate direct investment in telecommunications and ICTs in developing countries.

The report looks at the issue of investment from various perspectives, including from the point of view of the potential investor (local, national and international) as well as from the points of view of the national government and regional/international organizations – including, of course, ITU. How to bridge the financial interests of the investor with the social/economic goals of the government and regional/international organizations and finally, with the needs and demands of the society – that is the basic question that the report examines.

## **2. Why focus on investment in telecommunications/ICTs in developing markets?**

A key challenge to achieving the Millennium Development Goals relates to how to bring to citizens in developing countries the benefits of inclusion in the Information Society. Telecommunications and ICTs have been identified as being crucial to achieving goals related to:

- Economic development
- Governance
- Education
- Health
- Environment
- Social interaction/cultural identity
- Entertainment

With respect to economic development, there has been a great deal written related to the linkage between telecommunications and ICTs and economic development. Indeed, an adequate telecommunication/ICT infrastructure is viewed as a key ingredient for the development of most other economic sectors. Investors in other sectors of the economy view the lack of an adequate telecommunication/ICT infrastructure as a significant barrier to investment.

In this context, traditional analysis has linked telephone density with GDP per capita. In today's environment, the discussion needs to also include the linkage between Internet access and economic development. In fact, the Internet has the potential to more dramatically improve economic conditions in a society than just access to a telephone. The Internet can be an effective tool in developing countries for:

- understanding pricing and market conditions for products to be sold;
- understanding prevailing market conditions and prices for inputs;
- increasing efficiency of production;
- increasing management efficiency and record keeping;
- providing better access to farming techniques to improve crop/livestock yield and land management;



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- providing easier access to funding resources;
- reducing the need to physically travel to gain access to relevant information;
- promotion and marketing of products, domestically and abroad;
- learning new skills and production techniques to enhance products to be sold;
- learning marketing and sales skills to better promote and sell products;
- enhancing customer satisfaction through online customer support; and
- developing the capability of providing telebusiness and other electronic services – such as data entry services.

For governance, telecommunications and ICTs can play an important role in several key ways:

- increasing opportunity for citizen participation in the political and governmental processes;
- enhancing access to government services;
- enhancing access to government contracts;
- helping government in addressing natural disasters and recovery;
- providing means for government to better manage resources;
- enabling enhanced record/data collection and maintenance; and
- enhancing government tax collection processes.

With respect to education, telecommunications and ICTs can:

- provide downloadable access to educational materials to be used in a physical class setting;
- enable web-based education and training;
- dramatically enhance access to study/research tools;
- facilitate training and education of teachers and other educators;
- facilitate management of educational institutions;
- enhance interaction between students and teachers; and
- stimulate interaction between local students and peers/friends elsewhere.

Telecommunications and ICTs have an important role to play with respect to health and medical treatment by:

- enhancing access to the latest medical knowledge and treatment options;
- fostering access to international markets for prescription drugs;
- providing access to consultation by expert doctors from around the world;
- enabling electronic transmission of patient charts, medical images, etc., for remote diagnosis;
- enhancing management of hospitals and medical centres; and
- improving patient care and comfort.

With respect to the environment, telecommunications and ICTs can play an important role through:

- environmental monitoring;
- dissemination of environmental warnings/restrictions;
- enhancing citizen awareness and participation in environmental issues;
- enabling computer modelling of ecosystems; and
- enhanced promotion of eco-tourism efforts.

With respect to social interaction and cultural identity, telecommunications and ICTs can contribute through:

- creation of virtual communities of interest;
- facilitating peer-to-peer interaction;
- electronic promotion of cultural attractions and artifacts for tourism, product sales and other revenue generating activities;
- electronic documentation/preservation/dissemination of languages, cultural identities and traditions; and
- facilitation of gender equality.

The subject of human development cannot be complete without a mention of entertainment and leisure time activities. While not mentioned in the Millennium Declaration and not listed as one of the Millennium Development Goals, the pinnacle of human development must include human happiness. Happiness has many facets and ingredients, but included is the ability to enjoy leisure time and to take advantage of forms of entertainment. In this area, telecommunications and ICTs can play a significant role through:

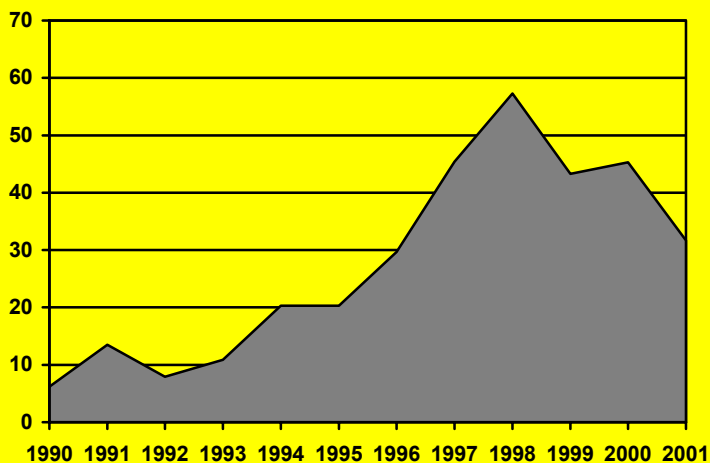
- radio and television broadcasting of entertainment programming;
- electronic games;
- web-based entertainment programming;
- enhanced access to information on fads and trends;
- electronic access to pleasure-reading materials; and
- facilitation of social interaction for leisure enjoyment.

### **3. What has been the trend in investment in developing markets?**

The challenges of bringing developing countries into the Information Society lead directly to the question of how to enhance the diffusion and usage of telecommunications and ICTs in those countries. Considering the role of the private sector in telecommunications and ICTs, the question then turns to how to enhance private investment in the sector.

The early part of the decade of the 1990s witnessed a powerful surge in private investment in telecommunications – from USD 6 billion in 1990 to USD 57 billion in 1998. This coincided with unbridled optimism in the telecommunication and ICT sector as a whole. The end of the decade witnessed the bursting of the telecommunication bubble throughout all aspects of the industry, and private investment suffered a decline to USD 32 billion in 2001. With a convergence of global recession, overbuilt network capacity, accounting scandals, stock price collapses, sky-high spectrum licence fees and more, the sector seemed to go through something like a perfect storm. This impacted not only availability of funds for investment, but it also brought about extreme aversion to risk by investors.

**Chart 1: Global annual private investment in telecommunications: 1991-2001**  
(USD billions)



Source: World Bank, PPI Database.

Regional analyses during the 1990s point out differing regional approaches to attracting investment and consequent differing levels of direct investment as well as differences in the impact caused by the market implosion at the end of the decade.

For example, countries of Latin America and the Caribbean tended to use private participation in infrastructure as an integral part of deeper reforms in the sector. These reforms tended to focus on turning over most, if not all, of the sector to the hands of private investors. Privatizations in Latin America and the Caribbean tended to focus on selling controlling stakes to strategic operators.

In East Asia, private sector participation in the sector was more to complement the government's role and not necessarily to displace it. In instances of privatization, the trend was more towards listing minority stakes in local or regional stock markets, with the government retaining control.

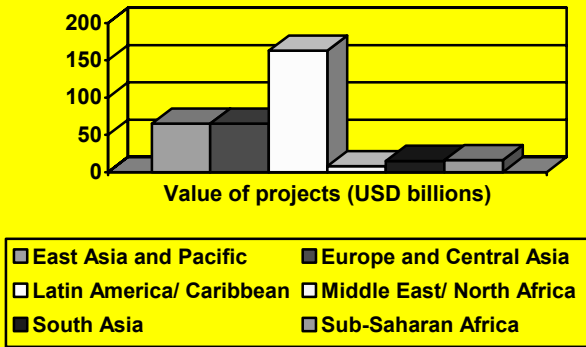
Countries in Europe and Central Asia followed two different paths. Those wanting to accede to the European Union followed the general path followed in Latin America and the Caribbean, turning over most of the control of the sector to private hands promoting competition in most segments of the sector. Others tended to promote green field projects for new services – but did less to promote competition in fixed-line telephony – dominated by the traditional monopoly provider.

In Sub-Saharan Africa, the emphasis was mixed, but a tendency existed to encourage private investment in green-field projects to build out basic infrastructure that the government was not able to take on. Nonetheless, a number of countries in Sub-Saharan Africa did privatize State-owned telephone companies during the period, typically selling controlling interest to strategic investors.

The countries of the Middle East and North Africa tended to limit private investment and, when allowed, principally only in networks that complemented (and not competed with) government-owned operators.

The regional differences are borne out in the results. Of the USD 331 billion overall for 1990-2001, projects in Latin America accounted for 49 per cent, East Asia and the Pacific for 20 per cent, Europe and Central Asia for 20 per cent, Sub-Saharan Africa for 5 per cent, South Asia for 4 per cent, and Middle East and North Africa for 2 per cent.

**Chart 2: Value of private sector investment in telecommunications, by global region: cumulative 1991-2001**



Source: World Bank, PPI Database.

These regional, and national differences in approaches and consequences reveal strategies that were successful then, but do not necessarily reveal what would be successful in today’s environment. The question remains – how to stimulate private investment, in today’s environment and at realistic levels, that meets the needs of society and the investors.

**4. What risk factors do investors consider when evaluating potential opportunities?**

There are a myriad of factors that influence investment and the subject can be analyzed from several perspectives. This discussion will address the perspective of the potential private investor and the perspective of the government.

Potential investors in the telecommunication sector focus on a number of key indicators when deciding if a country provides a financially attractive opportunity. This scrutiny is even more intensive today than in the boom time of the 1990s. In general, companies continue to look for new investment opportunities, but are generally more risk averse than in the past. And, the financial potential needs to clearly outweigh the risk.

When evaluating various opportunities around the world, potential investors look at several categories of factors. These factors are considered across the board – whether the opportunity being considered is in a developed or developing country. These factors (discussed in significant detail in the report) include:

- Overarching civil/government/institutional stability and predictability
- Macroeconomic stability and growth
- Availability of appropriate human resources
- Existence and enforcement of intellectual property protection laws
- Adequate supply and distribution channels
- Sufficient and attractive opportunities in the telecommunication/ICT sector.

As an aside, the risk/reward balance may be different for large international (multinational) investors compared with local entrepreneurs. As a general rule, large international investors will have a wider variety of investment options to consider than will the local entrepreneur. In addition, local entrepreneurs will likely take in their stride some of the local conditions that might discourage international investors. Finally, it is likely that the scope and size of the opportunities will be different between the local entrepreneur and the international investor. When applicable, differences between the factors likely impacting the international investor and the local entrepreneur are noted.

## **5. Risks and opportunities for investors in developing markets**

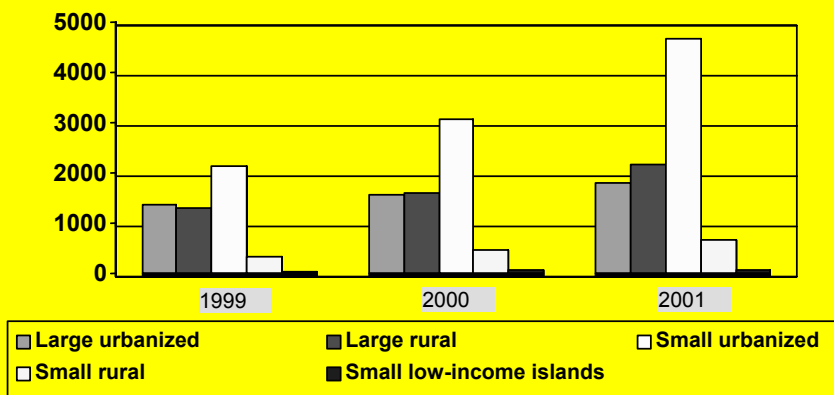
The report evaluates this question in significant detail looking at the risk factors of developing markets that investors face, offering ideas on how to mitigate those risk factors and evaluating market opportunities in groupings of developing markets. (Thirty-nine countries were evaluated and grouped on the basis of geographic size and extent of urbanization.) Analyses of those groupings demonstrate the market and investment potential:

- On average, large urbanized developing markets experienced an increase of 32 per cent in telecommunication subscribers between 1999 and 2001.
- On average, large rural developing markets witnessed a 67 per cent increase in subscribers during 1999-2001.

- Small urbanized developing markets, on average, experienced a dramatic 333 per cent increase in subscribers during the period.
- Small rural developing markets experienced a similar surge of 305 per cent increase in subscribers during 1999-2001.
- Small low-income island markets saw subscriber growth increase by 176 per cent during the period.
- In every category of telecommunication/ICT indicators, low-income countries experienced significantly higher growth rates than high-income countries throughout 1999-2002.
- In total, low-income countries would have needed an additional 399 million additional main line telephone subscribers at a required investment of USD 599 billion to reach applicable 2002 world/regional targets.
- In total, low-income countries would have needed an additional 93 million additional Internet users at a required investment of USD 927 million to reach applicable 2002 world/regional targets.

**Chart 3: Comparison of country groupings for total telephone subscribers: 1999-2001**

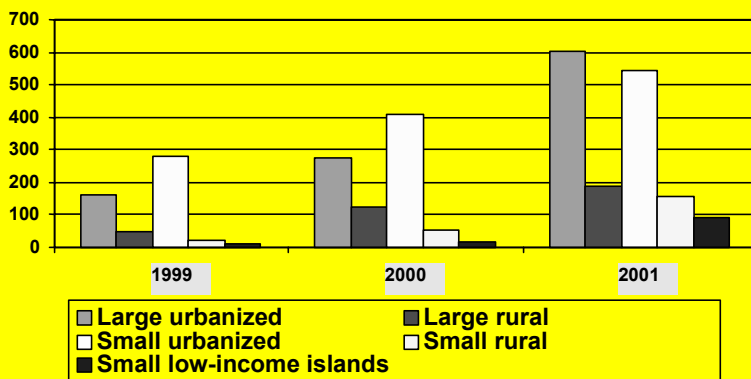
*(thousands)*



Source: ITU.



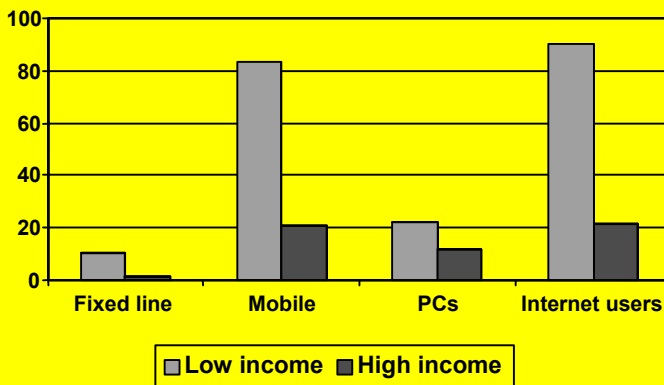
**Chart 4: Comparison of country groupings for Internet users: 1999-2001**  
(thousands)



Source: ITU.

**Chart 5: Growth rate comparisons between low-income and high-income countries**

(per cent)



Source: ITU.

## 6. Other findings

The report uncovered a number of other key findings for consideration.

- For many risk factors, international investors react differently from local or regional investors.
- International organizations can play a pivotal role in mitigating risk factors facing potential investors.
- Investors themselves have an important role in mitigating risk factors.
- Prepay systems can be an important way to mitigate the risk factor related to the credit worthiness of customers.
- A sound business case can be made for investing in green-field network opportunities, despite low average revenue per user.
- Official government statistics, e.g., GNP, do not represent the complete view of economic activity in a country. Many developing countries have “shadow economies” that, in some cases, can add to overall economic activity by as much as 80 per cent of official GNP.
- National governments can play a key role in enhancing investment in the sector by:
  - developing a national strategy;
  - establishing an environment conducive to investment;
  - promoting cross-border or regional cooperation to develop market opportunities with larger economies of scale;
  - promoting the usage of telecommunications and ICTs;
  - developing human capital;
  - creating the legal and trade framework attractive to investors;
  - creating tools for local and regional SMEs;
  - encouraging cooperatively-owned networks;
  - contributing to the development of a backbone network;
  - establishing an advisory committee of stakeholders;
  - utilizing government facilities to promote telecommunication/ICT networks;
  - promoting renewable energy resource development;

- tapping into the knowledge base and investment potential of expatriates;
  - collecting and disseminating useful market information;
  - encouraging partnerships between telecommunication/ICT companies and utilities;
  - encouraging the development of supply/distribution channels;
  - developing programmes for the reuse of personal computers;
  - taking direct involvement in telecommunication/ICT networks, if no other practical options exist;
  - promoting international standards;
  - working with ITU and other appropriate organizations.
- Investors can also play a key role in stimulating investment and market opportunities by:
    - promoting telecommunication/ICT applications;
    - working with the government on a national strategy;
    - using local contacts to understand and enter the market;
    - considering green-field opportunities;
    - considering a regional approach to market entry;
    - customizing business practices and services to local needs/capabilities;
    - developing business associations;
    - carefully considering most cost-effective technologies;
    - considering alternatives to reach rural users;
    - developing community-owned telecommunication/ICT cooperatives;
    - considering innovative ancillary businesses;
    - partnering with utilities;
    - developing practical/realistic business models;
    - considering franchising options;
    - considering developing markets as a base for international business development;
    - considering innovative telecentre options;
    - partnering with other carriers to minimize costs/maximize revenue.

## **7. What can international organizations, such as ITU do to help facilitate increased investment in developing markets?**

Relevant international organizations are important stakeholders in the process. ITU, for example, can play a significant role as a catalyst of change. As the principal UN agency focused on telecommunications and ICTs, ITU understands the dimensions of the problems facing developing markets that are trying to modernize and expand their networks. Furthermore, ITU's Telecommunication Development Bureau (BDT) has the mandate conveyed to it by the World Telecommunication Development Conference to assist developing countries attract investment in telecommunications and ICTs. Specifically, ITU can follow up the work on the report by:

- Conducting more detailed country-by-country analyses of the specific factors impacting investment.
- Conducting more detailed analysis on investment issues related to broadcasting and broadband.
- Conducting more detailed analysis of the needs/risk factors impacting specific types of investors, including:
  - large foreign carriers;
  - local/regional carriers;
  - manufacturers;
  - systems integrators;
  - software developers.
- Working with countries to develop national telecommunication/ICT strategies that would include:
  - targets for technology diffusion;
  - regulatory reform priorities;
  - strategies for enhancing human resource skills;
  - strategies/actions for attracting investment;
  - financing options;
  - ways to market/promote telecommunication/ICT usage in the country including:
    - a) general promotion through the media;
    - b) development of applications specific to sectors such as education, banking, health care, government services, etc.

- Developing partnerships with individual countries and other international organizations, development banks and regional organizations to develop comprehensive, coordinated one-stop shops for developing countries to tap into to enhance their telecommunication/ICT objectives.
- Developing outreach methods to industry in developed and developing countries to use as a basis for creating databases of potential investors.
- Developing partnerships with industry to leverage the financial, technical and management resources of industry with the various skills and prestige of ITU.
- Working with countries to develop strategies that promote local entrepreneurship in telecommunication/ICT including:
  - developing packages of financial and other incentives for SMEs;
  - developing tools for SMEs including:
    - a) techniques for developing business models;
    - b) one-stop shops for SMEs for legal, marketing and financing advice;
    - c) creation of business incubators and technology/business parks;
    - d) access to infrastructure;
    - e) access to low-cost PCs, terminals, and other devices/supplies;
    - f) techniques for establishing trade/business associations.
- Developing more useful indicators to assess technology diffusion in developing markets;
- Developing best-practices guides related to attracting investment;
- Assisting countries with technical advice related to spectrum planning, technology applications, numbering, standards, network design/planning expertise, etc.

## 8. Final thought

To conclude on a note of realism, there is no doubt that developing markets are, in general, riskier than developed ones, but may provide better return on invested capital. There is also no doubt that developing markets present growth opportunities that do not exist in most segments of the telecommunication/ICT sector in more mature markets. Governments and regional organizations, like ITU, need to do what they can to make the opportunities more attractive and investors need to do their homework to precisely understand the nature of the opportunities in developing markets.

The publication will be presented to the first stage of the World Summit on the Information Society (WSIS), scheduled to take place 10-12 December, 2003 in Geneva, Switzerland. The WSIS provides a unique opportunity for Heads of State, Executive Heads of United Nations agencies, industry leaders, non-governmental organizations, the media, civil society and other key stakeholders to assemble to develop a better understanding of the impact on the international community of the dramatic developments in telecommunications and ICTs in today's information society.

For more information on this report and other activities of the Market, Economics and Finance Unit of the Telecommunication Development Bureau of ITU, visit [www.itu.int/ITU-D/finance/](http://www.itu.int/ITU-D/finance/).

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