



# INTERNATIONAL TELECOMMUNICATION UNION TELECOMMUNICATION DEVELOPMENT BUREAU

**WORLD TELECOMMUNICATION DEVELOPMENT  
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**COMMITTEE B**

## **United States of America**

### **PROPOSED NEW QUESTION**

#### **PROMOTING INTERNET INFRASTRUCTURE IN DEVELOPING COUNTRIES**

##### **1 Statement of situation**

Currently referred to as the "network of networks," the Internet is widely considered to be a prototype of the Global Information Infrastructure (GII) or Global Information Society (GIS) of the not-so-distant future. The national and sub-national networks that comprise the Internet are considered by many to be the present and future models for National Information Infrastructures (NIIs). The technical, policy, economic, and societal challenges posed by the Internet and the global connectivity it facilitates reflect the challenges and opportunities inherent in creating the global village. For this reason, multilateral organizations like the ITU will continue to carefully consider Internet issues as they mediate and coordinate multinational issues affecting telecommunications.

While ITU statistics indicate that the Internet has sustained annual growth rates in excess of 100% over the last ten years, approximately 97% of Internet users are in the high-income countries which account for just 15% of the world's population. As of January 1997, Africa had 0.6% of the Internet hosts in existence; Latin America and the Caribbean, 1.0%; and Asia, 6.3%. The ITU has estimated that among low income countries only 17 persons out of every 1 million have Internet access. Given the well-known benefits of access to information and telecommunications development, it becomes clear that if the prospect of a global village is ever to be truly realized, increased participation by developing countries is crucial. The ultimate object of studying this issue, then, will be to produce and facilitate the creation of first-class information citizens in developing countries - providers as well as consumers of information - via bandwidth-rich networks capable of handling advanced digital applications.

A key challenge for developing countries in the Information Age will be to build the infrastructure necessary to capture the full social and economic benefits of the Internet. To date, such efforts have been hampered by the lack of underlying infrastructure and human resources. The ITU-D can help

foster the development of the Internet in developing countries by helping to create a pro-competitive, policy environment that attracts private investment and results in low user costs. In cooperation with other international organizations and the private sector, the ITU may also help developing countries build capacity for technical expertise by training personnel in relevant information technology.

Certain unique characteristics of the Internet that account for its rapid evolution may well be instructive for infrastructure development generally. In particular, its freely distributed, standardized protocols, packet-switched, digital architecture, interoperability of diverse networks, decentralized administration, and extensive coordination among interested parties, may be most relevant. Developing countries looking for innovative ways to build their network may find that some of these characteristics can inform their decisions on infrastructure deployment. More importantly, the development of a network suitable for Internet service will extend existing infrastructure, thus tangibly contributing to nationally-defined universal service aims. Moreover, the Internet holds the promise of making access to information widely available on a profound scale, furthering economic and social benefits. Telecommunications and access to information have proven to be key determinants of international competitiveness. The correlation between information, communication, and economic growth is well known.

The Internet is providing new opportunities for distance learning, telemedicine, and electronic commerce that could particularly benefit citizens of developing countries. Through the Internet, children are able to access the digitized contents of libraries around the world. Schools are able to expand their course offerings by sharing their instructors over the Internet. In the health field, telemedicine allows medical specialists to bring their expertise to patients around the world. Rural para-professionals equipped with an Internet link can consult medical databases remotely.

The Internet is also a low-cost gateway to the global economy. As the ITU noted in its World Telecommunication Development Report for 1996, "the beauty of commerce over the Internet is that it links millions of potential buyers and sellers around the world regardless of geographical and temporal boundaries." Small, medium, and large businesses stand to benefit from much-lowered transaction costs and will have access to national, regional, and global markets. This will benefit business users and consumers alike.

The potential benefits to agriculture are also great. Through the Internet, farmers can determine market prices as well as locate and communicate with buyers worldwide at a very low cost. In a global market, access to timely market information is crucial in getting the best price for goods. Such information allows farmers to make informed decisions about the type and amount of crops they should plant for the coming season. The Internet also gives farmers access to up-to-date information on crop production, disease prevention and marketing information. Numerous agricultural research institutes maintain World Wide Web sites containing extensive information on agricultural production and related topics.

Developing countries stand to benefit from deployment of the Internet both in network build-out and in the economic and social development that naturally occurs with greater access to information. A blueprint or template describing the best methods to achieve Internet development would increase participation by developing countries in this powerful medium for information distribution, and help secure their place in the emerging GII.

## **2 Issue proposed for study**

This question is directed toward providing practical suggestions for increasing Internet infrastructure build-out. In particular, it focuses on how to create a capital-attracting, pro-competitive policy environment that will foster infrastructure build-out, as well as the policy environment suited to best foster Internet development. This question is also geared toward developing human capacity in technical expertise related to the Internet.

The study group would:

- 1) develop a set of guidelines for government officials to use in creating a policy environment that fosters development of Internet infrastructure;
- 2) identify the technological options available to achieve Internet build-out, and prepare a technology-neutral guide to options for Internet build-out;
- 3) determine how best to build human capacity for technical expertise in the private sector and among developing country officials.

Among the issues to be examined are:

- all communications infrastructure, including degree of digitization, number of Internet host computers, number of personal computers,
- teledensity,
- plans for network build-out,
- universal service goals,
- the regulatory environment: i.e., policies regarding liberalization; privatization; competition; interconnection and pricing policies; Internet technology and service; access to information Internet Service Provider licensing policies; taxes and customs duties on information technology.

## **3 Description of expected output**

The output produced during this study should be divided into three parts that correspond to the three issues proposed above for study: a best practices guide to creating an Internet-friendly policy environment; a technology-neutral guide on Internet build-out options; and a strategy and work plan for building capacity in technical expertise among private sector and government officials in the developing world.

Based on the best practices recommendations, a given country could gauge its "Internet readiness" and identify which aspects of its sector need modifying or restructuring in order to facilitate Internet development. "Internet friendly zones" could be identified so that countries most ready for Internet deployment could be linked with members of the private sector prepared to assist in this development. In addition, strategies for regional approaches could be identified and facilitated.

## **4 Required timing of the expected output**

Because of the dynamic nature of Internet developments and the immediate need to address access shortfalls in the developing world, information gathered for the study should be disseminated without waiting for a final product. Information should be made available at a special Web site as the study group completes discrete segments of its work.

- Develop and distribute survey questions within 2 months of the beginning of the study period.
- Obtain results within 4 months of the beginning of the study period; post survey results on the World Wide Web as received.
- Release a preliminary report based on survey results describing the best policy environment for Internet development within 6 months.
- Release the final report containing recommendations on best practices and "Internet-friendly zones" within 10 months from the beginning of the study period.
- Receive contributions on technological options for Internet development and relevant training available within 4 months of the beginning of the study period.
- Post technology-neutral descriptions on the World Wide Web within 6 months of the beginning of the study period.
- Release final report on technology options within 10 months of the beginning of the study period.
- Compile a list of the training resources made available by the private sector, international organizations and elsewhere for government and private sector members. Post on the Web site within 6 months of the beginning of the study period.

## **5 Proposers/Sponsors requesting study of the issue**

Many countries in the Asia-Pacific region expressed an interest in exploring Internet issues to assist them in understanding the implications of the Internet on their regulatory regimes and to help them formulate workable policy regarding the Internet. In response, the ITU plans to organize an electronic discussion forum to consider Internet issues. The United States suggests that an additional component be included in the ITU's study of these issues - the lessons and implications the Internet will have on infrastructure development.

In addition, this question builds on the work undertaken under the Buenos Aires Action Plan, specifically Programme 12 (Development of Telematics and Computer Networks) and WTDC-94 Recommendation 1 (Applications to Health and Other Social Services).

## **6 Sources of input required for carrying out the study**

This question provides an opportunity for substantial participation by the private sector, not only in contributing information on technology options and private sector sources of training available for Internet development, but to share their perspective on the best policy or regulatory environment for Internet development.

By identifying countries that are most ready for Internet development and linking them with private sector members prepared to assist such countries in both infrastructure development and sustainable human resource capacity building through appropriate training, this endeavor may assist the ITU in its partnership initiatives.

Input will be needed from administrations, the private sector, and PTTs.

ITU telecommunications indicators; other existing reports from the ITU and other international organizations like the OECD, colloquia, interviews, and materials from regional telecommunications organizations would be used where available.

## 7 Target audience for the output

### a) Matrix

	Developed countries	Developing countries	LDCs
Telecom policy-makers		XX	XX
Telecom regulators		XX	XX
Service providers	XX	XX	XX
Manufacturers	XX		

### b) Target audience - who specifically will use the output

ITU membership, the private sector, developing and developed country administrations, national policy-makers from around the world, global policy makers, regional telecommunications organizations, the international business community, the international donor community, the academic community, NGOs interested in sustainable development particularly through telecommunications, the Internet Society, ITU staff.

## 8 Method proposed for handling this issue

Two surveys would be sent to the ITU membership; one to administrations seeking: a) information on their existing policies etc., as described above in section 2; and b) asking that they identify their training needs associated with Internet service and facilities.

In developing the recommendations of best policy practices, particular attention would be given to those countries having a high degree of Internet penetration or high Internet growth rates.

A second survey would be sent to private sector members, seeking: a) their perspective on the optimal policy environment for Internet development; b) information on various technological options for providing Internet services; and c) asking that they identify training offered by their company that would be relevant to Internet service or network deployment.

A project group or task team would be responsible for directly contacting non-ITU organizations in order to determine what relevant training opportunities they make available to developing countries. The project team or task force could act in concert with BDT staff.

## 9 Coordination requirements of the study

The project team should coordinate with ITU-D Study Group 2 Question 3/1 on network development and with the Telecommunication Standardization Sector study question on the GII.