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WAYS OF ENHANCING ACCESS TO AND USE OF INFORMATION NETWORKS AND DISTRIBUTION CHANNELS

Report by the UNCTAD secretariat

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I. INTRODUCTION

1. Under Item 3(e) of its work programme, the Standing Committee is requested to explore ways and means of enhancing access to and use of distribution channels and information networks in pursuing developing competitive service sectors in developing countries and increasing their participation in world trade in services.

2. While for some services distribution takes place through more traditional channels such as through the movement of goods or persons, an increasing variety of services can be supplied through information networks in that the information network not only provides information about the services offers, but constitutes the channel for distributing the service itself. The perception that access to global information networks and distribution channels had become a crucial factor in increasing their participation in international trade in services, led developing countries to press for recognition of the need to include issues relating such access into the Uruguay Round at the Montreal Ministerial Review in 1988. UNCTAD had addressed the phenomena of "networking" and "networked economy", and a spectrum of problems have been identified as impeding access to networks and distribution channels. The Cartagena Commitment agreed that all governments should support the achievement of the access of developing countries to distribution channels and information networks.

3. Article IV of the General Agreement on Trade in Services (GATS) provides for the possibility of facilitating the increased participation of developing countries in world trade in services through negotiated specific commitments relating to the improvement of their access to distribution channels and information networks. Article XIX permits developing countries, in providing access to foreign suppliers, to attach conditions aimed at achieving the objectives of Article IV, such as that of providing access to information networks and distribution channels. The Annex on Telecommunications also provides that condition relate to export of telecommunications services can be attached to the use of the public telecommunication transport network. For developing countries to derive effective benefit from such provisions, however, it is essential that they determine what is to be negotiated and with whom, and how can they strengthen their negotiating position in such negotiations.

4. Against this background, the Secretary-General of UNCTAD decided to organize an Expert Group charged with the task of assisting the Standing Committee to improve its understanding of the issues involved in enhancing access to and use of information networks and distribution channels. The Expert Group Meeting on Access to and Use of Information Networks was held on 1- 3 February 1995 in Madrid, with the support of the Fundacion para el Fomento de la Informacion Automatizada (FUINCA). The Expert Group examined the issues related to access to distribution channels and information networks, focusing on trade in business services, professional services, audiovisual services and tourism. The Expert group specifically addressed the questions relating to the identification of (i) barriers which impede access to and use of information networks and distribution channels in sectors where such use and access is crucial to increased exports of services; (ii) possible actions to reduce or remove such barriers, including through (a) intergovernmental negotiations or government-private sector negotiations as foreseen in Article IV and Article XIX of the GATS, (b) autonomous action at the national level, and (c) supportive actions by the international community.

5. This report draws upon the contributions made in the Expert Group Meeting, and is circulated to the Standing Committee for the comments of members. It does not attempt to address the spectrum of issues involved in access to and use of information networks and distribution channels, but focuses on those of particular relevance to the objective of increasing developing countries' participation in international trade in services.

II. ACCESS AND DISTRIBUTION

6. Distribution is about accessibility of the product to users and consumers. The information network may provide information about the service being provided, while the service itself may be provided separately by the producer. To an ever increasing extent the information network is becoming the distribution channels for a variety of services. Furthermore, the distribution channel may also act as a medium of service production itself. This applies in some cases of information networks, especially those related to computer and software services, whereby the information network also acts as a medium through which the "finished product" (software or data) is stored and transmitted. Increasingly, distribution channels and information networks share one feature in common, namely, their dependence on telecommunications.

i. Activity-based distribution channels

7. One of the most traditional form of distribution channel is human interaction through established social and economic networks. Few businesses nowadays rely purely on word of mouth recommendations, but the "human relations" channel remains important. Information networks such as Internet, which is discussed below, make it possible to have people-to-people contacts without movement of persons, in fact, business application of Internet has been increasing in developed countries. An institutionalized form of people-to-people distribution networks are trade organizations, through activity-based interactions, such as through trade fairs, missions, delegations and exhibitions. Trade associations are the institutional means of consolidating interactions based on interpersonal contacts. The essential aspect is "participation" in the network. The link between downstream services of the market and "upstream services" e.g. the design of the product has been stressed in earlier UNCTAD documentation where the information network is the distribution channel. This feedback can be quite rapid, assisting the service provider to adapt his product to the market.

ii. Multi-unit distribution network

8. Another type of traditional distribution channel is what can be described as multi-unit distribution network, typically of more well-developed industries. Many of these have a sectoral character, as in the case of banks, restaurants, laundries, hairdressers, etc. In other cases, the distribution channel may be multi-functional or multisector, for example, a hotel chain is a distribution channel for many different types of tourism and travel-related services. The individual units of the distribution channel within a sector may or may not be networked. They almost certainly are networked in a proprietary, chain store situation, but there may also be other looser forms of networks, such as through franchises, cooperative agreements, or trade associations.

iii. Public media distribution channel

9. The public media are important media of communication. Whether the content carried is commercial, such as news and advertisement, or non-commercial, such as literature or arts, the global media now provides an important network through which information is relayed to most corners of the world. Both the print media, i.e. newspaper, magazines and trade journals, and the electronic media, i.e. television and radio are subject to regulations various reasons. The media industries act as a distribution channel for the services of film, radio programmes, literature, news reporting, etc. are delivered.

iv. Computer-based information networks

10. As noted below, computer-based networks are now extensively used in most service sectors, in particular to support the global operations of TNC. The most popular types of networks are what can be classified as "corporate networks". These can be categorized into "intracorporate", "transcorporate" and

"intercorporate" networks. The purpose of intracorporate networks is that of coordinating day-to-day activities by enabling end-users within the same company to share information and processing capacity, while transcorporate networks take the form of links between a firm and its closer suppliers and partners. Intercorporate networks implement corporate alliances enabling corporations to share strategic information, technological know-how, cooperate in joint ventures etc., are aimed at affecting the environment in which a group of firms operate, particularly with respect to setting and implementing common information standard. Many of the corporate networks are proprietary in nature, such as computer reservation system (CRS) of airlines, electronic financial services networks, and private business intelligence networks. Often the network is part of a range of industries which are increasingly integrated with each other. The CRS, for example, is closely related to the airlines, travel, hotels and conference industries, other than being a computer network service. Besides as a source of information, these networks are often also the means through which a service is transacted. Thus a CRS not only provides information on airlines, but offers booking of tickets simultaneously. Likewise, a banking electronic network not only allows bank details to be revealed, but also bank transactions to be effected.

11. The implications of computer-based information networks for foreign service providers differs depending on how such networks develop. Situations where each service provider is responsible for the development and operation of one's own proprietary electronic distribution network can put foreign exporters - especially those of developing countries - at a distinct disadvantage as such networks come to represent prerequisites for full market participation and therefore potential barriers to entry. By contrast, there are situations when small, remote providers can benefit disproportionately from the availability of publicly or privately provided electronic distribution networks that will work to put all providers on a more or less equal footing. Another type of electronic network is trade data networks run by trade promotional bodies. Less proprietary in nature and hence more open to users, these networks are also less likely to be sector-specific, or to allow businesses to be transacted via the network. The "information superhighway" is emerging as medium for storage and exchange of information. This is, in effect, a loose network of independent computer databases connected via telecommunications, the most famous of which being the Internet, a system of interconnected computer network which may be a storage or distribution medium for virtually any information. The World Wide Web is another protocol which allows information to be stored at one end of the Internet to be accessible through another end.

Box 1
Internet and Trade

The use of Internet for trade is expected to increase dramatically in the coming years. It is estimated that in the year 2000 Internet will be used to purchase $600 billion of goods and services world-wide, accounting for 8 per cent of the total goods and services purchased that year. Major telecommunications carriers in the United States and in Europe are extending their services with respect to the Internet. For example, MCI and BT are developing secure software for commercial Internet transactions, a platform to offer on-line business services using the World Wide Web, as well as high and low-speed Internet access, transport and consulting services.[a] MCI, which has provide backbone services to Internet in the United States for several years, is launching Marketplace MCI, "an electronic shopping mall", where small and medium-sized companies can set up electronic storefronts for $2000 to $3000 per month.[b] It is likely that Internet may increasingly be used for the transmission of advertising images to potential customers on account of its cost advantage, since the Multipurpose Internet Mail Extensions (MINM) enable an Internet message to encapsulate fax, sound and video. Virtual spaces on the Internet, where developing country firms can display their products, would be an important potential means for advertising and selling in international markets in the coming decades.[c]

Other commercial uses of the Internet include communicating with customers and suppliers, as well as accessing to specific on-line services. Commercial users can also join mailing lists to keep abreast of general issues affecting their industries, through mailing lists associated with topics such as technology transfer and country or industry specific studies or make use of on-line services such as *USENET News*[d] or *Internet Relay Chat*[e].

However, a number of external factors seem to affect the adoption of Internet as mechanism for increased trade. The issue of standards is becoming increasingly important, especially with respect to the convergence of the message handling systems of the Internet, interoperability among standards for electronic data interchange (EDI), and adoption of a world-wide set of standards for secure information coding (encryption) and user access authentication. Furthermore, governmental prohibition of export of encryption algorithms can seriously affect the potential of software developers in creating network intensive applications that can interact with the existing infrastructure of secure software products on the Internet. Finally, there is a need for information on specialized networks that could be of immediate interest to developing countries, as such information would be crucial for facilitating developing-country participation in the Internet.[f]

Multilateral efforts may be a necessary response to these problems, as the use of international standards, multilateral solutions to the problems posed by export restrictions on encryption software,and international arrangements for the provision of information on specialized networks for developing countries may warrant serious consideration.

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[a] Kenneth Hart, "Internet Envy: Carriers Seek A Piece in the Action", *Communications Week International*, issue 136, 12 december 1994.
[b] *Telecommunications Reports*, 28 November 1994.
[c] Jose Diaz, "Factors Influencing the Use of the Internet for Electronic Commerce in Developing Countries: The Case of the Dominican Republic", paper presented at the meeting of the Group of Experts on Access to Information Networks and Distribution Channels, UNCTAD/FUINCA, Madrid, 1-3 February 1995.
[d] USENET News is one of the largest, most comprehensive "news" systems in the world. Members of news groups receive messages and news articles according to their specific group profile.
[e] Internet Relay Chat is an interactive, real-time conversation system.
[f] See Jose Diaz, *op. cit.*

III. THE IMPORTANCE OF ACCESS TO NETWORKS AND DISTRIBUTION CHANNELS TO SPECIFIC SERVICE SECTORS

i. Business Services

12. In the business service sector, apart from computer related services which will be discussed subsequently, existing networks and distribution channels are mostly intra-corporate or at most trans-corporate (i.e. between the corporation and its clients/suppliers). Of all business services, management consultancy perhaps encompasses the widest range of specialized disciplines covering the strategic, operational, technological and organizational aspects of the business of its clients. Being a knowledge intensive service, information networks play a significant role in management consultancy's activities. The largest advertising and marketing communication groups have been actively exploring ways to make better use of the new information technologies, attempting to improve the links between their various operations by introducing the latest hardware and software technologies to form their own electronic highways so as to ensure efficient transfer of knowledge and experience between their personnel in different locations and functions. A substantial investment programme in information technology has been launched with the aim of producing better results for advertisers and of communicating both inter-office and with clients in a more effective and timely way. Market research and public opinion polling services have been characterized by a rapid rise in the concentration rate over the last decade. The major players like A.C. Nielsen, the GfK Group, IRI and Sofrès are

intensive users of modern computing and telecom facilities and several have extensive proprietary networks. These networks provide the clients with direct desktop access to its marketing research information thus giving them a capability of timely external and internal data integration.

- *Computer related services*

13. Information networks, especially telecommunication networks, constitute one of the modes of delivery for software services. The use of networks can function as a tool for increased participation in international trade in software services on account of the enhanced ability it brings to firms in altering production and delivery processes, in speeding up the delivery of services, and in internationalizing products and services. Software like telecommunications is an intermediate service in that it is often an input into the production and delivery of other services. There is a relationship of mutual dependence and reinforcement between telecommunications and software services while the state of telecommunication networks can be a crucial determinant of trade in software services, the latter provides a major input into the functioning of telecommunication services, e.g in telephone switching and videotex. Thus, difficulties with respect to one sector will have an impact on the other. For example, the unreliability of the quality of telecommunication lines as well as high tariffs in long-distance telecommunication have been cited by some developing-country firms as impeding them from making better use of the possibilities of remote data and software services provided by the use of information networks.

14. The increasing use of information networks for service delivery have enabled developing country service providers in the software and data processing sectors to gain new market opportunities. Remote data entry, data processing, and software development are areas where new opportunities have arisen. Some of the developed-country airlines have transferred their accounting and other "back-office" services to developing-country locations, using data transmission via satellites. Similar opportunities are being explored by financial services companies with respect to back-office operations such as credit-card transaction processing services and by mail order distribution companies in relation to order-processing services. Off-shore work, in these cases, takes advantage of the different time zones and low labour costs, however, efforts have to be made to keep ahead of advances in technology which are making basic data entry functions unnecessary.

15. Software services can be delivered through electronic information networks - facilitating cross-border trade as an important mode of delivery. However, even in the case of software packages, remote data entry or remote programming, the extent of cross-border trade is limited. The reasons for this are:

a. The importance of access to local networks of distributors: Most of the software around the world continues to be distributed either by manufacturers or by large, independent software firms. They often give preference to their own products or to fast-selling packages. When a small firm manages to develop a successful software, larger firms often try to buy its outright rather than attempt to compete with it. Discrimination by large-scale software distributors as well as by equipment vendors pose serious difficulties for developing-country firms that wish to penetrate foreign software markets. All these make it necessary for software firms often to establish some commercial presence in their markets for effective functioning.

b. The importance of client/producer relationship: In custom-built software and systems integration, cross-border trade often functions not as a substitute but as complementary to other modes of trade. Much of the production depends on direct client/producer interaction, and sometimes the producer may even need to work directly on the client's computer. Off-shore development often requires the provision of on-site services such as specification of functional requirements, sign-off on development

plans as well as on acceptance plans, testing, and training. For exporters of software service, temporary mobility of personnel is crucial, and visa and work permit restrictions in certain target markets in developed countries have been perceived as serious obstacles to trade in software services by some developing-country service suppliers. However, increased reliance on information networks for the delivery of software services can be one response to this problem. In the case of developing countries such as India, the main source of export earnings from the software sector is shifting from the provision of consultancy services through the temporary mobility of personnel to off-shore development work, India has allowed dedicated satellite links to be used by domestic software firms to provide an overseas customer with a software team which can serve as an extension of his own operations, using his computer installation, without having to set up business in India.

16. Many developing countries have been using relationships with foreign firms as a means for enhancing local software capabilities. Several Asia-Pacific countries show examples of this. Republic of Korea has relied on joint ventures between global and local firms, while India has made use of subcontracting and personnel dispatching, also called "body-shopping", and exclusively export-oriented subsidiaries of foreign firms for increasing local skills as well as service exports.

17. Regulations prevalent in the country of the consumer can sometimes pose difficulties for off-shore providers in servicing their clients. For example, developing country firms can be impeded in the provision of off-shore information services to financial service companies, e.g. in custodial services, by high minimum net-worth requirements in the client's country. As this requirement is related to the liability to investors whose assets are being serviced, a possible solution could be an insurance requirement instead of a minimum net-worth requirement. Regulations that stipulate the processing of data within the country also act as impediments to the provision of data processing services off-site. There may be a need to rethink the entire issue of professional liabilities in the light of changes in technology and in the mode of delivery. Developing countries would also need to adopt appropriate regulations governing the use of general data networks and network crime so that a symmetries in regulation do not become occasions for barriers to trade.

Box 2

Developing Information Services: India's Case

Significant growth of software services in the past several years in India has led to development of various information industries such as revenue-accounting services for airlines, financial services back-room operations, mail-order processing and offshore publication. Also the economic reform process initiation in India in 1991 has created growing interest in India as a place to invest, and it has created an opportunity to Indian entrepreneurs to provide information on India in electronic form as electronic information-content. Two relatively successful examples are: (i) JURIS - A Legal Database of Court Judgements; and (ii) CAPITALINE - Corporate Financials On-Line. One of the major constraints to develop off-shore electronic information services is a high cost of data-communication links. The total cost of such links often cost some $ 120,000 per year. High telecommunications tariff is also cited as a constraint to develop information services in India.

Development of information services raises some questions on legislative aspect such as: As general data networks are constructed, what are the liabilities of the network provider? Should it be liable to a service provider using that net for loss-of-profit? Who is liable for incorrect information received by a user? What if there is malicious use of a network such as by a hacker who steals passwords or credit card number? In the absence of a low governing data networks, i.e. liabilities and rights, these issues could become caught up in years of litigation and evolve painfully and slowly as each court case decided.

It has been pointed out that just as there is need for legislation, there is also a need for training in detection of network crime and for the establishment of mechanisms for the award of penalties and restitution to victims of crime and fraud.

Although the information for this box was drawn from India's experience, most countries have not sufficiently addressed questions of liabilities and rights, as well as adequacy of penalties or restitution to victims. In the OECD countries, legislations in this regard has been reviewed, however, it is an evolving process. Development of information industries progresses in developing countries, necessity of enhancing legislative aspect on data networks becomes urgent.

Source: Prakash Hebalkar, op.cit.

ii. Professional services

18 Professional services typically involve knowledge and skills that respond to the needs of producers, consumers or both, and are usually restricted to licensed professionals such as accountants, auditors, lawyers, etc. The large accounting firms and engineering consultancies providing services on a broad international scale are intensive users of information networks. However, it appears that the application of such networks by law firms is limited except for a few large law firms practicing internationally. Use of electronic computer information network for common number, electronic library, video conferencing and electronic-mail is a way of expanding business linking partners and clients domestically and abroad. An elaborate intra-corporate network helps them to achieve coordination and a learning effect between professionals spread over the world. The networks for example allow them to check whether similar problems have already been dealt with elsewhere in the company and how they were solved. Firms can retrieve information in various areas from databases held by national and international institutions such as Library of Congress, World Bank. The development of national information networks would be an important step in enabling professional service firms to make effective use of network culture. Governments may have to initiate projects for building up national databases with the appropriate critical mass, or provide a profit maximizing legal environment to let the private sector compete on developing such national data bases.

19 The main difficulties that developing countries face with respect to accessing and using information networks and distribution channels to increase their participation in world trade in professional services result mainly from a shortage of technological, financial and human resources. Association with TNCs remains the major mode of technology transfer and market penetration in the case of several professional services such as accounting, legal consultancy, etc. Although auditing and accounting are intensively local affairs, requiring detailed knowledge of local rules and regulations, TNCs appear to have a major competitive advantage over local firms. This is partly due to the more advanced level of their specialized skills such as consulting and to their ability to buy and apply information technologies, but reputation - the brand name - seems to play a major role in this. Collaboration with such firms may be a way for developing countries to penetrate distribution channels in such cases. This is particularly relevant in accounting services where large international firms often deliver their services by attaching their name to local products and local providers, with most of the benefit going to local partners, in a form of multi-unit distribution network. Since such collaboration involves employment of local personnel, it often entails transfer of technology and skills and their eventual diffusion through "job-hopping".

20 Questions of telecommunications infrastructure may become even more relevant as an increasing number of multinational providers of professional business services will acquire their own intracorporate communications systems with their subsidiaries or branches in developing-country markets, for example

through satellites, thus overcoming the shortcomings of the public telecommunications systems. Developing countries wishing to expand their service exports need to build up their basic and value added telephone infrastructure to remain part of the global market. Late-comer countries face advantages and disadvantages with respect to telecom infrastructures. On the one hand, mobile telephones, which are quicker and cheaper to set up than land lines, while fibre-optic cables, that cost the same as copper-cables, have much higher capacity. On the other hand, the start-up phase of information-networking with new telecom services such as EDI and E-mail can prove to long and expensive.

iii. Audiovisual Services

21 The film industry is particularly dependent on access to distribution channels. Virtually all production costs are incurred in turning out the first copy of the film. The subsequent return thus depends almost entirely on how and when the film is distributed. There are about 65 film-producing countries in the world, with a total output of 4,000 to 4,500 films per year. More than half of these are produced by Asia-Pacific countries. Hong Kong is the main exporter of films in the region, especially for Singapore, Malaysia, Taiwan province and the Republic of Korea. Distribution of films involves several parties, namely, the producer, distributor, exhibitor, and exporter/importers if the film is internationally traded. However, for the total exports of films in the world, the United States is the major exporting country. Being in a position to control the timing and duration of film shows, distributors occupy a very powerful position in the film industry.

22 The biggest practical barrier to market access for developing country producers may lie in the advanced and highly integrated state of the media industry in Western societies. Here vertical and horizontal integration between production and distribution seems to pose the most serious impediment to new entrants, especially from developing countries, in accessing and distributing their media services products in developed-country markets. United States firms, which dominate the media product distribution market overwhelmingly favour domestic products because of their larger, lower risk market and because they frequently produce the products themselves. Furthermore, since the film exhibition market in the United States is organized around advances and guarantees rather than royalties, there are no incentives or even allowances to try out higher risk non-domestic products.

Box 3

Integration of Production and Distribution in Films

Film industries are characterized by the integration of production and distribution (i.e. a firm both produces and distributes a product). According to the U.S. National Association of Theater Owners (NATO), ten exhibition companies owned about 65% of the exhibition screens in the U.S. in the late 1980s. Their profit concentration was much greater because the majority of these screens were in high grossing urban locations. Distributors also have informal agreements with the exhibitors they do not own to maintain a small number of exhibition chains whose large cash reserves allow them to pay the sizable advances required by the distributors. In Hong Kong, a film producer may have the finished product distributed locally through five Hong Kong distributors, who control most of the cinemas network in Hong Kong; or the product may be shown to buyers all over the world through exhibitions or film festivals. Typically, the international traders of films are companies which have long-standing contracts with overseas' producers or distributors. In some cases, the producer, distributor and trader belong to the same group, which has its own international network, e.g. Golden Harvest of Hong Kong. Because the amount of films that can be shown in cinemas is a limited, producers have to compete with each other for their films to be shown. In Hong Kong, the cinema network has the capacity to accommodates about 300 films per year.

23 While there are serious barriers to entry in industrialized countries, especially in the United States, the largest single market, the international market is growing rapidly with increased demand for media products. The ability to enter this developing international markets depends more on the question of scale than that of nationality. In order to tap the opportunity for entering the emerging markets, it is necessary to develop market intermediaries that can provide capital and access to smaller producers. Some alliance of developing country producers in forming such intermediaries should be considered.

24 In television programming too, the general tendency is for distributors to produce the products themselves, since programming is typically used or sold across distribution systems. If distributors develop their own programming, they can distribute it across their own networks and sell it to other systems at no additional cost and reap the additional revenues, whereas if they purchase imports, this would entail an additional cost each time they broadcast a film or a programme. Thus even when there is a potential market for imports to fill in programming slots, the integration between production and distribution seems to work against it. However, the addition of new channels oriented towards broadly defined market segments, e.g. the Spanish or Chinese speaking populations in the United States may occasion the introduction of new imports. The segmentation of foreign markets and the demand for specialized programming have also resulted in an increase potential international markets for developing country products. Also, the advent of digitalization in telecommunications has opened a new way to transmit films to audiences, i.e. "video-on-demand" services through the telephone line.

25 Direct broadcast satellites, which transmit a digitally encoded signal directly to the viewers' homes constitute the most important broadcasting strategy for developing countries as they cover large geographical areas with their "foot prints" and enable the international delivery of video programming. Satellites also interact with cable systems, providing cable systems with a low cost way of networking thousands of cable systems. In Asia, the emerging trend is to use satellite services for pan-Asian television services to homes, businesses and hotels. The size of linguistic communities in Asia has forced program producers to develop programming specifically addressed to such communities, and this may result in increased opportunities for exports of television products for countries in the region. In Latin America, over the years, there has been an increased exchange of television programmes within the region and outside the region.

26 Satellite broadcasting is an extremely rapidly growing market, and is very likely that satellite broadcasters will respond to demand from segmented markets and demand for specialized programming. This implies that producers will have opportunities to develop audiences which have been difficult to reach via conventional cinema showings. In order to take advantage of the emerging opportunity, there have to be efforts to develop the niche markets by developing country producers.

27 Fibre optic cables are perceived by many as the base system for future information and media product delivery. This is on account of their revenue potential (subscriber fees, advertising revenues, and pay-per-view arrangements) and their potential interactive capacity. Telecommunication infrastructures once again prove crucial for the development of the television sector. Key issues facing developing countries in this respect are:

- encouraging and regulating media product distributor investment so as to maximize the revenue that can be used for basic infrastructural investments, including through differentiated regional initiatives, and

- development of multipurpose infrastructures that can handle a variety of service transactions including those in financial services.

28 Production capacity of audiovisual products need to go in parallel with

swiftly expanding distribution capacity. In this regard, developing countries need to be concerned with developing sufficient production capacity to match that of international distributors.

iv. Tourism

29 The tourism industry is a combination of various service industries. The success of the tourism service industries depends upon understanding the customers' expectations and offering the right combination of services, effectively bridging the gap between suppliers and consumers. This gap is bridged through the application of information technology, in the form of computerized global distribution systems that allow the display of availability, reservation and ticket emission for tourist products at an international scale. It has become increasingly important for the producers of tourism services to have access to such distribution systems to participate effectively many segments of the tourism market. As the global distribution systems evolve and compete with one another, the range of services they offer have multiplied. Beginning with reservation of air tickets, and having extended to hotel bookings, ferries, tour operations and other services, these systems often provide the travel agent with back office accounting and management services.

30 There are information and network services providers who supply their services to clients in a variety of sectors in tourism-related activities. For example, SITA operates one of world's largest international data networks, providing an extensive range of telecommunications and information services to a broad customer base that includes international airlines, major reservation systems, large hotel chains, tour operators, airports, transport companies, multinational organizations, and car rental firms. Its services include a wide range of telecommunications products, mobile air-ground communications, and airport services.

31 Computerized reservation systems (CRSs) provide on-line facilities for travel agents to make airline reservations and issue tickets. The systems are owned by a few international airlines. The first CRS started in the United States after the deregulation of the airlines industry in 1978. As a sophisticated distribution channel, CRS provides an information network to enhance the industry's competitiveness. The use of CRS has revolutionized operations, improving and speeding up all activities including the booking of flights, car rental, tours, hotels, and other related tourism services. The convergence of the CRS with the physical network of travel agents offers the consumer with more choice and better service more efficiently. For the travel/tourism industry, the results of the CRS is conclusive: It is a positive development which has brought about increasing number of the customers, market share, revenues, and enhanced performance of industry sub-sectors. Through CRS systems, new products and services are constantly being developed.

32 The early years of the use of CRSs, however, also evidenced a number of anti-competitive practices including a bias in display in favour of the owner airlines. Although airlines and CRS systems are often legally separate entities, in practice CRS is controlled by the large airlines and hotel network. ICAO listed the following among possible barriers to trade that could result from discriminatory behavior on the part of CRSs:

- priority accorded to the display of information of certain airlines,
- abuse of code-sharing,
- unreasonable contractual conditions with certain travel agents for displaying their products, and
- technical and commercial obstacles for limiting information on certain countries.

33 United States in 1992 and the European Community in 1993 enacted legislation to ensure neutrality of information in the display of CRSs. However, subsequent studies have pointed out that although the display is neutral, there is a "halo" effect generated by the CRS in favour of owner airlines, through the

volume of supplementary business generated by the CRS and by the use of training methods that favour reservations by a certain company.

34 Mega companies such as American Express which have extensive outlets, will have better bargaining power for use of the CRS. As a result, they can often obtain better terms on charges and preferential positions on the CRS screen. This is not the case for small companies. The problem will be even greater for small firms in developing countries, where lack of capital and technology prevent them from buying into and making effective use of CRS systems.

35 Local suppliers without access to international distribution networks are seriously disadvantaged in competition. For example, the inability of small hotels to be represented in travel agent database is an important case. Travel agents rely on computer databases as referral guide and they receive commissions based on using these data bases. Firms that are not listed are not worth investigating because they do not produce a commission.

Box 4

Commission Regulation (EC) No. 3652/93 on Computerized Reservation Systems for Air Transport Services

Regulation (EC) No. 3652/93 is to ensure that no discrimination exists on access, display, information loading, fees, conditions to participate in and terminate the participation in computerized reservation systems (CRS), among parent carriers, participating carriers and system vendors. Moreover, it is to ensure that competition among CRS exists in an oligopolistic market and that subscribers are able to switch from one system to another at short notice without penalty. The core aspects of the provisions include: (i) allowing any air carrier the opportunity to participate, on an equal and non-discriminatory basis; (ii) prohibiting to attach unreasonable conditions to any contract with a participating carrier; (iii) allowing a participating carrier to terminate its contract with a system vendor on giving notice; (iv) ensuring displays generated by a CRS to be clear and non-discriminatory; (v) obliging a system vendor to make any of the distribution facilities of a CRS available to any subscriber on a non-discriminatory basis; (vi) prohibiting the system vendor to enter into any agreement with other system vendors with the object or effect of partitioning the market.

The Regulation entered into force on 1 January 1994 and will expire on 30 June 1998.

36 Small suppliers of tourism products, especially from developing countries, face a large number of difficulties in accessing to using of global distribution systems. Firstly, as late comers in the market, it is virtually impossible for developing country firms to create a new global distribution system due to the critical mass necessary for the launching of a system taking advantage of the economies of scale. In setting up a system, experience in reservation, technological mastery and financial means are crucially important. Secondly, although regulations require that the display of information is neutral on CRSs, the system tends to work in favour of bigger airlines that have larger number of flights. Developing country airlines, and smaller airlines in general are less frequently present on the screen. Furthermore, small airline and tour operators find the booking fees of the computerized reservations systems high as they are unable to take advantage of the reduced fees that arise from larger number of bookings. Here, facilitators - in the form of intermediate firms or associations of small users - could play an important role in linking themselves to the reservation systems and making all the bookings for their subscriber firms, thus taking advantage of the reduced booking fees that come with larger number of bookings. The government can set an appropriate legal framework to foster the development of associates or subsidize aspects of their operations as necessary. Such associates could cooperate to sponsor regional marketing shows to compete with the domestic shows in industrialized countries, which are dominated by large firms.

37 Producers of tourism products increasingly use national distribution

networks which are connected to global distribution systems. This is less expensive, and travel agents are able to access the information through multiservice terminals that allow the user to access a variety of information sources using the same terminal. Start in Germany and Savia in Spain are examples of this. The development of national distribution channels would be an important step for many developing countries to negotiate effective access to international information networks in this area.

38 The final sale of tourism, products in several developing countries is currently being handled primarily by international tour operators who contract hotel rooms from domestic hotel and resort owners in advance of the tourist high season. Hotel owners do not have the resources to invest in international advertisement campaigns and depend on tour operators for the resale of rooms in the international market. This gives tour operators an upper hand during negotiations as the operators basically set the price and conditions. Information networks may provide developing countries to present and sell their products to an international audience. As the end-user begins to increasingly access the service providers directly over a highly interactive media interface, the role of intermediaries begins to diminish. Virtual tourist applications on the Internet allows the potential customer to coordinate his travel needs through on-line network service, and this may provide small hotel owners in developing countries to establish direct contact with any Internet customer. However, in order to make effective use of such new trade opportunities, there is a need for change in attitudes towards networking as well as in the direction of proactive promotion policies. Here, once again, facilitators - in the form of intermediate firms or trade associations - may have a useful role to play.

39 To participate effectively in the international tourism market through information networks and distribution channels, developing countries may need to take into account the following imperatives:

- enhance the tourism products that can be traded through global distribution systems, including through the improvement of necessary infrastructures and strengthening of human resources,
- develop commercial agreements of global distribution systems through local partnerships, e.g with local airline companies who have close knowledge of local market conditions and enterprises,
- seek at an international level solutions to the problem of booking-fees (one such possible solution may consist in the travel agents paying for the bookings and the tourism service providers being free to reimburse them through a system of commissions)
- seek direct connections with the airline companies through "direct connect sell", when such facilities become available, and
- foster firms or associations that facilitate the participation of small tourist operators in global distribution systems by functioning as intermediaries.

40 One of the areas where multilateral efforts may be necessary would be the standardization of the electronic means of distribution of tourism services. There is a pronounced need for standardization of interfaces and of systems so that the cost of linking to a global distribution system can be reduced. Standardization with respect to the quality of distribution provided by the systems is also necessary. If true globalization of distribution systems is to be achieved, multilateral efforts would need to address making such systems accessible to countries with weaker buying power.

IV. OPPORTUNITIES AND BARRIERS TO ACCESS

i. Opportunities

41 The globalization of production has created new opportunities for developing countries to increase their participation in world trade in services through information networks. Globalization has meant that the phenomenon of the "externalization" of services production, which had been examined in earlier

UNCTAD studies is now taking place on a global scale. This provides the opportunity for many developing countries to become involved in the supply of a variety of "backoffice" services, among others. Their comparative advantage in this respect lies in their ability to supply what earlier UNCTAD documents have termed as "low cost high tech", and being able continually to upgrade both their skill and technical infrastructure as more simple data entry tasks are rendered obsolete through technological advance. It is noteworthy the European Commission has predicted that the vast majority of new jobs over the next decade is likely to be created in service sectors feeding the information infrastructure. Upgraded skills and technology transfer are both prerequisites for and results of effective access and participation in the networks. As the TNCs expand their corporate networks around the world as a means to penetrate and control markets in developing countries, it is essential, if developing countries are to translate the potential benefits of globalization into concrete economic benefits, that they devise means to gain access to these same networks so as to supply their own services along the same networks. At the same time the Internet, and the Information Superhighways may provide the opportunity for developing countries to export services outside the proprietary networks.

42 Supplying services through the cross-border mode via networks enables developing countries to export labour intensive services without facing the difficulties involved in the movement of labour across national frontiers. However, as indicated above, the movement of persons is often an essential complement to the supply of network services and the progressive liberalization of this mode is essential for developing countries to effectively extract benefits from the globalization process.

43 It would appear that enterprises, even in the United States have been slow to adopt their management styles to effectively make use of the possibilities presented by networking and to use open networks, such as Internet, to supply their services, rather than just information about their services. Developing country firms which can quickly adapt to this environment may be able to exploit new market opportunities.

ii. Barriers

44 A major problem facing developing countries in entering world markets in many service sectors has been the dominant position and integrated nature of the TNCs. It can be noted that barriers to distribution channels in audio-visual services and computer services in industrialized countries appear increasing as a result of progressive integration of producer, intermediaries and outlet. This poses a serious problem for developing country-firms in these sub-sectors, which do not possess financial means to establish their own distribution channels in these countries.

45 The possibilities presented for anti-competitive practices when control of the distribution channels is in the hands of the producers of the product or a service being distributed has been a classic problem for Competition Policy and Anti-Trust authorities. Where information networks have become distribution channels this has given rise to new challenges. As discussed above, this phenomenon became first evident in the operation of computerized reservation systems. Legislative actions by governments have sought to ensure fair competition among the computerized reservation systems and equal opportunity for the participants in the systems. It appears that the possibility for developing countries to access and use computerized reservation systems has increased as a result of the legislative actions taken for fair competition, as well as the development of major international data networks by the airline association for telecommunications. However, it would appear that analogous problems are beginning to appear in other sectors, such as computer services where access to the network can be included in the purchase of software.

46 Limited telecommunications capacity in developing countries is a major

difficulty in making effective use of information networks. The unreliability

of the quality of telecommunications lines as well as high tariffs in long-distance telecommunications are major obstacles in this respect. These impede developing country firms from making better use of the possibilities of remote data and software services, which would be provided by the use of information networks. At the same time, due to scarce resources, developing countries often face a difficult choice between updating their technological infrastructures to make better use of new trade opportunities made possible by information technology on the one hand, and extending basic telecommunications services to wider sections of the population, both of which are necessary if developing countries are to effectively benefit from the promises offered by the information superhighways described above. At the same time, further technological development is impeded by weakness in the financial sector. This is especially critical in the construction of the telecommunications infrastructure.

47 Regulations in telecommunications and information service sectors can give rise to problems such as discriminatory practices in access of foreign and local service providers to basic telecommunications infrastructure, subjecting foreign service providers to unfair restrictions on use of equipment, user cost for leased equipment, more stringent licensing requirements resulting in unfair standards, limitations on interconnection to domestic networks. Barriers to cross-border information flow, such as restrictions on ground of data protection, restrictions on trade in software, and requirements to meet over-elaborate protocols of access. These regulations have the legitimate objectives of protecting national security, and ensuring the quality of telecommunications and information services. However, these regulations also become constraints to providers and users of information networks.

48 Lack of adequate intellectual property right protection was cited as a constraint as information which flows in electronic networks often has a high commercial value. Lack of protection, in policy or practice, of intellectual property rights, present constraints to the use of information networks, and their extension internationally, including into developing countries. The existing copyright laws of many countries, both developed and developing are considered to provide inadequate protection in the light of new digital technology.

49 The security of information can be protected through technical coding methods (encryption), which can render the contents of transmissions and files sent or stored on the Information Highway inaccessible to anyone but their originators and designated audience. However, such security devices may have an impact on trade.

50 Financial considerations are another important factor in making effective use of information networks. The prices are usually high for small users. For example, small airlines and tour operators often face prohibitive booking fees. Major information networks in the financial sector require high participation fees. Also, developing country firms can be impeded in the provision of off-shore information services to financial service companies by high minimum net-worth requirements in the client's country. Most of the developing-country users being small, this type of financial constraint acts as an impediment to the effective participation of developing-country firms in information networks and hence in international markets.

51 Lack of skills and necessary equipment to make use of emerging open-to-public information networks and the information provided by them constitutes a further impediment for developing countries. For example, the possibilities offered by the development of the Internet can be effectively used only if there are adequate facilities for training in the area of information technology.

52 Lack of transparency, not necessarily in terms of regulatory framework, but in the availability of information pertaining to the distribution and information industries, and to access to these industries is a constraint. In practical terms, non-availability of information is often the first barrier the across-border service provider encounters. Developing countries face difficulties

with respect to having information on standards as well as on account of the differences in standards followed in different countries or regions. As noted above, this is particularly relevant to algorithms and encoding rules to be used for encrypting information.

53 Export controls exercised by foreign countries of computer equipment and software, including encryption technology that are deemed to have military or security implications, was cited as a serious constraint in obtaining information on standard. Lack of international cooperation in, and experience in regulation of, the development of IVAN (international value-added network).

54 Language barrier appears as a very practical limitation for many service providers. Lack of Chinese software, for example, has been cited as one of the reasons why some companies do not use electronic mail to connect with their branches in China.

55 As has been noted above, the supply of service through networks does not obviate the need for the movement of persons, particularly highly skilled experts. Restrictions on the temporary movement of persons for training, representatives in trade associations can
adversely affect developing country exporters of services.

V. DEVELOPING AN ACCESS STRATEGY

56 Unlike in the case of goods, where distribution is a matter of physical presence, for services distribution is about *use* of a distribution network, thus, access to information networks and distribution channels means not only overcoming barriers to entry, but also being able to make effective use of the system. This point is particularly relevant for developing countries as the barriers identified in the previous section include not only " to access" but also "to use" information networks and distribution channels.

57 The question of encouraging exports of services for developing countries through access to and use of information networks and distribution channels leads to the three aspects:

- *effective access* to distribution channels and information networks;
- seeking a *balance* between market forces and regulated development in the telecommunications, information and distribution industries;
- a "market" and "*business* opportunity" outlook, rather than a narrow sectoral perspective.

58 These aspects will be the basis of developing an access strategy to facilitate trade in services for developing countries. There are two dimensions to such a strategy, namely:

- solutions which can be implemented *autonomously* within the developing country in question, either by its government or its private sector, or through a partnership between the two;

- solutions through *negotiations* with other parties, including international and multilateral trade negotiations, and involving both the private and the public sectors.

59 Such a strategy will, accordingly, address the following major areas:

(i) Development of the telecommunications infrastructure,

(ii) Strengthening of national capacities;

(iii) Achieving greater effective access to distribution channels and information networks through multilateral negotiations in GATS or in the context of regional agreements;

(iv) Seeking International Cooperation to overcome specific problems.

Box 5
Network Facilitating Services (NFS)

With the increased use of information networks for trade in services, a new range of services have emerged to assist end users in accessing these networks effectively. The development of such network-facilitating services (NFS) is crucial for improving the networking capacity of developing countries and in enabling them to take fuller advantage of the new marketing opportunities made possible by the use of information networks as a mode of delivery of services.

Local telecommunication networks and telephone networks in most countries also function as facilitators in providing access to networks. France Telecom developed an advanced public telecommunications network to facilitate networking by private enterprises who could "piggyback" on publicly provided networks. In Costa Rica the public company of telecommunications created a subsidiary, Radiografica Costarricense S.A. (RACSA), to develop a market and to commercialize value added services including network services.* RACSA provides preferential rates for access to the Internet for the academic and business community as well as for the government, and facilitates access to Internet by means of a software that simplifies access and navigation. URUNET, a firm in Uruguay has developed on line trade information services between Uruguay and Chile, using the public network infrastructure. Exporters and producers from different sectors access on-line services from Urunet to support their marketing decisions. Urunet has a "two-way agreement" with Uruguayan government, by which public information on regulations affecting trade as well as statistics on foreign trade are delivered to Urunet by the government, and the information is processed and made available on the computer within a short period of time. Urunet also operate as an intermediary for processing and updating information from different public databases and trade-news services.

The travel and tourism sector shows several examples of network facilitating services. While computerized reservation systems such as Sabre, Galileo, Appolo and Abacus provide facilities for the sale of travel and tourism products through the transmission of electronic information, a number of intermediate service providers such as Estrel in France and Sapia in Spain provide multiple function terminal which enable the user to access several networks through the same terminal. There are firms that supply network services to the global distribution systems. SITA, for example, operates one of world's largest international data networks, providing an extensive range of telecommunications and information services to a broad customer base that includes international airlines, major reservation systems, large hotel chains, tour operators, airports, transport companies, multinational organizations, and car rental firms. For developing countries, the development of network-facilitating services may be a crucial instrument of policy with respect to facilitating access to and use of information networks and distribution channels by service suppliers. This may take two forms:

networking services provided by the Government or by trade associations, which individual firms may make use of for accessing trade-related information, such as databases that provide on-line information on trade-related issues as well as on potential markets and customers; and

- services by intermediate firms that provide commercial access to information networks and distribution channels for other firms to enable them to communicate with or deliver their services to clients. For example, in the case of computerized reservation systems where booking fees are high for service suppliers, intermediate firms or trade associations may perform the role of facilitators, enabling small firms to benefit from the larger volumes of booking resulting from this.

* Alvarado Hugo, "El Fenómeno Internet en Costa Rica, Antecedentes y Situación Actual". RACSA has signed cooperation agreement with all the Central American countries and Panama, which allows the use of the networking capacity of RACSA infrastructures to develop value-added services, as well as the provision of specialized on-line data packages such as MAYAPAQ with GUATEL in Guatemala and NICAPAC in Nicaragua.

A. The telecommunications infrastructure

60 The dual character of telecommunications as a service in itself and as an infrastructure for the provision of other services, including value-added

telecommunications services makes it difficult, therefore, to divorce the question of improving access to distribution channels and information networks from the issue of developing telecommunications infrastructure. For many developing countries, the question of the extent to which foreign capital should be allowed in telecommunications development is a difficult policy consideration. The main policy consideration for developing countries in respect of telecommunications would seem seeking that of a balance between the following:

- attracting foreign capital into the domestic telecommunications industry, through offering some advantages to foreign capital, e.g. equity participation;
- maintaining control over domestic telecommunications industry;
- encouraging technology transfer;
- ensuring that the resulting telecommunications infrastructure will not be discriminatory to users, and will offer equality of opportunity for access and use by both foreign and local users.

61 The Annex on Telecommunications in the GATS has an important implications to the development of telecommunications in developing countries. It recognizes the dual role of this sector . It relates to telecommunications as a mode of supply and applies to all measures of a member that affect access to and use of public telecommunications transport networks and services. The purpose of this Annex is to ensure that any service supplier is accorded access to and use of public telecommunications transport networks and services on reasonable and non-discriminatory terms and conditions for the supply of a service included in its schedule. The Annex strikes a balance between the needs of the users for fair terms of access and the needs of the regulators and public telecommunications operators to maintain a system that functions and fulfills public policy objectives. It also provides that a developing country member may, consistent with its level of development, place reasonable conditions on access to and use of public telecommunications transport networks and services necessary to strengthen its domestic telecommunications infrastructure and service capacity and to increase its participation in international trade in telecommunications services". Such conditions could also include those necessary to strengthen the domestic telecommunications infrastructure and service capacity of the developing country concerned and to increase its international trade on telecommunications services. Such conditions should be specified in the member's Schedule.

62 The aspect of universal service in telecommunications is a high priority for most of developing countries. In this regard, the issue of product and equipment standards poses an important aspect. Internationally agreed standards are preferable to national and subnational standards as the latter greatly complicate the achievement of effective access.

63 Policy-makers should be prepared for a host of legal and regulatory issues that may arise at national, regional and international levels, which will influence the way the telecommunications sector is restructured, as well as other related developments such as of software copyright, data protection, computer crime, electronic funds transfer and value-added services.

64 International cooperation should be enhanced for technology transfer and exchange of mutual experience. There should be more use of regional and multilateral forums to encourage the sharing of experience in planning, construction, and operation of telecommunications infrastructure and human resources development.

B. Developing National Capacities

65 There are two major considerations in developing capacity for using information networks and distribution channels for developing countries:

(1) Technology being ultimately subordinate to market needs, the market will dictate what facilities should be developed to enable international electronic networking. The question is whether this process should, and how far it can be, speeded up through government involvement and

regulation. Although there will be much merit in having the private sector develop and run information networks, the latter being a service industry itself, the "infrastructural" character of such networks suggests that there may also be some ground for active public sector involvement in establishing and running such information systems.

(2) In the context of trade in services, it is important to harness appropriate foreign capital investment and technology in establishing information networks and distribution channels, this involves strengthening the negotiating position of domestic firms in dealing with foreign suppliers.

66 The solution to the problem of effective access is implied in the concept of effective access itself, i.e. that is in facilitating access, rather than creating new access channels. To give some examples, in the travel/tourism sector, small firms often find it expensive to "buy in" global computer reservation networks, and once on, difficult to use. One solution to this is to have some agency act as a representative to negotiate on behalf of small firms collectively in bargaining for better terms of access, and for a training service to be created to help users enter into and use the network.

67 Developing country governments and service producers should emphasize development of multiple distribution networks which will protect the advantage of local knowledge and service expectations and will integrate local products in international networks.

68 In particular, developing country governments and producers in audiovisual services need to be concerned with developing the commercial production capacity to match rapidly expanding global distribution networks of cables and satellite transmission, and to ensure that such distribution networks are used to distribute their own media products.

69 Strengthened trade associations could deal with some financial difficulties which developing countries face through negotiating pay-as-use agreements with the providers of value-added information networks and arranging alternative financial mechanism, e.g. creation of some type of insurance mechanism instead of a minimum networth requirement in the client's country. Another possible option for developing country firms facing difficulty in accessing and using networks would be to foster intermediate service companies to facilitate their access to global information networks and distribution channels. This may take forms of networking services provided by the government or by trade associations; or intermediate firms that provide commercial access to information networks and distribution channels to other firms. These network facilitating service firms are proliferating in developed countries and emerging in developing countries where government support is often required.

70 The enhancement of human capital through improved educational and training facilities, as well as through transfer of technology, is thus of major importance. National governments need continue their effort to focus higher education and to enhance computer-related infrastructures in universities. Governments and the private sector firms are called for to take advantage of opportunities provided in acquiring skills and technology through associating with advanced foreign service firms. At the private sector level, trade associations could explore ways to enhance their training function for small business firms to make their access to and use of information networks easier. The emergence of "facilitator firms" mentioned above either private or public could be stimulated as a key "producer service" in assisting enterprises to make effective use of information networks not only to obtain information but as a mode for exporting services.

C. Access through negotiations

71 The GATS negotiations are the appropriate forum for pursuing effective access, where such access is impeded by government regulations. For example, difficulties for developing country personnel to enter for the purpose of

providing support services to software exporting could be addressed in the negotiations on movement of natural persons. There should also be room for improvement in immigration and visa restrictions on temporary entry of personnel for the purpose of obtaining training in relation to information networks and distribution channel. The formulation of such requests may require further efforts to identify the measures concerned. The UNCTAD MAST data base could assist in this respect.

72 In considering effective use of Article IV, Article XIX and the Annex on Telecommunications of the GATS, for improving developing countries' access to and use of information networks and distribution channels, the underlying concept is that negotiations on specific commitments should enable the development of developing countries' own domestic capacity in the telecommunications, information and distribution industries, and facilitate their access to networks and distribution systems as a condition for access to their markets. A variety of such conditions could be applied, particularly with respect to the sectors examined above. For example, foreign software and audiovisual service suppliers could be obliged to distribute national products in their world wide networks, hotel chains could be required to provide reservation services for domestic hotels etc. The problem is not in devising the conditions, but to put them into effect given the weak negotiating position of most developing countries in dealing with foreign investors, particularly when such conditions may be resisted by the home countries in the GATS context.

73 One of the failings of GATS Article IV:1(b) is that there is no obligation on developed countries to provide such access but only to negotiate specific commitments. While developed country governments can argue that they cannot oblige private firms to provide access to their proprietary networks, they could agree to recognize the right of any developing countries to request such access as a condition of market access, regardless of what might be written in the Schedules of Commitments, and encourage "their" firms to cooperate. Another approach is for developing countries to specify in their schedules that access be linked to joint ventures which would give the domestic participant access to its foreign partners network.

74 More often, barriers take the form of business practices of developed country firms. In some cases, such practices may be contrary to competition or anti-trust laws and there is a need to "preempt" a "new generation" of network related anti-competitive practices. However, others might not fall into this category and would have to be dealt with through measures to strengthen the position of domestic service exporters. An example is that of computerized reservation systems, where developing country practitioners could negotiate through intermediate bodies such as trade associations to represent collective interests of small and medium enterprises. Developed country governments can be requested to ensure " good and fair practice", where the private sector could respond by developing self-regulatory codes of practice governing buying-in arrangement for CRS.

VI. CONCLUSIONS AND OBSERVATIONS

75 The increased tradability of services through information networks provides developing countries with a major opportunity to supply services through the cross-border mode. Developing countries can exploit their comparative advantage in labour intensive services while avoiding the difficulties faced in the movement of natural persons. It also provides them with the potential of using the access they provide to foreign suppliers by making use of the foreign supplier's own network as a means of exporting services. However, the problems which developing countries face in improving their access to information networks and distribution channels are complex as they involve the issues of domestic and foreign regulations, proprietary ownership, and technical and financial aspects.

76 The development of telecommunications and computer-related infrastructures remain a priority. National governments need to pursue continuously the notion

of "adequate infrastructure", which encompasses the issues of attracting foreign capital, maintaining adequate control over domestic telecommunications and encouraging technology transfer. The notion of "adequate regulatory environment" needs to be studied as well. Policy-makers should be prepared for a host of legal and regulatory issues that may arise at national, regional and international levels, which will influence the way the telecommunications sector is restructured, as well as other related developments such as software copyright, data protection, computer crime and electronic funds transfer.

77 It would seem that there might not be too much scope for enhancing access to networks and distribution channels through intergovernmental negotiations. The main application of GATS is to ensure that the qualifying conditions are such as to permit the effective implementation of Articles IV, XIX and the Annex on Telecommunications and to strengthen the position of governments and national firms in negotiations with foreign firms. The main role of developing country governments could be to take measures designed to strengthen the negotiating position of their firms, including by setting up national or sub-regional networks of service suppliers which could negotiate as a group with the foreign firms. In any case, effective use of "Information highways" to supply services could be a means of bypassing proprietary networks.

78 On the other hand, certain problems could be dealt with through the faithful implementation of GATS, particularly in the context of Articles VI (Domestic Regulation), and IV:2 (Establishment of Contact Points). There is a possibility that a whole new generation of anti-competitive practices and RBPs is emerging in the distribution of computer services through information networks. It is difficult to see how such problems can be effectively overcome without more structured international cooperation, perhaps in the framework of Article IX.

79 In negotiating commitments in the various service sectors in GATS, the following objectives could be kept in view: (i) the need of developing countries to develop "facilitator" institutions; (ii) priority in development of education and training in telecommunications and computer technologies; (iii) the possibility of reciprocal arrangements in the form of education and technology transfer; (iv) the utility of leasing and BOT (build-operate-transfer) arrangements; (v) qualification of commitments on national treatment in favour of domestic small-medium enterprises; (vi) providing contact points which should include information on access to distribution channels and information networks.

80 In order to improve developing countries' access of and use of information networks and distribution channels, the support of the international community is necessary in the following aspects:

(1) formulating strategies to develop national capacity to participate effectively in information networks, including through training programmes;

(2) exploring strategies for fostering intermediate service companies to facilitate developing country firms' access to global information networks and distribution channels;

(3) studying further financial difficulties which developing countries face in accessing to and using information networks and distribution channels, and exploring the possibility of reducing the financial burden;

(4) assisting developing countries in participating in setting up of global standards in connection with advanced information networks and electronic data interchange, and conforming to such standards;

(5) studying the implications of increasing commercial applications to the use of advanced information networks such as Internet for developing countries;

(6) adopting a set of principles which would facilitate the attainment of the

development objectives of GATS Articles IV, XIX and the Annex on Telecommunications, in recognition of the weaker negotiating position of developing countries.

81 The international community should provide opportunities for developing countries to exchange information and experience in developing "adequate" telecommunications and computer-related infrastructures, including their regulatory environment.

82 The future work of the Standing Committee for improving developing countries' access to and use of information networks and distribution channels needs to focus on the aspects noted above. Given the complexity of the issue, the Standing Committee may consider providing direction as to the specific aspects of this issue upon which further analysis might be made.

1. UNCTAD, *Trade and Development Report 1988*, Part II: Services in the World Economy, UNCTAD/TDR 88/Offprint, p. 175. UNCTAD's *Trade and Development Report 1988* noted: "Information technology has had a varying impact on barriers to market entry. Entry barriers can be lowered where the infrastructure is used to market or distribute services, especially where access to, and the cost of, the network is shared by all users. Access to such a network can be a determinant factor not only in trade in services but also for providing services essential to trade in goods."

1. TD/364/Rev.1 p.29

1. FUINCA is a Spanish non-governmental organization whose objective is to carry out activities to promote the supply of electronic information services in Spain, bearing in mind both the opportunities offered by the European Single Market of 1992 and cooperation with Latin American countries. It signed a cooperation agreement with UNCTAD on 19 July 1994.

1. UNCTAD/TDR, op.cit..

1. "Progress Report by the secretariat on the Implementation of the Work Programme of the Standing Committee", TD/B/CN.4/25, 1 September 1993.

1. Albert Bressand, "Access to Networks", in UNCTAD, *Trade in Services: Sectoral Issues*, United Nations Publication, UNCTAD/ITP/26.

1. See UNCTAD Multimodal Transport Newsletter, No. 7, May 1995, pp. 5-7.

1. "Professional and Business Services", Paul Luyten, paper presented at the Meeting of the Group of Experts on Access to Information Networks and Distribution Channels, UNCTAD/FUINCA, Madrid, 1-3 February 1995.

1. Ibid.

1. Prakash Hebalkar, "Access to and Use of Information Networks and Distribution Channels: Current Experiences, Future Concerns", paper presented at the meeting of the Group of Experts on Access to Information Networks and Distribution Channels, UNCTAD/FUINCA, Madrid, 1-3 February 1995.

1. World Investment Report 1993, p. 122, UNCTAD, ST/CTC/156.

1. Ibid.

1. See note prepared for agenda item 4, TD/B/CN.4/43.

1. S K "Juggy" Pandit, "Wired to the Rest of the World", *Financial Times*, February 1995.

1. Characteristics of such regulations were discussed in Executive Summary of International Chamber of Commerce (ICC) Position Paper, Doc. No. 373 - 30/450 .

1. See American Scientific Magazine, February-March 1995.

1. See World Investment Report 1994, UNCTAD/DTC/10.

1. Paul Luyten, *op.cit.*.

1. Ibid.

1. Malati Tambay Vaidya, "Trade in Media Services: Asia and The Pacific Region", in *Services in Asia and The Pacific, Selected Papers, Volume One,* United Nations, New York, 1990.

1. "Media Services: Considerations Relevant to Multilateral Trade Negotiations", Susan Christopherson and Stephen Bell, in Trade in Services: Sectoral Issues, UNCTAD/ITP/26, January 1990, also TD/14/Supplement.

1. This is one of the factors that led to the last minute crisis in the Uruguay Round negotiations on audio-visual services, see TDR/14/Supplement.

1. Susan Christopherson, "Current Developments and Trade Issues in Audiovisual Services", paper presented at the meeting of the Group of Experts on Access to Information Networks and Distribution Channels, UNCTAD/FUINCA, Madrid, 1-3 February 1995.

1. Les GDS dans l'industrie touristique", etude realisee pour OMT par Olivier Vialle, 1994.

1. See Frank Go, "The Role of Computerized Reservation Systems in the Hospitality Industry", in *Tourism Management*, March 1992, and Patricia Lindsay, "New Hospitality and Tourism Products: CRS supply and Demand", *Tourism Management*, March, 1992.

1. ICAO, Code of Conduct for Regulation and Operation of Computer Reservation Systems, Council of ICAO, 17/12/91, cited in Francois Vellas, "Les systems d'informations et de distribution informatises dans le secteur du tourisme et du transport aerien et les pays en developpement", paper presented at the meeting of the Group of Experts on Access to Information Networks and Distribution Channels, UNCTAD/FUINCA, Madrid, 1-3 February 1995.

1. United States Department of Transport, cited in "Les GFDS dans l'industrie touristique", op. cit.

1. Ibid.

1. Notably TDR/8.

1. Ibid.

1. See B. Gallagher, "The Information Highway: Racetrack or Ring Road?" ,APT Journal, Vol.7 No.1 , Bangkok, January 1995.

1. See document TD/B/CN.4/24.

1. See Business Week, 26 June 1995, pp. 46-49, also Box 2 above.

1. See P. Brusick, M. Gibbs, M. Mashayekhi, "..Anticompetitive Practices in the Services Sector" in Uruguay Round : Further Papers on Selected Issues UNCTAD/ITP/42 Geneva 1990.

1. U.S. Department of Transportation Rule under 14 CFR Part 255, September 1992; Commission Regulation (EC) No. 3089/93, 29 October 1993, No. 3652/93, 22 December 1993; Code of Conduct for regulation and operation of computer reservation systems (CRS), Council of ICAO, 17 December 1991.

1. See "Oh Microsoft, poor Microsoft" Business Week 26 June 1995. Also "Court Revives Microsoft Antitrust Settlement," the Wall Street Journal Europe, 19 June 1995.

1. See "Background on Canadian Information Highway Policy", News Release, Government of Canada, 16 March 1994.

1. Ibid. "Clipper" is a technical standard employing a secret algorithm on a silicon chip built right into network data and voice terminal equipment. For example, it is felt that generalized use of the "Clipper" standard, may provide an unfair advantage for United States software and equipment producers.

1. From the finding of an unpublished survey "How small and medium enterprises use telecommunications equipment in Hong Kong" conducted by the Telecommunications Research Project, Centre of Asian Studies, Hong Kong University, 1994.

1. Recent international experience and sector studies suggest that new service suppliers are unlikely to obtain reasonable interconnection terms from the incumbent operator without regulatory aid. The APT Yearbook 1995, "Privatization and Deregulation", p. 116.

1. Such as that being developed by APEC through the "Human Resources Development" subgroup under the APEC Telecommunications Working Group.

1. ICC Position Paper, op.cit.

1. See Business Week, 26 June 1995.

1. See Box 6.

1. See TD/B/CN.4/24, op.cit.

1. Given that for the first time, on a multilateral instrument, the GATS recognizes the right of host countries to take up their interests of "their" enterprises (i.e. which they own or control) established in a foreign country, in a multilateral dispute settlement mechanism, there would seem to be a possibility for such home countries for the appropriate behaviours of such enterprises.