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## Impact of Telecommunications Development on Trade-supporting Services

### 1. Introduction

Services are beginning to play a key role in both developed and developing market economies. They generate over half of GDP in all the industrialised countries and they constitute the most powerful sector in most of the developing countries. They have become a driving force of international trade. Fast growth rates of both employment and production in the service sector and the impact of technological advance on the growth rate of that sector make us look in a different way at its contribution to international economic development.

Services owe their present economic position in a large measure to such new branches as business information and trade facilitation. However, the greatest contribution to the development of that sector is attributed to the tremendous progress in the field of telecommunications. Many, so far unknown possibilities for using telecommunications in the particular economies and in the international market have appeared in the last decade. Of the numerous changes that have been recorded, the following are particularly noteworthy:

- rapid development of the INTERNET,
- convergence of different modes of data transmission (telephony, radio, interactive multimedia, broadcasting) which by replacing the analogue systems with digital systems offers unlimited possibilities of exchanging information of different types (data, voice, image) with the use of the existing infrastructure and equipment,
- reduction in cellular telephony costs thanks to the operation of global non-geostationary satellite systems (LEOS) (UNCTAD. Telecommunication ... , 1997).

The technological revolution of the 1980s gave rise to structural changes in the telecommunications industry in many countries. Because of the constant huge investment needs necessary for a proper functioning of that industry as well as their significance for economic activity and much importance for political and military life, telecommunications were a natural state monopoly. Few industrialised countries managed to privatise these firms. Consumers' needs for cheaper services and of better quality as well as more adjusted to their specific needs grew step in step with growth of technological possibilities and increases in the range of the services available.

In order to satisfy the growing demand, the particular countries aim their economic policy at privatising the state-owned telecommunications giants and putting into life legal regulations allowing other economic units to conduct activities in this area.

### ^ Impact of telecommunications on other trade-supporting branches

Telecommunications are one of six service branches that can be considered to be trade-supporting. World trade in both goods and services is more and more dependent on international information flows. Thus, without telecommunications it would be impossible to start the process of trade globalisation. There is a certain kind of hierarchy among these sectors, which brings forth the superior role of telecommunications. It can be described as a simple 1-2-3 model in which one main element (telecommunications) makes an infrastructural base for the other two trade efficiency sectors. They are business information, which could not exist or be transmitted without an appropriate telecommunications infrastructure and trade facilitation which very often uses information technology. The possibilities and functions of services at this level in the model are used during the production of the remaining three branches, namely customs, transport and banking and insurance (cf. Figure 1).

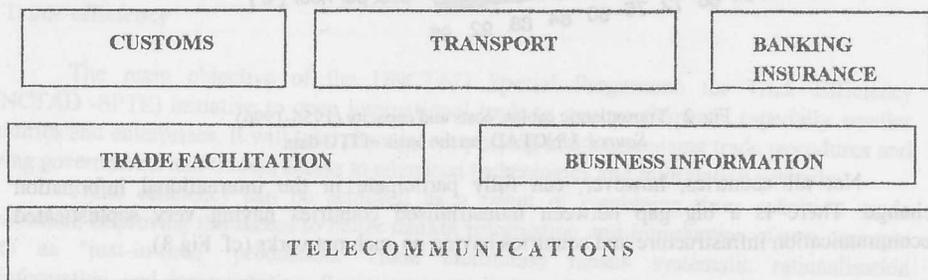


Fig. 1 Model of services of the 1-2-3 type

Source: : UNCTAD. Telecommunication, business facilitation and Trade efficiency, Geneva, 8 September 1997

### 3. GII and "telecommunications revolution"

The abbreviation GII (Global Information Infrastructure) appeared for the first time in 1994 at the Buenos Aires World Telecommunications Development Conference. Coined on the basis of NII (National Information Infrastructure), it has never been accurately defined. Generally, it is understood as a world-wide infrastructure composed of a mix of high-speed computers and telecommunications equipment allowing fast transmission of information. Some of the participants in the conference describe it as a global system for data transmission, others say that it is a "global commons" which would underpin universal telephony services world-wide. Most of them, however, agree that in the future the GII will have three main characteristics:

- it will be digital - allowing faultless transmission of all messages - voice, data, images,
- in terms of capacity - it will largely overcome the obstacle of scarcity, and will allow its expansion,
- it will offer broad possibilities for tailoring its services to the specific needs of individual users.

Apart from the growing access to information networks and growing possibilities of transmission, the speed of transmission, or efficiency of a network is becoming more and more essential today. The rapid decrease in transmission costs in the early 1970s is of importance, too. The technology advances allowed a twenty-fold cut in prices between 1956 and 1996 and a six-fold increase in efficiency of the main information highways (cf. Fig. 2).

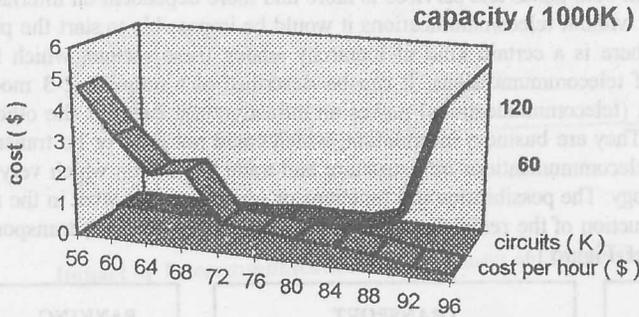


Fig. 2 Transatlantic cables: costs and capacity (1956-1996)  
 Source: UNCTAD, on the basis of ITU data

Not all countries, however, can fully participate in the international information exchange. There is a big gap between industrialised countries having very sophisticated telecommunication infrastructure and countries having no such networks (cf. Fig 3).

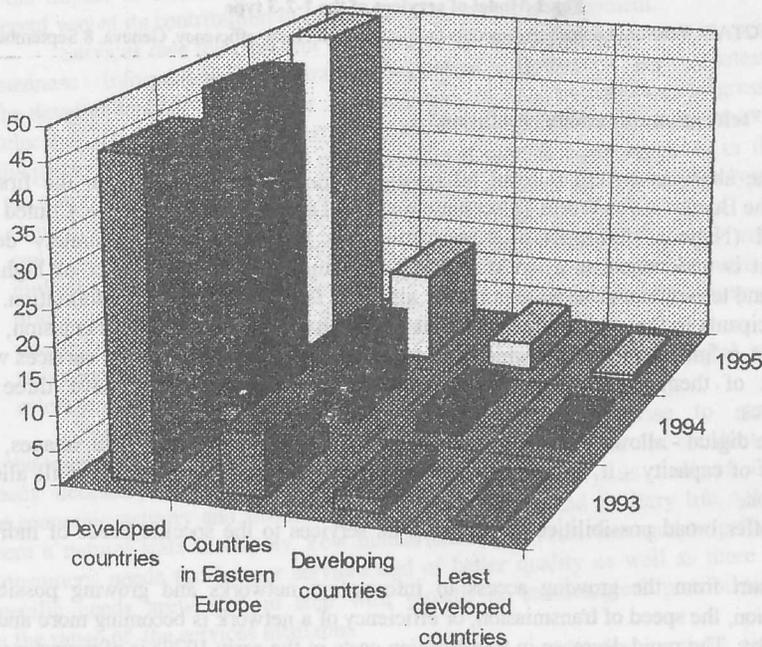


Figure 3: Telephones per 1000 inhabitants  
 Source: UNCTAD, on the basis of ITU data

For example, the number of telephone sets in Tokyo exceeds the number of telephones in Africa. This gap can be filled by a steady simplification of computer operation and by widespread computer operation training. Computers and their accessories are becoming cheaper and cheaper, but for the time being only big industrial and trade organisations are taking advantage of telecommunications on a large scale. Thanks to their size, international presence, variety and extent of their markets, these organisations can put all telecommunications innovations into effect. Small and medium-size enterprises as well as developing countries and LDC's in particular will not be in a position to benefit from these new opportunities unless they can mobilise the necessary financial resources for development of their own telecommunications systems and joining the GIL.

#### 4. Trade efficiency

The main objective of the UNCTAD Special Programme for Trade Efficiency (UNCTAD -SPTE) initiative to open international trade to new participants, especially smaller countries and enterprises. It will take place by simplifying and harmonising trade procedures and giving governments and traders access to advanced technologies and information networks.

Trade efficiency can be achieved as a result of combining three activities: trade facilitation, improving the access to better market information and introduction of new concepts such as "just-in-time" production. Trade facilitation means systematic rationalisation of information and documentation flows, trade procedures including all activities connected with data collecting, presenting and processing required for the movement of goods and related payments. The main objectives of the facilitation are:

- to ease the information flow,
- to eliminate errors,
- to relate procedures more fully to current requirements,
- to limit information requirements to essential data,
- to minimise the delays caused by the unavoidable official controls (UNCTAD.

Recommendations ..., 1994).

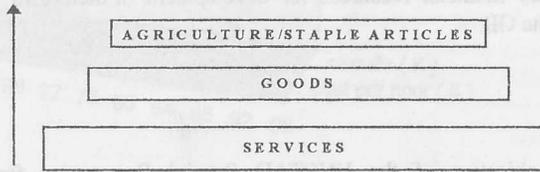
Priority setting is not enough to carry out ambitious and expensive plans for modernisation and expansion of the telecommunications infrastructure. It has been calculated that in order to bring the average level of telephony in Africa to that of Southern Europe, some USD 50 billion will be required. Neither local economic units nor international organisations have such considerable sums at their disposal. Private investors seem to be indispensable. Countries that cannot afford such investment projects should identify local users and persuade them that fast access to information can bring real economic benefits.

Taking into account the present economic structures in most of the industrialised countries, the search for these users should focus mainly on export-oriented enterprises. Thus, in implementing new technologies, one of the incentives should be the competitive edge of these enterprises in international markets.

#### 5. New dynamics of international trade

Owing to the development of the service sector in the world, much more time is devoted to analysis of trade in telecommunications services especially in developing countries in which most of the high tech is still inaccessible and a considerable proportion

of the equipment is still being imported. Surprisingly, however, the role of telecommunications in trade is overlooked. Thanks to telecommunications and the development of information networks, the dynamics of international trade have been modified considerably. The traditional approach to "economic development" in accordance with which each state develops its structure of production starting from agriculture and extraction of natural resources to industry and completes it with services does not apply to trade. Services have become an indispensable element of contemporary international trade.



**Fig. 4.1. The old „production” model**

*Source: as in Figure 1*

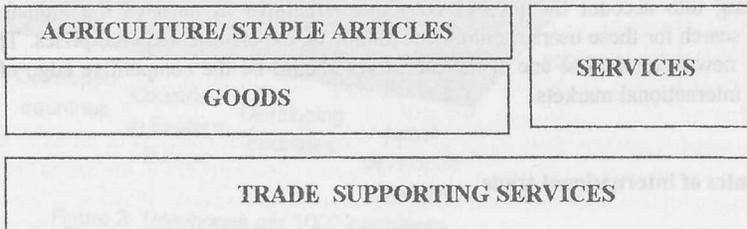
Thus, the old model of production (Figure 4.1) should be replaced with a new model of trade (Figure 4.2).



**Fig. 4.2 New model of trade**

*Source: as in Figure 1*

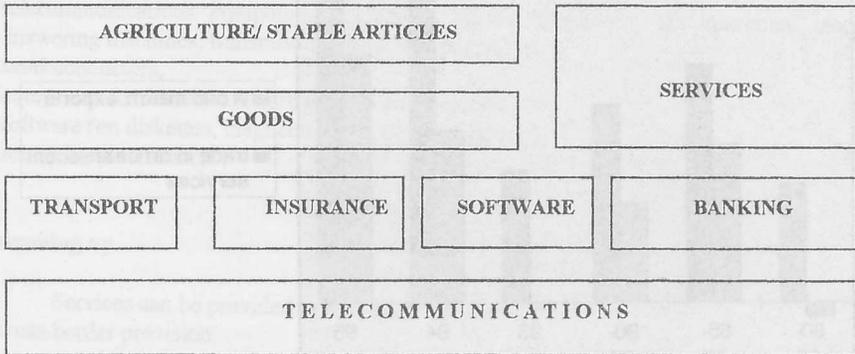
However, the service sector includes such services that support trade in both goods and services. Consequently, another modification is necessary. It is shown in Fig. 4.3.



**Fig. 4.3 Modified model of services**

*Source: as in Figure 1*

In turn, services supporting trade can be divided into two groups. The first group covers sectoral services, or transport, banking and insurance as well as software necessary to collect and transmit trade information. The second group includes infrastructural services. Telecommunications are at the forefront of that group (see Figure no. 4.4)



**Fig. 4.4 Model of services supporting trade**

*Source:* as in Figure 1

As it can be seen, telecommunications are the foundation for services supporting trade. These services, in turn, make trade in goods and services possible. This model is of enormous importance for international trade relations. Firstly, it accentuates the weight of the concept of trade efficiency, which is defined as a strategy of operation aimed at harmonious co-operation between services supporting trade. Efficiency of trade is to be the main element of each trade policy oriented at maximisation of competitiveness of domestic products in international markets. On the other hands, countries that are ready to participate in global trade thanks to technologies at their disposal attribute priority status to trade in telecommunications services as well as to trade in such goods and services that permit producing these services.

## 6. ITA

Because of a very fast increase in the turnover in telecommunications equipment (cf. Fig. 5) and in order to carry out their intentions concerning the facilitation of the process of entering and effecting the above transitions, on 26 March 1997 forty representatives of governments decided to put into life the Ministerial Declaration of the World Trade Organisation concerned with Trade in Information Technology (ITA). It reduces customs on computer and telecommunications products starting from 1 July 1997 and provides for their lifting by the year 2000. These reductions apply to all WTO members.

Rennet Rigger, Director General of WTO treats the ITA as a great success of the international trade system. In his opinion, this agreement covering about USD 600 billion of world trade implies lower prices for consumers and fewer barriers to the spread of high tech, which is so important for development of all WTO members (World ..., 1997).

According to him, together with the agreement reached a month earlier concerning trade in telecommunications services (Telecom Agreement) this declaration constitutes a trampoline for economic growth and development in the 21st century. The WTO agreements on trade in these two sectors are the blood for the world economy (World ..., 1997).

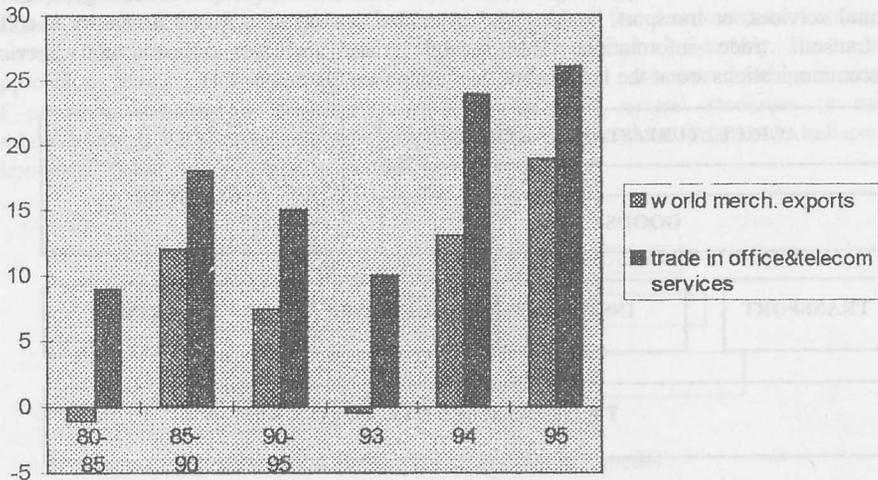


Fig. 5 World exports of goods and trade in office and telecommunications equipment (annual percentage change)

Source: World Trade Organization. Focus Newsletter No. 17, March 1997

The ITA and the Telecom Agreement cover international transactions exceeding US\$ 1 trillion, which is equivalent to world trade in agricultural produce (USD 444 billion), cars (US\$ 456 billion) and textiles (USD 153 billion).

The parties to the agreement included - as of March 1997 - 40 countries, including 29 members of the negotiations conducted in Singapore (Australia, Canada, 15 members of the European Union, Hong Kong, Iceland, Indonesia, Japan, South Korea, Liechtenstein, Norway, Taipei, Singapore, Switzerland, Turkey and the USA) and 11 other countries, which joined later (Costa Rica, the Czech Republic, Estonia, Israel, India, Macao, Malaysia, New Zealand, Romania, Slovakia, Thailand). These 29 countries account for about 83% of world trade in telecommunications products. The timetable of reductions in customs tariffs was agreed via consensus. The consent for Poland and Panama was delayed because it was impossible to conclude the negotiations with the trading partners. The ITA provides for a gradual elimination of tariffs thanks to four equal reductions, each of 25%:

reduction no. 1	1st July 1997
reduction no. 2	1st January 1998
reduction no. 3	1st January 1999
total elimination of customs	1st January 2000

Source: World Trade Organization. Focus Newsletter No. 17, March 1997

There are six major categories of products which were covered by the concluded agreements, namely:

- 1) computers (including computer systems, laptops and components such as keyboards, printers, monitors, scanners, disk drives and others),
- 2) telecommunications equipment (telephones, video telephones, fax machines, modems, answering machines, transmission machines, pagers, etc.),
- 3) semi-conductors,
- 4) equipment for the manufacture of semi-conductors,
- 5) software (on diskettes, magnetic tapes, CD-ROMs, etc.),
- 6) scientific instruments.

## 7. Summing up

Services can be provided in four different ways:

- cross-border provision,
- commercial presence,
- movement of customers abroad,
- movement of staff to the importing country.

Several years ago, commercial presence or transfer of persons was necessary. At present thanks to the development of international transmitting networks which as Nicolas Negroponete says allow trade in "bytes" rather than in "atoms", more and more services can be provided in the first of the enumerated ways. Consequently, certain institutions and economic units should be keen on establishing as soon as possible multi-sided co-operation that will allow services provided by export to be freely exchanged all over the world. This will be possible once electronic trade is spread and liberalised. It becomes a link between the signed agreements and future actions. The value of electronic trade has been growing steadily in the recent years. In the last 12 months this value rose the fastest in the United States and significantly affected transactions in such sectors as banking, cars, tourism and advertising. It is likely that this trend will occur in other countries belonging to the OECD, especially in those where the INTERNET is in common use. The use of electronics in trade transactions makes it necessary to solve problems related to payments, intellectual property (copyright) and privacy.

Generally speaking, there are still no instruments, safeguards and guarantees relating electronic trade in the international market. When they are created, those countries that have realised the importance of these matters will occupy the privileged position.

The latest advances in telecommunications have greatly contributed to a change in the structure of world business and international trade transactions. They have also had an influence on the creation of the bases for contemporary trade policy and international negotiations concerning trade.

Today telecommunications are an important factor permitting access to widening markets especially at the international level; those that have no access to good networks and services will be gradually eliminated from international markets. Telecommunications are a link without which it would be impossible to provide commercial services treated more and more often as commonplace, normal; those who do not know how to use them will soon become lose their competitiveness.

Thanks to telecommunications it becomes possible to increase the market extent - both in the national and international sense. Combined with a better functioning transport and financial systems, telecommunications do not merely increase efficiency of trade.

They become indispensable in the process of providing the market with a minimum of commercial services that are in demand in the market. Fax machines, cellular phones and pagers are used daily by thousands of people involved in international trade who thanks to them are in contact with their firms and customers no matter where they are.

***Thus telecommunications systems used properly should lead to a better organisation of the markets participating in international trade.***

In turn, the spread of electronic communications (known as electronic data interchange) increases trade efficiency by reducing delays, eliminating sources of error and increasing the data processing possibilities at every moment of information creation. ***Proper use of telecommunications networks should be helpful for reducing costs of trade transactions.***

### References

- UNCTAD; Telecommunication, business facilitation and trade efficiency; Geneva, 8 September 1997  
 UNCTAD; Recommendations and Guidelines for Trade Efficiency; NY and Geneva 1994  
 World Trade Organization; Focus Newsletter No. 17, March 1997