

**Zeitschrift:** Technische Mitteilungen / Schweizerische Post-, Telefon- und Telegrafienbetriebe = Bulletin technique / Entreprise des postes, téléphones et télégraphes suisses = Bollettino tecnico / Azienda delle poste, dei telefoni e dei telegrafi svizzeri

**Herausgeber:** Schweizerische Post-, Telefon- und Telegrafienbetriebe

**Band:** 72 (1994)

**Heft:** 8

**Artikel:** The globalization of telecommunications and some elements of a european doctrine

**Autor:** Bajenescu, Titu I.

**DOI:** <https://doi.org/10.5169/seals-874727>

### **Nutzungsbedingungen**

Die ETH-Bibliothek ist die Anbieterin der digitalisierten Zeitschriften auf E-Periodica. Sie besitzt keine Urheberrechte an den Zeitschriften und ist nicht verantwortlich für deren Inhalte. Die Rechte liegen in der Regel bei den Herausgebern beziehungsweise den externen Rechteinhabern. Das Veröffentlichen von Bildern in Print- und Online-Publikationen sowie auf Social Media-Kanälen oder Webseiten ist nur mit vorheriger Genehmigung der Rechteinhaber erlaubt. [Mehr erfahren](#)

### **Conditions d'utilisation**

L'ETH Library est le fournisseur des revues numérisées. Elle ne détient aucun droit d'auteur sur les revues et n'est pas responsable de leur contenu. En règle générale, les droits sont détenus par les éditeurs ou les détenteurs de droits externes. La reproduction d'images dans des publications imprimées ou en ligne ainsi que sur des canaux de médias sociaux ou des sites web n'est autorisée qu'avec l'accord préalable des détenteurs des droits. [En savoir plus](#)

### **Terms of use**

The ETH Library is the provider of the digitised journals. It does not own any copyrights to the journals and is not responsible for their content. The rights usually lie with the publishers or the external rights holders. Publishing images in print and online publications, as well as on social media channels or websites, is only permitted with the prior consent of the rights holders. [Find out more](#)

**Download PDF:** 08.01.2026

**ETH-Bibliothek Zürich, E-Periodica, <https://www.e-periodica.ch>**

# The Globalization of Telecommunications and some Elements of a European Doctrine

Titu I. BAJENESCO, La Conversion

## Zusammenfassung

Die Globalisierung der Telekommunikation und einige Elemente einer europäischen Doktrin

Mit Blick auf die fortschreitende Globalisierung der Telekommunikation erörtert der Autor die Evolution der Netze und Dienste. Er unterstreicht die Wichtigkeit der Normenharmonisierung und die Notwendigkeit, global anbieten zu können, der sich die Telekommunikationsunternehmen gegenübersehen. Es werden regulatorische Aspekte privater und öffentlicher Netze erläutert und schliesslich einige Elemente entwickelt, die zu einer europäischen Doktrin beitragen können.

## Résumé

La globalisation de la télécommunication et quelques éléments d'une doctrine européenne

Dans la perspective de la globalisation de la télécommunication, l'auteur examine l'évolution des réseaux et des services. Il souligne l'importance de l'harmonisation des normes et la nécessité pour les opérateurs des télécommunications d'être en mesure de proposer une offre globale. Il explique certains aspects de la réglementation des réseaux privés et publics et développe quelques éléments susceptibles de contribuer à une doctrine européenne.

## Riassunto

La globalizzazione delle telecomunicazioni e alcuni elementi di una dottrina europea

Prendendo lo spunto dalla globalizzazione progressiva delle telecomunicazioni, l'autore illustra l'evoluzione delle reti e dei servizi. Egli sottolinea l'importanza dell'armonizzazione delle norme e la necessità, che interessa da vicino le aziende di telecomunicazione, di creare un'offerta globale. L'autore spiega determinati aspetti di regolamentazione delle reti private e pubbliche e sviluppa infine alcuni elementi che possono contribuire a una dottrina europea.

## Summary

The Globalization of Telecommunications and some Elements of a European Doctrine

With the ongoing globalization of telecommunications in view, the author discusses the current evolution of networks and services. He underlines the importance of the harmonization of standards and the need for telecoms operators to be capable of creating a global offer. Some regulatory aspects of private and public networks are explained and finally some elements contributing to a European doctrine are developed.

## Introduction

The 'global village'<sup>1</sup> is coming into view. The major telecom corporations are devoting serious attention to their *strategies for expansion* worldwide. Their efforts are mirrored by the increasing use financial, industrial and commercial enterprises are making of the *rapidly expanding world network*.<sup>2</sup> International business, which depends heavily on the possession and transfer of information, is being conducted

increasingly without regard to traditional boundaries. Networking is becoming commonplace.

During the next decade the telecommunications market and above all the services' market will change enormously. This explains why the strategic importance of communications in the economic and social development of countries has not only been recognized, but is now considered vital. The competitiveness must be improved, and the flexibility of the structure should be increased. The major stake of the next decade for telecom operators will be to enable as many customers as possible to benefit from all the possibilities offered by the new technologies.<sup>3</sup>

## Major Evolutionary Developments

During the last few years, the economic world has seen a new type of company forming; it is what we

<sup>1</sup> The problem is that — in spite of siren voices which offer us globalization as the cure for all ills — any service provider intending to be successful must focus at all times on the customer. Surely globalization is a factor, but it is not in itself the issue. The *issue is understanding and meeting customer's needs*.

<sup>2</sup> The original impetus came from the technological advances of the last two decades, which opened the way for the new services we take for granted today. In dismantling the dominant position of the monopolies, privatization and deregulation are today changing the structure of telecommunications. These changes have created new problems and new challenges. The task of national regulators in providing and maintaining a more or less level playing field has proved more complicated than most people expected; and the most appropriate role for the *International Telecommunications Union* (ITU) in the new circumstances is under consideration.

<sup>3</sup> This can only happen by a delicate balance between co-operation and competition with the different players from the information technology sector. The evolution of national and international regulatory frameworks and the generalization of competition must go hand in hand. Obeying the rules of the game is vital to the smooth running of the market mechanisms.



call a *worldwide company*.<sup>4</sup> It is not so much characterized by its ability to sell goods and services on an international scale as by its capacity to coordinate the activities of entities operating on a world scale within a harmonious whole, in spite of the distances, the time differences, the language barrier, the monetary systems or the culture gap which separate the different components of these groups.

If one anticipates this action happening during the nineties, one can estimate that the business network will evolve in line with the changes in the business it serves. In addition, one can note that the development of services such as Electronic Data Interchange (EDI) deeply alters the sort of relations companies maintain with their clients and suppliers. Thus the existence of networks will not only alter the international structure of a company but will also signify changes in complete areas of activity. In this context, several important convergences are appearing on the technical level:

*The first trend* is the *integration* of several networks within the heart of the company, especially those used for *voice and data*. It is mainly a technological phenomenon in so far as the same digital equipment can be used to transmit voice and data as well as fixed images and video.

*A second trend* — linked to the first — lies in the fact that in business it will be henceforth impossible to

consider *data processing and telecoms* as two separate technological issues. Not only do computing and telecoms share the same technology, but they also share a *key role* within the company. Information is of little use to a company if it cannot be communicated.

*The third trend*: it appears that information technology (IT) and telecoms are uniting their forces in quite a decisive way. With *value-added services* based on ISDN and EDI, data processing and telecoms must be combined.

Beyond technical changes, the development of modern telecom networks brings changes in the nature of a world company which cause two main effects:

- A progressive simplification of company structures, a tendency to leave behind the traditional, rigid, hierarchical structure and decentralization of decision making. *Flexibility and creativity* within organizations is the first result.
- Contrary to the strategies of integration and diversification followed by large groups during past decades, companies are now focusing around their main activities and often look to *subcontract or out-source all or part of the activities* that are not an integral part of the main activities.

<sup>4</sup> The worldwide company can only be constructed and managed through a worldwide communication network. During the last few years, the strategy of many large worldwide companies have been concentrated on creating the most efficient business networks which enable them to control actions throughout the world.

## *New demands facing industry and telecom services<sup>5</sup>*

The *growing demand for multipurpose networks* has accentuated the problem of standards amongst manufacturers of telecommunications equipment as well as amongst telecom services providers.<sup>6</sup>

The *demands from clients for a single point of contact* is the start of an increasing number of joint ventures between various service and equipment suppliers such as telecom operators and manufacturers, software suppliers, computer hardware manufacturers, consultants and system integrators. Similarly, the growth of different sectors of the telecom market and the emergence of new up-to-date specializations have made this sector very attractive for *new competitors*. The field of telecommunications is being opened up more and more to new players.

## *Challenges*

The most important are that of *world competition*, that of *adapting to new demand* and finally that of *harmonization of standards*.

Today, market forces are part of everyday life for telecom operators. Customers are entitled to receive *tailor-made services* as well as services of highest quality. Operators must meet their expectations and find encouragement in this dynamic market to continue to progress in an ever increasing number of countries, and very soon worldwide. Regardless of their size, today many of the customers are demanding services on an international scale. More and more the telecom operators must be carried along by market forces and *not* by product forces; more and more, world companies are planning to hand over a part or all of the following functions to outside operators: network installation, services, operation, and maintenance. In order to be able to anticipate market demands, the operators are increasing their contribution to research and development.

Due to changes in the different companies, the demand from business in the field of telecoms is moving more and more in the following directions:

- network internationalization
- standardization of external exchanges
- search for integrating solutions
- network administration
- service flexibility
- service delegation, as management of communications becomes too complex

The synthesis of this evolution can be formulated in the following way: product research is henceforth

<sup>5</sup> Telecom operators work to satisfy the needs of worldwide companies which are going through the outlined changes. As a result, many changes have taken place in the telecommunications market.

<sup>6</sup> In Europe the will to harmonize and interconnect the national networks is an absolute priority and is progressing thanks to the efforts of the Commission of the European Union and of the European Telecommunications Standards Institute (ETSI), institutions working to develop European standards, looking towards the single European market. *Eurescom* was recently formed to promote the development of harmonized *broadband* networks.



overtaken by that of *global solutions which are highly flexible in space and time*. To have their communication needs met on a national as well as an international scale, customers are seeking a single point of contact in order to simplify procedures. They also require commitment as regards the management of the range of services as well as the quality of service. The telecom operator must then be capable of creating this global offer.<sup>7</sup>

The international market obliges operators to *adopt a mixed strategy, combining partnerships and competition*.

## Harmonization of Standards

The new situation of world telecommunications has important repercussions on the problem of standardization. For the end user, network interconnection is — in fact — a very important question, together with terminal interoperability and applications; all this imposes common standards and specifications. The only legitimacy for the markets and for their regulation is to meet customer requirements as cost-effectively as possible; this is essential and could serve as a conclusion to this presentation. We foresee more freedom, great complexity and more opportunities. The regulatory regime of the future would be driven by networking and would be different. The good economic strategies are based on common sense and the simplest ideas.

## Internationalization of Corporate Reach and Requirements

The world's economy has stretched to become global over the past several decades; major forces driving this trend are overseas investment, imports and exports from Europe, North America and East Asia. Trade and investment between corporations within these regions intensify each year.<sup>8</sup> This tells us that

- corporate communications traffic is increasing rapidly
- high-speed data transmissions are on the rise
- companies are integrating their voice, facsimile and data transmission over the same leased circuits to enhance efficiency and economy

<sup>7</sup> This kind of offer necessitates the establishment of the following elements: engineering, consultancy, a range of international and national integrable products, generic applications such as company directories or electronic mail, administration of public and private networks, specific applications and management of business communication networks. All this involves partnerships between different players in the field of information technology according to sectors of activity (e.g. software companies) as well as with other national or foreign, public or private operators.

<sup>8</sup> Multinational companies are actively establishing new affiliates and branches in any of these three areas. They are employing local forces and are selling the goods they produce in their local factories not only in the country where the plant is located, but elsewhere as well. Corporate offices and plants located throughout the three major regions must be linked through efficient networks so that management can make speedy, effective business decisions.

## Evolution of Global Networks

We can distinguish three major stages: *The first* involves utilizing public-switched networks. Telephone service and facsimile communication are the mainstay for exchanges of information regarding purchase orders, marketing and the like. *The second* sees introduction of analog leased circuits, use of international VANS, etc., to enhance communication efficiency. Data are exchanged between domestic business sites and overseas offices. The network takes on a star configuration. Transmission of voice, data and other types of information usually occurs over separate networks. *The third* stage brings integration of voice, facsimile, data and video within a fully developed private network.<sup>9</sup> This is done using high-speed digital circuits. Communication functions are sophisticated.

## Regulatory Distinctions between Private and Public Networks

Firms whose domination is asserted through controlling a telecommunications network can — by playing on their access to networks — put up market barriers against suppliers, clients or any other partner or competitor. This question is the heart of 'regulator's' preoccupations. For *public network operators*, the question primarily raised was: How can competitive market structuring of new telecommunication services and their use be guaranteed once operators hold a legal or natural monopoly over the infrastructures (at least locally)? The same question must be put forward for firms which have a large private network and are able to play with it to structure markets to their advantage.

The concept of sharing media among a certain number of users in the public or private network domain — introduced by the technical evolution — is upsetting current network organization rules. This will obviously pose a few problems<sup>10</sup>, which still remain to be clarified, particularly on a European level.

## Private Network Benefits

ISDNs have enough transmission capacity to support international videoconferencing and other new applications. Combining international ISDN and international leased circuits means global private networks can now be built in ways that offer not just better economy and convenience, but other strategic advantages as well.

<sup>9</sup> One future variation of this third stage might be a virtual private network over public-switched B-ISDN circuits.

<sup>10</sup> Confidential access is a key function; if effective, it can entail some major constraints for everything concerning network interconnection and distribution.

Limit of responsibilities: certain standards currently being developed overlap both private and public domains. The responsibilities should also be identified with certainty in all cases of dysfunction.

Service quality: as not all the system is dependent on the public operator, ensuring end-to-end quality of service will pose problems. This is also the case for the continuity and maintenance regarding the public operator service.



## Problem Areas

A number of problems must be solved; these are caused by the complexities of trying to make effective connections when there are:

- many types of services
- many types of equipment
- many ways in which private network can be hooked up to public-switched networks

Two big obstacles must be mentioned: 1. delays in compiling standards; 2. differences in regulatory schemes and services between various countries. These two barriers greatly restrict progress in building global networks.<sup>11</sup>

In the service area, problems result from the discrepancy between 64 kbit/s and 56 kbit/s, both in high-speed digital service and ISDN service areas. In some countries it is possible to create hybrid networks combining public-switched and leased-circuit networks, while in others it isn't. Certification processes for equipment to be used in the networks differ in almost every case. Service charge structures and transborder data flow regulations pertaining to intellectual rights and national security issues also vary from country to country. Customers were impatient to see these obstacles removed.

## Cost of the Obligations

The first of the questions which need to be addressed centres on defining the extent of the service obligations bearing on the incumbent carrier and on measuring the costs to which these obligations give rise.<sup>12</sup> A difficulty was that prices did not often relate to costs; a new act in Australia — which designated areas where subsidized service would be provided, identifying the operator — could prove a model for other countries.

## Elements of a European Doctrine

Whatever happens, the development of international negotiations is going to compel the Europeans to reply to a certain number of concrete questions, which — if not actually involving the elaboration of a doctrine in due form — will mean they will at least have to relinquish their habitual ways of thinking with

regard to the establishment of a common intra-EU market.

One of the questions concerns the regulatory system for *basic services* (the telephone service, in particular) and *infrastructures* in an international context. Hitherto, the ITU (International Telecommunications Union) and GATS (General Agreement on Trade in Services) have generally avoided this question, restricting themselves essentially to defining the conditions of access to these basic services and infrastructures; however, the question will keep coming up. The *resale of telephone capacity* is already a reality in the American and British market, while pressures are mounting to liberalize also the international market for the resale of capacity and bring down the prices practised by public operators, which are considered too high. As to infrastructures, there is also a certain form of international *competition*, either *between different modes of transmission* (submarine cables and satellites) or *between public and private operators*. If one adds to this the development of competition inside the different geographical zones (especially mobile/satellite communications), there is scarcely any uncertainty as to the trend: although it remains valid from a strictly functional point of view, the distinction between support and application cannot indefinitely constitute a suitable regulatory basis.

As far as the European Union (EU) is concerned, it can choose between two attitudes: a passive attitude, which means taking note of the opening up of world markets as it takes place, and an *active attitude* (to be preferred), which means not trying to modify the actual trend but exploiting it to develop its own negotiating strategy.

The second question deals with the respective *roles of the various bodies concerned with international trade in telecommunication services*, principally the GATT, the ITU and the OECD. The ITU could — in the capacity of expert and counsellor — be associated with the GATT procedures for settling disputes. The EU should recognize without ambiguity the responsibility of GATT to lay down the general rules applying to international trade in telecom services and to arbitrate in possible disputes between parties, without neglecting to practise a policy of 'checks and balance' among the different organizations concerned and to intervene as far as there is need, in order to prevent the ITU from being purely and simply forgotten. The EU should establish a balance between GATT and the ITU, which would guarantee not only the harmonious introduction of telecommunications in the world economy but also the defence of the specificity and coherence of the sector.

Finally, the EU should direct its attention to a question of an internal nature: the coordination<sup>13</sup> of European

<sup>11</sup> CCITT is the main venue for discussions regarding the networks and services comprising international communication. Problems concerning telecom terminals and other equipment are handled by the International Standards Organization (ISO) and the International Electrotechnical Commission (IEC).

<sup>12</sup> As in many regulated industries, the prices charged by telecom carriers have borne little relation to the underlying costs of service provision. In particular, local charges have generally been set at or below cost, with very high price-cost margins on long-distance and international services making up the difference. At the same time, prices for the long-distance services have themselves been distorted, since charges have tended to rise steeply with distance, even though costs are only weakly distance-dependent. The distortions are greatest in the international service, but there are also far-reaching distortions in the domestic price structure.

<sup>13</sup> This coordination involves three different levels, since in addition to the EU itself, the *Conférence européenne des postes et télécommunications* (CEPT), the 'Club' for European regulatory organs comprising central and Eastern European countries, and the member states themselves will be brought into play. The set-up is thus a complex one, but it has the advantage of being able to draw largely on available resources and of allowing for a certain flexibility.



positions. The ratification of the treaty on EU has given the Commission in Brussels new arguments for ensuring, even beyond the purely commercial aspects, a much tighter coordination than before.

## *An Authentic Multilateralism of European Policy*

Implementation of an *effective regulation* of the world market, *institutional equilibrium* and *cooperation between GATT and the ITU*, and a flexible coordination of European positions are the major components of European policy. There already exists much more than a short-term attitude, but there is still no doctrine. This bridge could be crossed if it were possible to express European policy through the medium of a simple principle, a unique concept, permitting the essential direction to be understood at a glance and not simply summarizing the contents of this policy. This principle could be that of authentic multilateralism, describing both a course and an objective. For Europe, defending the *doctrine of authentic multilateralism* would offer a whole string of advantages.

Firstly, the *tactical aspect*: The Europeans have done rather well in the different multilateral negotiation exercises in which they have participated recently. The European aptitude for synthesis and the fact that compromises among Europeans are often close to the centre of gravity of world opinion constitute unquestionable assets which neither the United States, whose negotiating attitude remains sometimes introverted, nor Japan, which does not possess the international influence in Europe, can pride themselves on having.

Secondly, the *strategic aspect*: It could be thought, a priori, that Europe would be interested in an enlargement eastwards and southwards of the area of inter-

national trade in telecom services, that is to say, just those regions that would react most sensitively to the 'lever effect' of an enlarged multilateralism. Of course, the services domain follows the dictates of its specific logic, which cannot be reduced to that applying to equipment: the fact remains nonetheless that efforts to penetrate the American and Japanese markets face numerous obstacles. European know-how in telecommunications is generally well received in developing countries. The enlarged multilateralism constitutes a means to integrate the ECE countries in the world zone for the exchange of services, while waiting for the countries of the Community of Independent States.

Lastly, the doctrine of authentic multilateralism offers Europe *advantages of a conceptual nature*, obviously not measurable, which could make their effect felt in the long term if the EU were to succeed in broadcasting a 'speech' clearly reflecting its own reality. The Treaty of Rome has not resulted in the disappearance of the member states, which, on the contrary, have become extremely useful relay posts for the EU. Even with the presence of a qualified majority, discussion within the EU are still dominated by a confrontation of national viewpoints and a search for compromise. And the freedom of trade, guaranteed by the Treaty and being a source of economic prosperity, combines with a principle of cohesion, which was again recently reaffirmed by the heads of state and government leaders. All this is not simply an idyllic vision of things but the result of a concerted and continuing effort, often meeting difficulties, of a group of countries bound together historically and geographically.

This expression of attitude, a bearer of image and identity, is in step with the true reality of Europe, which is not only heir to an incomparable humanistic tradition but also the world's leading commercial power.



**Titu I. Bajenescu**, M. Sc., MBA, MQRA — Member of the New York Academy of Sciences, Senior Member IEEE, International Expert and Consultant — was involved in the management of international and national telecommunications projects, in the feasibility studies, development and design of advanced telematic systems, systems integration with LANs, MANs and WANs, in joint ventures, liberalization and privatization, master plans for the future development of national telecoms, etc. He is also a frequent lecturer at universities and specialized international conferences and congresses and has a solid background in strategic, economic, and financial management in telecommunications. His previous experience includes reliability and quality engineering of microelectronic components and complex telematic systems, especially in the field of advanced telecommunications systems (satellite, B-ISDN, mobile cellular telephony GSM, 'intelligent' buildings, national overlay digital telephone networks, etc.). He holds two patents, is author of many technical books and papers written in six different languages and has received international managerial citations for his work.