EUROPEAN INTEGRATION AND TELECOMMUNICATIONS: RESTRUCTURING MARKETS AND INSTITUTIONS*

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Complexity characterises technical and institutional restructuring in telecommunications. This makes it difficult to determine the social and economic implications of transformations in an industry that has outgrown its monopolistic origins. This paper focuses on the external forces influencing the European Community's efforts to fashion a more open, integrated and competitive telecommunication environment. Attention is given to organisational, regulatory, and trade issues. The analysis considers whether the strategic economic and political importance of telecommunications in the wider context of European integration is taking precedence over telecommunications as a major tool of social policy.

Keywords: telecommunications, telecommunications policy, regulation, European Community, European integration

INTRODUCTION

The social and economic implications of technical advance and institutional restructuring in telecommunications present difficult challenges for policy analysis. While telecommunication supply and use traverse national boundaries and the multinational customer is becoming increasingly preeminent, the orchestration of telecommunication development remains very much a national affair. Telecommunication policy historically has been the concern of a relatively small number of institutions including the Public Telecommunications Operators (PTOs), their suppliers, and designated regulatory or other departments of national governments.

All this is changing with the advent of complex public and private networks, multiple service suppliers and differentiation in the demand

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profiles of residential subscribers and small, medium and large businesses. Freeman and Perez have suggested that in a period of rapid technical change ". .the established social and institutional framework no longer corresponds to the potential of a new techno-economic paradigm. Structural crises of adjustment are thus periods of experiment and search and of political debate and conflict leading ultimately to a new mode of regulation for the system."¹ As Europe moves toward 1992, the creation of a single European market requires fundamental adjustment in the structure, coordination and regulation of markets. Telecommunications is fundamental because of its centrality to the competitive performance of European industry and its importance as a component of the 'social' infrastructure.

This paper examines European Community (EC) initiatives to create momentum toward the formation of an integrated single European market for telecommunications. Global political and economic forces that can create imbalances in the processes of structural adjustment are examined. These forces reflect a struggle between national and European strategies designed to create a competitive market and policies intended to promote the use of telecommunications as a tool of social policy. Both efficiency and social balance require a new system of regulation for European telecommunications, but markets may be changing faster than the regulators' ability to devise institutional frameworks that can reconcile the potentially conflicting interests and objectives.

A combination of economic and political forces is pressing towards convergence in the organisation of telecommunication markets in the EC. Some of these concern telecommunications and conflicting priorities in the technical, inter and intra-firm organisational, regulatory and trade domains. However, special attention is given here to the ways in which the international environment and multilateral negotiations in the International Telecommunication Union and the Uruguay Round of Trade Negotiations on Services are complicating the development of new institutional arrangements in the EC.

Other forces concern broader socio-political and economic issues. In general there is an alliance between the Federal Republic of Germany and French governments, upheld by the smaller states of Europe. Their goals are to introduce a combination of market forces and welfare system known as the 'Social Market Economy'. On this interpretation, the European Community's '1992' programme is part of an historical redefinition of the European institutional framework.

The European telecommunication arena provides a graphic illustration of the tensions underlying dynamic processes of technical institutional change. The paper analyses the extent to which global economic and political forces are creating pressures for the establishment of a new 'regulatory' system which gives greater priority to telecommunications as a key economic and strategic resource for industry than to its role in facilitating the implementation of social policies.

A NEW INSTITUTIONAL REGIME

Pressures are strong in most countries to give a greater play to market forces and to remove constraints on the activities of telecommunication suppliers and users. At the same time, new institutional regimes are being created with the aim of balancing industrial and social priorities. Inevitably, a greater emphasis on competition and the market has created a parallel need for new modes of organising markets.

The search for new ways of coordinating or 'regulating' telecommunication production requires that regulatory, trade and standards institutions as well as the market play a greater role than in other parts of the economy. In an increasingly liberalised and competitive environment, there is an intrinsic need for coordination among multiple actors. Standards, pricing, interoperability of networks, and service management require coordination, nationally and beyond the boundaries of the state.

The choice of institutional regime that will carry responsibility for this role cannot be treated as a purely technical or economic issue. The most efficient regime will depend on how the system of institutional relations works. As Williamson has suggested this will depend on the kinds of explicit and implicit contractual understandings among the parties involved.² The nature of the political environment must affect these understandings. Institutions that work well in one system may not work well in another.

Moreover, technical and institutional restructuring is an evolutionary process. There may be significant disjunctures in technical development, but these take time, and often decades, to become embedded in technical systems. Technical and institutional regimes are not formed in accordance with models of cost optimisation and the precise calculation of economic and social benefit. They are formed by experience, analogy, and often experimentation.

The way in which telecommunications is organised and 'regulated' is, in part, a reflection of past investment trajectories. However, in situations where uncertainty increases, existing institutions can become more innovative and open to new insights as to the most effective way of organising market exchange and coordination activities. Uncertainty in telecommunications arises from rapid technical innovation and complexity as multiple network alternatives perform closely substitutable functions.³ It also stems from the wider process of institutional restructuring generated by transformation in the European economy.

Considerable diversity exists in the organisation of telecommunications despite the compatibility requirements for networks and services to ensure, at very least, de facto standards and minimum consistent patterns of behaviour. In the case of the EC, patterns of institutional organisation have differed markedly among national territories.⁴ These differences are clear reflections of much broader socio-political and economic characteristics. These must be analysed if the implications of developments in telecommunications within the

EC are to be fully appreciated. The following sections explore the forces influencing the search for a new European institutional regime and its likely compatibility with the wider European socio-political and economic agenda.

TENSIONS IN TELECOMMUNICATIONS

The scale of opportunity for telecommunication equipment, network and service suppliers as well as users is immense.⁵ The Commission of the European Communities CEC is applying pressure to create a market in which European and foreign suppliers can flourish to the advantage of all types of service users. The achievement of this objective depends on European capabilities for technical and institutional adjustment. New institutions must couple external and internal forces in a way that supports the dual objectives of telecommunication policy. Success will require a substantial degree of conflict resolution in technology, organisational, regulatory and trade areas. There is a risk of outcomes recognising the economic and strategic importance of telecommunications at the expense of less clearly defined, but equally important, social and public service objectives.

The Technical 'Imperative'

Major waves of technical innovation in telecommunications have destabilised the organisation and structure of the industry. For example, electromechanical devices created possibilities for a transition from stepby-step and crossbar switching to automatic switching. Use of the radio frequency spectrum for microwave signals, together with multiplexing techniques, led to improved transmission. Advances in microelectronics are leading to the digitalisation of telecommunication switching and transmission. Continuous innovation in software design supports an ever-growing number of service applications. Optoelectronic technologies are stimulating the use of optical fibre for transmission and optical switching is nearing commercial implementation. In computing, the cost of processing power that drives many telecommunication applications is declining at exponential rates.

Increased 'intelligence' can be embedded in networks and terminals. Public switches and private automated branch exchanges are being computerised. These technologies can be introduced by suppliers and users in many different configurations. There are tensions among suppliers and users as to the development trajectory that will best serve policy goals. For example, the 'intelligent network' concept, originally conceived by Bellcore, involves new specifications for services provided within the public switched telephone network.⁶ The concept also can be applied in support of competing private networks and service applications. Depending on the standards for implementation, 'intelligent networks' could reduce demand for private corporate networks; facilitate balanced growth in private and public service applications; or else swing the pendulum toward greater reliance on private networks.

The 'intelligent network' is calling forth a wave of institutional reorganisation. PTOs such as British Telecom and France Telecom hope that their 'intelligent networks' will compete with services offered by private network suppliers (e.g. IBM, GEIS Co. and EDS) who have longstanding experience in creating and managing large data bases. It is now recognised that success will depend on organisational and marketing competence. As one third party service supplier has suggested:

. .one doesn't buy six hours of intelligent network. You know you can't do that. The solution is a complicated process. It's a complicated process of the combination of private networking, PSTN (public switched telephone network), public data networking, intelligent gateways, and the same environment across [countries].⁷

It is not a technical 'imperative' which is driving the evolution of advanced telecommunication networks and services. If technical considerations and costs were the major factors influencing users' decisions, reasonably accurate forecasts of network evolution could be developed and these could be assessed against policy objectives. However, technologies and costs are not the only factors. Industry specific perceptions of the need for security, control, flexibility, management, skills and training, and proprietary versus common standards, all come into play in decisions to opt for different supply structures.⁸

Thus organisational factors in the supplier and user community as well as the wider institutional environment must be considered to assess likely trajectories in network evolution and appropriate institutional responses.

Organisational Parameters

The capabilities of telecommunication suppliers and users are an important dimension of institutional restructuring.⁹ Telecommunication and computing industries are characterised by widely differing perceptions of their strengths and weaknesses in technology and business areas. The tensions in these perceptions, combined with pressures from larger multinational firms to introduce flexible, innovative and less costly telecommunication applications, are resulting in highly differentiated strategies.

PTOs, equipment manufacturers and third party service suppliers are eager to capture shares of lucrative service markets. Despite the turbulence in formation of alliances, there is some consensus on the most likely trends in the restructuring of telecommunication markets.¹⁰ In essence, the multinational firm's communication requirements and the multinational telecommunication operator have become major actors in the evolution of network-based services. Multinational firms are the largest users of telecommunication services and the domestically-oriented PTO has been ill-prepared to respond to their demand for cross-border services. The large corporate actors are increasingly active lobbyists for competition and they see telecommunications as a pivotal component of industrial strategy. In response PTOs, including British Telecom, France Telecom and BDP Telekom, are reorganising their operations to internationalise their business strategies through acquisitions and partnerships.

The multinational firm's use of telecommunications has evolved through several stages. Large geographically decentralised corporations traditionally relied on public national telecommunication facilities for most of their communication requirements. PTOs provided homogeneous services including voice, telex, and data transmission although, within each country there were variations in the services offered. Users generally were prevented from connecting their own terminal equipment to public networks, but 'closed user groups' were permitted to establish private networks, e.g. SITA and SWIFT.

In the 1970s European PTOs began to respond to pressures to accommodate faster and more reliable data transmission. Public circuit and packet switched data networks were established. The French Transpac network led the way and other PTOs responded in 1979 with the international interconnection of European packet switched networks. But these networks were neither flexible nor reliable enough to serve all the needs of the multinational firms.

As the number of private networks increased, PTOs began to fear that traffic generated by their largest customers would shift to private networks. In 1988 voice traffic accounted for approximately 90% of PTO revenues and volume was growing at a rate of about 10% a year. The value of the market for data communication was estimated to be growing at some 30 to 40% per year. From the private network operator's and third party service supplier's perspective, inter and intra-firm voice and data service applications would generate additional traffic for PTOs, rather than threaten their long-term financial viability.

The 1970s also witnessed signs of competitive rivalry among the PTOs. Depending on the flexibility offered to private network users, the prices of underlying transmission, and the mix of standardised and customised services, private networks began to develop around geographical hubs. Some locations in European countries provided more favourable conditions from both a cost and quality point of view. In Europe, London became one such hub. Countries such as the Netherlands and Ireland also began to offer incentives to firms to set up manufacturing and services industries by providing flexible telecommunication infrastructures.

In the late 1980s, the advantages to the multinational corporation of establishing, managing and using private networks began to be questioned. PTOs have upgraded their public networks to provide 'intelligent network' services including management, virtual private networks and many other features. The larger customers now seek the flexibility to design their network requirements using a mix of public and private facilities.

As the PTOs move to respond to demand for advanced innovative service capability, their activities are becoming much less circumscribed by national boundaries. Some US, Japanese and European PTOs (and other suppliers) are likely to become global multinationals through alliances and joint ventures with each other and with their competitors. But not all European PTOs will be equally well-positioned to pursue an international growth strategy and most have been weak in their responsiveness to demand. Some of today's nationally oriented PTOs will become major players in information service markets, while others may provide basic transmission and switching capability entering niche advanced services to be developed by other suppliers.

These changes in telecommunications require effective competition and new models of 'regulation' at national and supra-national levels. Innovative hybrid services that cross national boundaries create pressures for open national borders and access to markets for domestic and foreign service providers. They also require the absence of restrictions on the flow of data across borders and on the location of data processing capabilities; minimal restrictions on joint ventures; the removal of regulations restricting the use and interconnection of public and private networks; and prices offering flexibility and discounts to larger users.

The European PTOs are being encouraged to accommodate hybrid corporate networks by the CEC as it seeks to create a single European market for telecommunications. Liberalised procurement, terminal certification and attachment rules and service competition are among the tools that are being used.

The trajectory of network and service development in a competitive environment raises the question as to whether benefits accruing to the multinational user will also become available to small and medium-sized firms and residential subscribers. 'Workable' competition requires that monopoly power, e.g. in infrastructure supply and 'reserved' or monopoly services, and dominant market position, e.g. in computing not be abused. and proprietary technologies, The new telecommunication environment, despite its growing dependence on competing technologies and suppliers, will require even greater attention to effective 'regulation' than the highly monopolistic environment of the past. With the emphasis on international telecommunication supply and demand, the International Telecommunication Union (ITU), the GATT (General Agreement on Tariffs and Trade) as well as EC regulation are playing an important role in shaping the development of competitive markets.

International Regulation and Trade

Institutional restructuring in European telecommunications is complicated by incentives created by the international regulatory and trade environment. The major international regulatory institution is the International Telecommunication Union (ITU). In December 1988 at its World Administrative Telegraph and Telephone Conference (WATTC) in Melbourne, Australia, a new set of 'International Telecommunication Regulations' was agreed.¹² The impetus for the conference came from the realisation that a new regulatory framework was needed to cater to advanced services, i.e. electronic data interchange, videotex, electronic messaging, and voice storage and forwarding. Despite its size (166 Members) and longevity (established in 1865), the ITU was responding to the strategic importance of telecommunications.¹³

The aim of the ITU is to maintain and extend international cooperation to improve the use of telecommunication of all kinds. It seeks to promote the development of technical facilities and their efficient operation and to improve efficiency in service provision. While it seeks to encourage its members to make services generally available to the public and to harmonise the actions of nations to attain these ends,¹⁴ its role with respect to social and economic policy is controversial.

The ITU's voting membership consists of representatives drawn from government, PTOs (Administrations) and Recognised Private Operating Agencies. Other organisations such as CEPT (European Conference of Posts and Telecommunication) and INTUG (International Telecommunications User Group) can gain observer status. Such status enables user involvement in debates and provides opportunities to influence results. In recent years, representatives from the private sector have become more active participants.

The new International Telecommunication Regulations contain a number of controversial articles, two of which became known as part of the 'Melbourne Package'. Though they are subject to widely varying interpretations, these articles encapsulate the tension between those favouring the opening of telecommunication markets to competition and those who favour a more gradual and planned approach to telecommunication development. The latter give more attention to infrastructure investment to provide public services, while the former emphasise the importance of rapid introduction of advanced, and usually competitive, services.

Thus, for example, Article 1.7, for the first time recognises the right of any member to require PTOs and Recognised Private Operating Agencies operating within its territory to be authorised by the member. This article seems to strengthen the authority of members to authorise the provision of certain types of telecommunication services and to shape their national telecommunication markets. However, a new Article 9 was added to the Regulations. This says that, subject to national law, members can allow Administrations or any other organisation to enter into special arrangements for the establishment, operation and use of special telecommunication networks, systems and services. Although it could be argued that there is little to differentiate these two articles, Article 9 carries the implication that, where members agree, any operator can provide an international telecommunication service within the territory of another member.¹⁴

The need for an article specifically addressing 'special arrangements' was considered a vital ingredient of the new regulatory framework. The United States and many of the EC Member States argued that bilaterally negotiated 'special arrangements' must be covered by the ITU to encourage the introduction of new technologies. Insofar as the Regulations provide a basis for action and guide the trajectory of telecommunication development, they have produced an environment in which bilateral arrangements can play a less covert role. The international regulatory framework is open to multiple interpretations and this supports the devolution of decision-making to the regional and national organisations which formulate competition rules and consider entry by new suppliers. The policy question is whether the processes of institution-building in the EC are ready to accept the challenge.

The ITU Regulations are the product of a 'delicate compromise' agreed through the politics of exhaustion and persuasion. The compromise mirrors incentives for telecommunication development that are emerging at the European level. It reflects the tension between the appropriation of telecommunications as a strategic economic resource that can be used to enhance competitiveness and as a tool for implementing public service priorities.

The new Regulations provide a framework conducive to negotiating special bilateral service arrangements to serve industrial users. The multinational firm's communication strategy is evolving through bilateral agreements. These are unlikely to take account of social policy priorities unless enforcement mechanisms are in place at the supranational level. Without effective regulation, bilateral agreements forged by suppliers and users will create pressure toward the disintegration of the EC market. Variations in bilateral agreements which create solutions to larger users' communication needs are more likely to develop if they need only take national regulations into account. Thus, if an integrated and balanced EC policy is to develop, it will come about as a result of momentum in the larger sphere of politics and economics.

Although the Commission acquired observer status for the first time at the Melbourne Conference, the individual representation of the EC member states within the ITU has greatly hindered the emergence of common Community positions. Since the Treaty of Rome enables the Commission to negotiate matters of commercial policy on behalf of its members, the GATT negotiating process provides the EC with a forum to present a common front.

The most recent round of trade negotiations (the Uruguay Round) was initiated in 1986 with an agreement to establish a Group of Negotiations on Services (GNS).¹⁵ Trade in telecommunication services

had already come under scrutiny by the Organisation for Economic Cooperation and Development (OECD) some years earlier. Although the role of the OECD is not to actively set or implement policy, it has played a role in setting an agenda for telecommunication trade negotiations.

The OECD has been careful not to take a position on the extent to which competition and trade should prevail in international telecommunications, but there has been a shift between 1985 and 1990. In 1985 a paper was produced for the Committee on Information, Computers and Communication Policy (ICCP) which addressed the tradeability of telecommunication services. Using a restrictive definition of telecommunication services (referring to services covered by the 1973 International Telegraph and Telephone Regulations — voice, telex and data transmission), it was concluded that as long as international regulations premised on a monopoly structure and bilateral agreements among PTOs were in place, no trade relationship could exist.¹⁶

This paper did not reflect the views of all OECD countries, and, though it was never officially released, it was widely quoted and circulated outside the OECD. It seemed to reflect the views of PTOs who saw that trade in traditional and advanced telecommunication services could be a threat to their financial viability.

The ICCP and Trade Committees then began to consider the relevance of trade concepts and definitions for trade in telecommunication services. Definitions of international telecommunication services in ITU documents and national regulations had provided little common ground for differentiating among services that could be treated as 'monopoly' or 'reserved' from competition, and 'competitive' services that could be subject to trade. In 1987, a report produced by the ICCP secretariat used a new term — Telecommunication Network-based Services (TNS) and defined these as:

. .all services that combine information production, manipulation, storage and/or distribution, with the use of telecommunication facilities and software functions. $^{17}\,$

This definiton embraced traditional services such as voice telephony and telex, as well as more advanced information, communication and transaction services. Originally conceived as a way of encouraging OECD countries to discuss differences in the regulatory treatment of telecommunication services, the term became incorporated in GATT documents,¹⁸ and it was used informally as a way of facilitating discussion of the applicability of trade concepts.

In the event, all services (from voice telephony to network-based financial services) have been put on the trade negotiating table. Although this does not necessarily mean that all negotiating parties wish to see traditional telecommunication services included in a trade agreement, it opens the door for consideration of the 'grey' area of service provision in multilateral trade negotiations, e.g. public packet switched network services and protocol conversion of various types. This area is one of the most contentious for the EC as it attempts to create a more competitive internal market.

It is unlikely that the GNS will clearly define the services that should be subject to trade liberalisation, but the international trade framework favours incentives for market liberalisation and competition. Without service definitions, and in the absence of an institutional framework which takes account of public service objectives, responsibility devolves to supra-national or national authorities. If responsibility is left to national authorities, the entry of new telecommunication actors will be a function of disparate national responses to multinational suppliers and users. The evolution of 'workable' EC-wide competition must be considered a remote possibility unless a deliberate process of institutionbuilding at the supra-national level is set in train.

The CEC must forge a regulatory framework that balances strategic economic and social policy objectives. If common practice among the Member States does not emerge in the next few years, national differences will favour the formation of bilateral strategic alliances which give uneven treatment to industrial and social policy issues. To assess the likelyhood of 'convergence' in regulatory practice, analysis must turn to the major question underlying institutional restructuring in European telecommunications. Will the CEC be able to put new institutional arrangements into effective operation before increasing pressures toward bilateral 'special arrangements' take effect?

TELECOMMUNICATIONS: THE WIDER INSTITUTIONAL ISSUES

External threats to telecommunication markets in Europe in the early 1980s were generated by several forces. National institutional arrangements were responding by design or default in different ways to pressures from the US and elsewhere. Beginning in 1985, an unprecedented operation was set in train to bring this tendency under control. The objective was both to achieve a competitive telecommunication sector and to secure pre-eminence for the EC as a pre-federal level of government in any future telecommunication environment.

The imperatives for change in the telecommunication sector were only a tiny part of the re-shaping of the global geo-political environment which economic institutions in the Community confronted. Indeed external factors were as important as purely internal issues in the timing and content of the 1992 plan for the establishment of a Single European Market.

The 1985 White Paper on Completing the European Internal Market and a major report on the 'Cost of non-Europe' said little about the external dimension.¹⁹ But the external threats to the integrity of the EC system are easy to see. Among the strains in the mid-1980s were the growing Atlantic rift on defence and security, and the US-EC conflict over agricultural trade, not to mention the need for a joint response to changes in Eastern Europe.

On the industrial front, the upsurge of Japan and the Newly Industrialising Countries, as well as the perceived economic revival in the US had sapped Community morale. Increased import penetration was pointing to an apparent structural weakness in industry, especially in high technology. But individual Member States were adopting their own national policy responses, including bilateral trade deals with Japan. There was evidence that the Community was lagging furthest in those areas where the fragmentation was most acute, especially in high-technology.²⁰

In the early to mid-1980s the prestige of the European Community was at a severe ebb. The economic impetus that had made increasing integration seem an ineluctable imperative in the 1960s had waned. A form of 'conservative revolution' had occurred everywhere and most remarkably, if belatedly, in France. Beneath the surface deep divisions were developing.

Political changes at a much grander level have been the underlying imperative for the CEC' 1992 programme. The original rationale for the institutions of European integration as they grew out of the Marshall Plan had vanished. The OEEC (Organisation for European Economic Cooperation) out of which the original Community grew was an economic arm of the Cold War. With external relations dominated by the East-West conflict and the Atlantic Alliance, the Community could have no independent foreign policy stance, and all defence competence was attributed to NATO. The EC lacked the key non-economic elements needed for eventual federalism.

Within a relatively fixed global balance of power the EC had felt no need for an independent foreign policy. The global order that had ruled since 1945 was already beginning to look unstable in the early 1980s. The prospect of changing relationships with the US and of unknown developments in the USSR and Eastern Europe threatened to undermine the fragile political unity of the Member States. On his appointment as President of the European Commission in 1985, Jacques Delors sounded out Member States on what kind of initiative would be acceptable to revitalise the Community system. Only a re-invigorated pursuit of the Common Market as laid down in 1957 in the Treaty of Rome commanded support together with the symbolic removal of frontiers within the Community. Full economic integration presupposed intensified political cooperation, whether on gun controls, Value Added Tax, or telecommunications.

The 1992 Single Market programme was intended to create pressures for further integration.²¹ The CEC has succeeded in convincing key economic and political actors that the economic benefits of integrating the European market are vast. But the economic benefits derive substantially from the politics of integration. Empirical evidence suggests that the direct costs of border controls and even lack of standardisation are quite modest. The really big costs of market segmentation come from deliberate corporate strategies based on the expectation that national governments will sustain their willingness to segment markets. This relates to the public procurement field, to more subtle oligopolistic price-fixing practices, and to subsidy measures designed to shelter national firms.

The telecommunication sector has a special part to play in the economic integration process represented by the 1992 programme. On the one hand, telecommunications is a key sector for the realisation of the economic benefits of the programme. On the other, it exhibits more than any other sector some of the underlying strands in the 1992 programme. The creation of a Common Market in telecommunication equipment and services was referred to in passing in the 1985 White Paper on Completing the Internal Market. The only directive specific to telecommunications concerned ending the exclusion of telecommunications from the public procurement provisions of the Treaty of Rome. More detailed plans emerged from a separate document, the Green Paper on Telecommunications, two years later.²²

Telecommunications in the early 1980s epitomised the economic problems of 'non-Europe'. There was no Common Market and no Community dimension to policy-making. The fragmentation of markets was likely to be a particular handicap, especially for the introduction of new products that would have to be tested and certified under 12 separate regimes instead of one as in the US or Japan. Traditionally the Member States had recorded a trade surplus in telecommunication products, but the balance was shrinking and, already in the early 1980s, was negative with the US and Japan. The provision of telecommunication infrastructure and services was recognised as central to the fabric of the Community socio-economic system.

In 1983 the CEC established a Task Force to develop policies for this sector. The Charpentier-Clarke report on public procurement in 1976 had identified fundamentally different national 'engineering cultures' in telecommunications. Evidence suggests that there had been no dramatic rise of protectionist barriers inside the Community.²³ This was not the explanation for the fall in the relative growth of intra-Community trade. However, it was not the actual barriers to trade that were the crucial problem. Uncertainty about the future resulted in a situation in which firms no longer felt they had guarantees of Community-wide market access. In telecommunications, a Commission report in 1984 noted that the lack of coordination between national policies necessarily added to the 'objective' uncertainties for economic actors in forecasting technology and markets and so increased the riskiness of investment.

The perception of a declining European position in high technology led to the decision to give the Community a formal role in the promotion of R&D especially in collaborative projects. The CEC Directorate-General XIII for telecommunications, information technology and innovation, was created and given responsibility for opening telecommunications markets to competition. It has been inclined to seek change through a process of political consensus among network and services providers.

The most striking development lies in the domain of Directorate-General-IV which is responsible for competition policy. DG-IV is actively seeking opportunities to use its executive authority across the board in telecommunications. This gives the Commission a high profile, adapted to the political ideology of the times, and it may bring considerable economic benefits.

In its Green Paper on Telecommunications in 1987, the Commission devoted considerable space to discussing which provisions of the Treaty of Rome provided a basis for regulating telecommunications.²⁴ It highlighted the articles of the Treaty which deal with competition policy. The competition policy directorate already had executive competence under Articles 85-94 of the Treaty to deal with unfair practices by both firms (monopolistic behaviour, etc.) and governments (subsidies, etc.). Both aspects are important in telecommunications.

The Commission declared that it fully intended to use its powers under Articles 85 and 86 which deal with anti-competitive collusive agreements between firms and abuse of dominant position by monopolies. More controversially, the Commission declared its intention to invoke littleused powers under Article 90, Para. 3 of the Treaty to pass legislation 'necessary' to secure compliance without reference to the European Council of Ministers.

This precedent was stressed in sections of the Green Paper on Telecommunications, but it came as a surprise to some observers when in 1988 the Commission invoked Article 90 to end the PTO's monopoly on terminal equipment.²⁵ This procedure was challenged by a number of Member States, notably France, Italy, Belgium and Greece, although they claimed to sympathise with the basic aims of the Directive. The response to this Directive demonstrated the problems the CEC confronts even in attempting to reach agreement on the simplest problems. Despite this furor, the desire for a speedy solution also led the Commission to invoke these powers to restrict the PTOs' monopoly on services. The same four countries sought to define the monopoly PTO boundary to include voice and data communications, e.g. X.25 public packet switched networks, and pressured the Commission to move more slowly. Further moves concerning the implementation of Open Network Provision (the terms and conditions for network use, tariffs and standards) lead to a compromise in December 1989. Countries such as Spain, Portugal, and Greece have been given more time to liberalise service supply markets, and deadlines for full liberalisation of 'non-reserved' services which include public data networks have been extended beyond 1992.

The final outcome cannot be predicted and there are still many battles to be fought. The Green Paper on Telecommunications included the proposal that the Common Commercial Policy should apply fully to telecommunications. But this policy does not yet exist. While the Commission is not in a position to insist on a single structure for the Community telecommunication market, it can determine certain common features. These common features symbolise the shape of Europe that appears to be emerging from the 1992 process. An environment dominated by competition and constrained by regulation is emerging, rather than a directly interventionist system. The balance between the social and the market elements in telecommunications will depend on the political balance in Europe in the 1990s.

CONCLUSION

Analysis of the external forces contributing to restructuring in telecommunications suggests that markets are being shaped by multiple political and economic institutional factors. These are both endogenous and exogenous to telecommunications as normally conceived by economic analysis. It is also clear that the bias of the international framework favours developments which emphasise the strategic importance of telecommunications to the larger multinational users. But the social as well as the economic role of telecommunications is important to the EC.

Institution-building at the European level is creating solutions at the macro-political and economic levels. However, there is little evidence in telecommunications of clear success in building institutions that will cope with pressures toward bilateralism. If the multinational firm's telecommunication strategy is to benefit the majority of users, concerted attention will have to be paid to infrastructure and service development and their implications for social policy.

While the Commission can make progress in the GATT negotiations to create a more certain environment for investment in network-based services, this will be to uncertain advantage. To protect the social dimension of the Single European Market, the Commission will have to move quickly to set up an institutional framework to accommodate in practice, as well as in principle, the social and industrial objectives of the Community's programme for 1992.

The future telecommunication regime will depend on the larger forces that are changing the map of Europe. The collapse of Soviet domination of Eastern Europe and the prospect of German unification places the EC at a crucial turning point. The '1992' plan was intended to stimulate more than de-regulation. If, as now seems likely, the demands of the current French and German governments are met, and the EC moves beyond the aim of implementation of the Rome Treaty to fuller political union, then the institutional mechanisms for pan-European telecommunication regulation could be put in place. But if the process of integration in these other dimensions falters, then the pressure toward fragmentation in the telecommunication sector could run counter to the aim of a unified and socially balanced European telecommunication framework. The hope is that the very danger of this happening will impel the evolution of new institutions.

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- 12. International Telecommunication Union, 'The changing telecommunication environment: policy considerations for the members of the ITU', *Report of the Advisory Group on Telecommunication Policy*, Geneva, February 1989.
- 13. International Telecommunication Union, *Final Acts of the Plenipotentiary Conference*, Nice, 1989, Constitution, Article 4.
- 14. Space limitations prevent full citation of the relevant Articles and Opinions. The relevant texts are paraphrased here. The reader is referred to ITU, Final Acts of the World Administrative Telegraph and Telephone Conference (WATTC-88), Melbourne, 1988, 'International Telecommunication Regulations, Article 1 and Resolution No. PL/2; Article 9 and Opinion PL/A.
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- 19. CEC, Completing the Internal Market: A White Paper from the Commission to the European Council, Luxembourg, 1985; P Cecchini et al. 1992 The European Challenge, Gower, London, 1988.
- 20. J. Pelkmans, Completing the internal market for industrial products, CEC, Luxembourg, 1986.
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- 22. CEC, Green Paper on the Development of the Common Market for Telecommunications Services and Equipment, Brussels, COM(87) 290 final, 1987.
- 23. See Sir R. Clarke and G. Charpentier, *Les achats publics dans le Marche Commun*, unpublished report to the CEC, 1976, P. Holmes, *Real and imaginary barriers to trade within the EEC and economies of scale*, University of Sussex, International Economics Research Centre, Discussion Paper No. 87/47, 1987.
- 24. The Treaty of Rome, Article 113, para. 2, states that "The Commission shall submit proposals to the Council for Implementing the Common Commercial Policy".
- 25. Standards setting activities for the EC were transferred to the European Telecommunications Standards Institute in 1989 as part of the CEC's programme of implementing its proposals for the creation of an internal market for telecommunications.
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- 27. CEC, Commission Directive on Competition in the Market for Terminal Equipment, Brussells, April 1988. Texts of Directives on Services and Open Network Provision have also been issued.