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COMMITTEE FOR INFORMATION, COMPUTER AND COMMUNICATIONS POLICY

INTERNATIONAL TELECOMMUNICATIONS: A REVIEW OF ISSUES AND DEVELOPMENTS

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FOREWORD

The Committee on Information, Computer and Communication Policy agreed at its session in March 1993 that a discussion paper should be prepared taking stock and reviewing the issues and developments relevant to international telecommunications policy. The aim of this paper is to fulfil this mandate. The paper was discussed by the TISP Working Party at its June 1993 meeting and at the ICCP Committee in October 1993. The paper was derestricted by the ICCP Committee in October 1994. The report was prepared by Mr. Dimitri Ypsilanti.

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INTERNATIONAL TELECOMMUNICATIONS: A REVIEW OF ISSUES AND DEVELOPMENTS

1. Introduction

This paper is meant to be perspective in nature as well as prescriptive. There are a number of telecommunication issues at the international level which can be resolved fairly rapidly and a number of opportunities available to open telecommunication markets rapidly. These opportunities are also highlighted in the paper. Policy makers in the telecommunication area have become increasingly aware that in a number of cases the rate of change in telecommunication technologies and in structural characteristics of services are far outpacing the ability of existing policy frameworks to adjust. As well, political developments have also allowed more rapid changes to take place in telecommunication markets than was envisaged in the recent past. Business participants in the sector are also undertaking strategic investments in order to position themselves for the future changes they envisage. These corporate shifts are, in themselves, placing increasing pressure on existing market structures and market boundaries.

Tardiness in undertaking regulatory change can have important negative effects on the economy and society at large, slow diffusion of new technologies and services, reduce potential economic efficiency gains and retard new employment growth opportunities. The plea for haste underlying the arguments put forward in this paper is conscious and justified. Assertions have been made that certain of the issues discussed here are not "mature" and that they should be put aside for later consideration. The premise of the present paper is that issues put forward in the paper are indeed at the stage where concrete solutions are required to take steps to open markets and reach agreements. In some cases they may only be bilateral or restricted to a small number of countries; in other cases they can be wider; and in still other cases they can be multilateral.

The ability of countries to reach agreements and open markets for telecommunication services in a rapid and relatively simple way is evident from the examples of international simple resale, or international value-added network services. If there is sufficient will, and consensus among a number of Member countries, then a fairly rapid opening of markets could result. Further discussions may help with clarification of some issues, but in a number of cases resolution of issues will come with the implementation of arrangements or agreements to open markets internationally.

It is worth stressing that international telecommunication market liberalisation has largely been driven by domestic policies of a number of countries who have put into practice their belief in market economics by abolishing telecommunication infrastructure and service monopolies. These countries, in liberalising their telecommunication markets have done so largely on a non-discriminatory basis and without seeking reciprocity from other countries. An important effect of the liberalisation effort by many of these countries has been to show, by example, the beneficial effects of competition in telecommunication. This has often persuaded other countries to begin opening up their markets.

2. The changing international landscape

2.1 *An overview*

The telecommunication service sector has essentially been treated as an infant industry in national markets. This was undertaken through a market structure based on the monopoly provision of infrastructure and services and through a range of regulatory restrictions aimed essentially at protecting the incumbent operator. As in the case of most economic policies protecting infant industries concern has been traditionally aimed at protecting incumbent suppliers from competition rather than stimulating the economy wide benefits that can result from new services, new technologies and lower prices. Traditionally, therefore, users' benefits and requirements, lower prices for users through more open markets, and benefits of new technological developments have not been given priority.

The justification for monopoly was based on universal service considerations, but in many cases efforts to attain universal service were only begun in the late 1970s. Most countries with a monopoly telecommunication structure did not in any case define universal service or provide guidelines for the operators to follow in service provision and the development of infrastructure. Even now many of the telecommunication operators, or governments, attached to the principle of monopoly provision of telecommunication service argue that it is required for the provision of universal service. A number of studies have shown that competitive provision of telecommunication services does not have adverse effects on the provision of universal service. On the contrary competition can enhance the ability to provide universal and affordable access to telephone service. These studies have also shown that there are a number of regulatory tools available to ensure that there are no adverse effects on universal service from competition [see OECD, *Telecommunication Infrastructure: The Benefits of Competition ICCP 35, 1995*]. Supporters of monopoly telecommunication market structures have on the other hand put no evidence forward to indicate that such structures are necessary for universal service.

Border protection has traditionally placed limits on the ability and scope for the internationalisation of the telecommunication industry. International telecommunication service has been viewed as taking place through correspondent agreements which required joint provision of service. The focal point of PTOs, and government policy, was therefore traditionally the domestic market.

In contradiction to this domestic focus, the economies of OECD countries were in the 1970s and 1980s becoming increasingly globalised. This occurred through increased trading relations, increased foreign direct investment, increased outsourcing for manufacturing inputs, and as a result of the globalisation of service activities, especially financial markets. These developments placed pressure for access to telecommunications services at the international level and, with the requirement for interconnection of subsidiaries and branches of enterprises, there has been increasing demand for more liberal telecommunication regulatory frameworks. Similarly, in the service sector the growth of cross-border transactions in securities, requirements for information flows and the heavy demand for financial transactions led to user demands which were often incompatible with existing supply and regulatory structures. The pressure has not let up; rather it has increased as users from manufacturing and service industries are viewing telecommunication networks and services as a strategic tool to enhance their international competitiveness and implement global strategies.

Linked with these demand developments, significant technological developments have taken place. Technology has affected the form in which international services can be supplied. Different networks and services have developed such as mobile, VSAT, packet-switched networks, and alternate calling procedures, which allow for different forms of access to customer and can circumvent traditional

networks and services. Just as technological developments which led to the emergence of value added services in the early 1980s required structural and regulatory reform in telecommunication services, present developments also are creating pressures for structural and regulatory change.

As well, it is evident that these technological developments and the service opportunities they are creating are not slowing down. In this context two complications emerge. First, many of the new technologies and services are directly competitive with the PSTN and, second, in a number of areas telecommunication and broadcasting regulations are coming increasingly into conflict.

The demand for telecommunication services in OECD countries is no longer concerned with just obtaining access to a network (in terms of obtaining a telephone line) -- in a number of OECD economies universal service and access has been attained. Rather the demand is for customised solutions, mobility, flexibility and efficient service offerings at cost-oriented prices. Standardised services are not always appropriate for large users, and the trend in service development is towards a merging of voice, data and video functions. Even residential customers are beginning to demand more flexibility in service offerings. The trend is towards increasing market differentiation.

As a result of market pressure, and on changing perceptions on the economics and role of telecommunications, there has, since the late 1980s, been much more policy emphasis on the international telecommunications market. This has largely reflected the changing role of telecommunications in economic structures. Telecommunications has led to the creation of a range of new services and has become a key infrastructure for the industrial economies in which information has taken a new role. The economic role of telecommunications has meant that access and use of facilities and services have become of primary importance. Linked to this is also the fact that the telecommunications industry has also in itself become a major multinational industry especially as a result of the increasing number of market opportunities which are emerging through privatisation of fixed link operators and through licensing of new mobile networks. The fact that traditionally rates of return have been high in the industry has transformed the industry into one of the key global sectors.

Although important liberalisation has taken place since the late 1980s in the international telecommunications market, continued pressure has been maintained for increasing international market access opportunities and modifying the rules affecting the provision of international telecommunication service. This has taken place in a number of multilateral fora, as well as at the regional level and bilaterally.

Three watersheds affecting the rules governing international telecommunications should be noted: the first was the adoption of revised International Telecommunication Regulations supplementing the International Telecommunication Convention of the ITU. These modifications, agreed to at the World Administrative Telegraph and Telephone Conference (WATTC 88), essentially paved the way for more liberal conditions for access to and use of international leased circuits (for example, through the revision of Recommendation D.1). The second development was the spurt in bilateral International Value-Added Network Service arrangements (IVANS) which were entered into by some OECD countries. The third important development was the discussion of telecommunications in the context of trade negotiations, both multilaterally and regionally.

These developments in the changing market structure for international telecommunications have their roots in the significant restructuring of telecommunication markets at the **national level** which were taking place in a number of OECD economies, and at the **regional level** as a result of European Community initiatives.

Among these initiatives is the elimination of reserved services as of 1.1.1998, resulting in a significant step forward in liberalisation efforts (a transitional period was allowed for some EU countries with less developed networks). The reality of the 1998 deadline has already led to a number of countries to independently initiate changes which will introduce one or more alternate facilities-based carriers in their countries. It is unlikely that many developed economies will be able to maintain monopolies for the provision of infrastructure once there is no longer a service monopoly and when there are requirements for equal access and non-discriminatory interconnection provisions in place.

European Community initiatives in telecommunications are likely to have important market liberalisation effects in a number of telecommunication policy areas; these initiatives are likely to influence and impact regulations in other OECD countries as well. The areas where important initiatives are taking place include satellite communications, mobile communications, interconnection, numbering policy and universal service.

The logic of domestic liberalisation eventually led most countries, which had implemented domestic market reform, to exert pressure for more international reform. Also since the late 1980s much more recognition has been given to the international impact of domestic regulatory and policy decisions. The requirement for domestic regulations to be in conformity with international policy developments is also increasingly being accepted. In a number of cases the developments in international telecommunication markets are now placing pressure for domestic reform.

2.2 *Pressures driving market change*

It is clear that in the present context international communications are in a transitional phase. Market entry is allowed in some countries for the provision of telecommunication facilities and/or basic services, a large number of competing international infrastructures are being developed, and many PTOs are entering into joint ventures to offer international value-added network services which, in a number of cases, offer integrated services including their traditional revenue source (voice telephony). Pressure for further market opening is occurring in a number of areas which are elaborated on below.

The pressures driving change are intermingled with developments which have already led to market liberalisation in a number of areas. In the mid-1980s the concept of competition in international telecommunications was considered as alien but it has slowly become an accepted concept. First, and foremost, competition emerged for value-added network services. But competition is also emerging between public telecommunication operators. There are a number of forms this is taking:

- competition for value-added network and managed data network services;
- new facility entrants providing international service;
- competition between infrastructures (satellites versus fibre-optic);
- competition by PTOs for transit traffic and to provide leased lines;
- competition by resellers;
- new integrated international services in which voice is one component;

In many cases competition is asymmetric. This is because the pace of change in domestic regulations, and the structural characteristics of change have not been consistent. This factor added to the lack of a coherent international framework has meant that no countervailing international pressure has

been placed on domestic regulations to create more consistency in the international market-place. It can be argued that the lack of such a framework is at present, perhaps, the greatest drawback in ensuring a progressive, coherent and harmonious development in an open and liberal telecommunications market.

2.3 *Globalisation strategies*

Significant new opportunities to generate revenue growth for carriers are seen as coming from meeting the requirements of multinational corporate customers. As their production, sourcing and marketing becomes increasingly globalised, their needs for access to international network services is also increasing. New developments in production and communication technologies are leading to the increasing ability to use communications in the production process thus also stimulating the demand of large industrial users for telecommunications. These two demand forces are leading carriers toward implementing globalisation strategies especially in trying to provide end-to-end international network management services. This shift in strategy by carriers is quite revolutionary in that it is changing the traditional frame of reference of carriers whereby their activities were limited within national borders and international co-operation was undertaken only through joint activities with other carriers.

Globalisation is leading carriers to undertake strategic investment in foreign markets, strategic ventures with other telecommunication carriers, and investments in areas outside traditional telecommunication activities including the information technology and media areas.

There are, however, important regulatory and policy restrictions in the globalisation of telecommunication carriers. The existence of monopoly market structures, reserved services and foreign investment restrictions are key in this regard.

The other important restriction is linked with the integration of telecommunication and broadcasting. Over the last year increasing policy and public attention has focused on the possibilities of "multimedia" and the economic and social potential of integrated telecommunication and broadcasting technologies. At present existing regulatory and legal frameworks are effectively slowing down technological and market evolution. There is no reason for this. Regulators have now sufficient experience in putting regulatory safeguards in place to ensure that market domination does not diminish market competition. Tools from the telecommunication industry to ensure market access, interoperability and interconnection can readily be extended to cover "multimedia" activities.

2.4 *International simple resale and alternate calling procedures*

The expansion of international simple resale (ISR), and the development of a number of new services, including "country direct calling", "third country calling", "dial-back" services, refile, etc. (collectively referred to here as alternate calling procedures) are also beginning to have some important effects on the provision of international telecommunication services. This is because these activities affect services which are, in the majority of OECD countries, still reserved. Resale essentially involves leasing transmission capacity in bulk and offering this capacity for resale on the basis of individual circuits and services and, normally, at a discount relative to the price which a customer would pay directly to the operator for the same service. Resale is an arbitrage operation and its profitability depends on the relative imbalances between prices and costs of services provided by a PTO.

The profitability of international simple resale (ISR) derives from arbitrage and especially from the potential it offers to by-pass the accounting rate mechanism. In most cases existing settlement rates far exceed the costs of terminating calls therefore resellers can achieve a significant cost advantage over

traditional telecommunication operators. Two-way ISR can provide an effective incentive to reduce accounting rates. Unidirectional ISR can have the effect of allowing one country to avoid making settlement payments with respect to outgoing traffic, while continuing to receive settlement payments for incoming traffic. This asymmetry will obviously work strongly in favour of the operator and country originating the traffic delivered by the reseller.

ISR can also be used to support services not only with the country in which the leased circuit terminates but with a number of other countries. This ability to "hub" or refile traffic is particularly attractive when the reseller is associated with a public telecommunication operator. The increasing growth of refile and the emergence of a number of different alternate calling procedures is, much like ISR, occurring because of incentives to arbitrage prices, whether they be accounting rates or collection charges. Arbitrage opportunities occur because of price asymmetries and divergences of prices from cost. The greater this divergence the greater the incentive to participate in arbitrage. Cost-oriented pricing will reduce arbitrage opportunities but should not be expected to eliminate them totally. This is because asymmetries may continue to exist because of differences in local conditions. In a number of cases alternate calling procedures may serve a specific market requirement and, while such services may be more expensive than direct calling, they continue to be valued by users. These services do, however, shift the origin of the call from one country to another country. These type of calls do not by-pass accounting rates, but they do reduce profits of carriers in destination countries since an outbound call tends to earn lower returns than an incoming call. These companies essentially play the same role as resellers in that their revenues are based on arbitrage. Unlike resellers they contribute on a per call basis to the revenues of the public telecommunication operators. They help stimulate competition and in placing downward pressure on collection charges. This should ultimately help to bring collection charges into line bilaterally, which in the longer term could lead to a more balanced international calling pattern and therefore should be beneficial settlements balances. However, in the shorter term since an outgoing call is equivalent to an "import" they tend to lead to a net increase in the overall **national** call imports.

Equal access and non-discrimination would imply that new entrants in the market for international telecommunication services pay for access on the same terms that a monopoly providers pays itself for access. This requires an unbundling of monopoly provided rates and a determination of the costs of termination of traffic. By not unbundling access, carriers are in fact leaving themselves open to arbitrage opportunities which occur via refile or ACPs. The solution is therefore not to try and limit these services but rectify the pricing problem.

Developments in ISR and alternate calling procedures may also require that policies such as maintaining uniform accounting rates and "proportionate return" are reviewed by regulators since they are becoming less relevant and may have the unintended effect of restricting competition.

2.5 *International prices and pricing structures*

The issue of international telecommunication pricing and the accounting rate mechanism has become important not only because call prices and accounting rates are excessively high relative to costs, but because these price distortions curtail the development of new services, growth in traffic and create trade disequilibria. The question of high international accounting rates and high and asymmetric collection charges have, over the last few years, been given priority in international fora.

The accounting rate issue has been under significant scrutiny over the last few years at the International Telecommunications Union (Study Group III of the Telecommunication Standardization Bureau (TSB)) and at the OECD. The TSB agreed rapidly to a reformulation of a new Recommendation

(D.140) and although certain issues remain outstanding, there seems to be sufficient international sensitivity to the fact that changes are required. Considerable progress has therefore taken place in improving the relevant international recommendations, in obtaining greater transparency and in the reduction of accounting rates and adjustments in collection charges. It however remains important to continue to exert pressure in this area to reduce accounting rates and collection charges, and, above all, to move toward a cost-oriented pricing system.

The fact that a number of operators who are providing service in a competitive environment are adjusting prices significantly while monopoly operators have been much slower in reducing prices is in itself creating competitive pressures by providing for the type of opportunities noted previously.

2.6 Foreign direct investment in infrastructure

A number of countries which implemented significant liberalisation in telecommunications structures since the mid-1980s have eliminated some restrictions on foreign direct investment, others have maintained these despite liberalisation. In the area of mobile communications these restrictions are less prevalent although in a number of cases there appears to be an unwritten rule that foreign investors need to form joint ventures with local companies in order to be successful in license applications. Countries with existing monopolies for the provision of telecommunication infrastructure and services do not, by definition, have any restrictions *per se* on foreign investment. With increased liberalisation and with increased globalisation, the issue of foreign direct investment in infrastructure and provision of fixed link and mobile services could become problematic.

The increasing participation of operators in foreign markets began several years ago with operators opening a number of representative offices overseas. This soon extended to the offering of consulting services and has extended, depending on the market to physical investment. Where markets have opened more rapidly, such as for data services and mobile services, foreign direct investment has grown rapidly.

For fixed communication services the partial privatisation of monopoly operators in a number of developing economies, and investment in these enterprises by telecommunication operators from OECD countries, helped to break the taboo which had been associated with foreign investment in infrastructure. The allowance of foreign investment with a few restrictions in the provision of fixed link communications has accelerated this trend. More and more countries understand that domestic ownership is not the sole measure to maintain control over the telecommunications sector. This can be undertaken through appropriate regulations.

The fact that in the provision of mobile telecommunication services there has been a significant opening up of markets to foreign direct investment has also helped in bringing down the barriers of foreign ownership restrictions. In many countries mobile licenses have been awarded without restrictions on ownership. However, there needs to be further clarification and greater transparency of licensing procedures for mobile services. It is important that there be greater equivalency among countries in requirements imposed on foreign-owned operators.

As already noted in the paper, operators who wish to provide end-to-end service on their own infrastructure might hope to overcome the restrictions imposed on them.

2.7 *Mobile communications*

The rapid technological and economic changes affecting the provision of mobile communications are having a profound effect on the communication industry. Increasing mobile services are competing in price and quality with fixed link services, but with value added features such as roaming ability. In Europe price arbitrage is already taking place as a result of inter-country roaming capability. Prices for fixed link services as well have already been adjusted downward to ward-off competition from mobile services. These pressures will continue to grow, especially as mobile operators are able to terminate an increasing share of their traffic using their own facilities.

However, the fact that incumbent fixed link operators are also involved in the provision of mobile services (especially in Europe) can restrict the development and growth of these services depending on the particular strategy of the fixed-link operator. It would facilitate growth of mobile services, and competition between fixed link operations and mobile services if there were more structural separation between operators providing fixed link services and their mobile service branches.

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The above highlights some of the developments which are having important implications for the present structure of international telecommunications services. Perhaps one of the more profound changes that these developments will have will be to change the system of joint provision of services between two national monopoly carriers. This would have profound effects on the international market structure and would likely lead to a longer term restructuring of the industry. The concern of policy makers should be that there is an important gap emerging between those OECD countries with liberal international telecommunication regimes and those with more closed markets; this gap is widening.

Many of the developments taking place which affect international telecommunication are interrelated. Resale and refile are emerging mainly because of high international prices - high prices create an incentive to by-pass the international PSTN. High international prices result mainly from the lack of international competition. Price asymmetry provides an incentive for "dial-back" and other related services. Bilateral IVANS and regional agreements are emerging because there is no international framework allowing for progressive liberalisation and setting down rules of the game. At the same time technological developments are creating new services and are providing the ability to offer services in different ways which implies that existing policy frameworks, which tend to be inflexible, are in many cases dated. Although the issues and developments are highly interrelated there has been a tendency to examine them in an isolated and on a stand-alone basis. There has also been a tendency to examine issues and seek solutions in different fora where, at times, different perceptions and positions have arisen from national delegations. In a number of cases as well, operators continue to dominate in the policy decision process.

It is evident from market demands and user requirements that further liberalisation is required in international communications. It is also evident that a number of countries are willing to push forward with domestic policy change (which opens up their own market) irrespective of developments elsewhere and without placing any conditions on foreign participants or other countries. Despite this optimism it is necessary to maintain a momentum in the rate of change of markets, arguably even an acceleration in the pace of change. The important question here is how to facilitate this change and ensure that friction between countries is not generated during the process of change.

As change occurs there is a need to distinguish between changes in regulatory mechanisms, harmonisation of regulations and market opening and/or changes which may result from non-regulatory mechanisms.

3. Furthering market liberalisation

3.1 *International value-added network services*

In practical terms there are no international regulations which restrict the provision of international value added network services (IVANS). Existing restrictions are first and foremost **national**. Some countries have, to a lesser degree now, because it suited their national policy framework, interpreted restrictive CCITT Recommendations as binding and as a result have not favoured the provision of international VANS. However, the International Telecommunication Convention and the International Telecommunication Regulations, which are binding on signatories, do not contain provisions which would prevent IVANS from being supplied. On the contrary, the provision of IVANS is facilitated because of Article 9 of the Regulations allowing special arrangements between countries.

Recommendation D.1, before its reform during the 1989-92 CCITT study period, prohibited the resale of international leased lines and interconnection of leased lines to public networks. The recent revision of D.1 has, subject to national regulations, made it possible to enter into resale agreements and interconnect leased lines with public networks. D.3 (Special conditions for lease of inter-continental telecommunication circuits for private service) in that it is applied on the basis of D.1, has also changed. These changes have not yet been incorporated in many national regulations.

Over the last few years there has been an acceleration in the number of IVANS arrangements which have been agreed to on a bilateral basis. The rationale for IVAN arrangements is mainly to provide a green light to the business sector that they can pursue IVAN business opportunities, to set down the parameters within which business can operate, and to ensure that opportunities in both bilateral partners are to some extent similar, but also transparent. The arrangements can aid to eliminate misunderstandings and differences in the interpretation of national telecommunication regulations which could constrain business development. The arrangements also provide a means for the resolution of bilateral issues. They are also important as a means of ensuring that dominant national carriers will enter into arrangements for non-tariffed services with foreign IVAN providers on a non-discriminatory basis compared to domestic providers. These bilateral meetings have also served as a forum to exchange views and information on telecommunication policies within and between the two countries.

In the present situation IVAN arrangements have provided an umbrella for a number of different agreements. These include: agreements between PTOs and IVAN service providers, between IVAN service providers from the countries entering into an arrangement, and between the administrations in those countries. In all existing arrangements there are no restrictions as to who can provide IVANS. As well, in all cases IVANS can be provided on an end-to-end basis and, while not always specifically stated, IVAN providers are not required to obtain Recognized Private Operating Agency (RPOA) status.

Despite the bilateral arrangement there can still be differences in regulatory frameworks among partner countries. These often result in differences in treatment of IVAN service providers. For example, IVAN providers from one country may be subject to less regulatory control in their own country than in another one. However, the importance is in ensuring non-discriminatory treatment.

Although the bilateral IVAN arrangements have certainly played a role in fostering the development of international markets for such services, it should also be recognised that IVAN services are being offered between countries where no formal arrangements exist. This is being done in some cases with the active support of PTOs. For example, INFONET (owned by a number of major telecommunication administrations) is offering a number of international VAN services. Many carriers are stimulating the growth and development of IVANS by offering, or preparing to offer, such services themselves. Yet many of these operators have not been willing to open the market to private initiatives.

The emphasis on **bilateralism** has been due to several reasons. First, bilateral discussions have facilitated rapid conclusion of arrangements since they have been usually undertaken between countries with fairly similar regulatory frameworks. Second, arrangements could be tailored to take into account differences between regulatory requirements in the two countries. In fact most of the arrangements contain wording stating that provision of services need to comply with the national laws and regulations of each country. Third, bilateralism has been viewed by some countries as a rapid means of prying open international markets which would have been harder to achieve in a multilateral bargaining process.

The IVAN arrangements have a different status to the more formal regional free trade agreements which have covered telecommunication services. That is they have been **arrangements** entered into through an exchange of letters between senior government officials in the respective countries. They have also been modified through a similar process. IVAN arrangements have, however, in several instances led to some modification of national regulations. Many of these arrangements have followed quite similar structures.

For this reason, as well as to widen the market opening achieved by existing IVANS, the OECD Secretariat has on a number of occasions recommended that Member countries consider incorporating IVAN arrangements into a multilateral framework (not an agreement). This could take place in two ways. First, a general framework (or guidelines) could be devised for IVAN arrangements, and countries would be urged to comply with such a framework when entering into bilateral IVAN arrangements (that is customise their arrangements). To some extent this is already taking place in that countries are to a large extent copying existing IVAN bilaterals. Second, existing bilaterals could be multilateralised at a formal level.

The first option would allow for an easy extension of arrangements at a wider level (e.g. for the OECD countries as a whole). Countries have been reluctant to discuss IVANS other than in a bilateral context. This could be because some countries believe that bilateral negotiations by their nature are more rapid, they provide greater bargaining power. This may be true when there are few arrangements. Now, however, it is more important to obtain rapid market opening which is best undertaken in a multilateral way. The fact that the status of IVAN arrangements vis-à-vis a General Agreement on Trade in Services (GATS) framework has not been clear and has also been a constraining factor. It is encouraging to see the APEC initiative to try and obtain a general framework for IVAN arrangements among their Member countries.

A GATS will certainly play an important role in future liberalisation of value-added network services. This is because the supply of these services depends on the availability of leased lines, their conditions of use, provisions as to their interconnection, regulatory provisions regarding use of the public networks, equipment homologation, and tariffication. Most of these factors will be ultimately affected by a GATS.

Linked closely with IVAN provision is the requirement for managed data network services by large users with extensive corporate networks. This demand is linked to the globalisation efforts of

carriers noted earlier. The demand for virtual private network services, and one-stop shopping capability is increasingly leading PTOs into the IVAN market and increasing their interest in direct foreign ownership.

Much more progress would be achieved in IVAN markets if there were more transparency in terms of circulating information on the arrangements, and if countries were willing to discuss areas where they have encountered problems in other countries.

3.2 *Facilities competition*

Many of the issues and emerging regulatory problems discussed in this paper stem from the lack of competitive international markets for infrastructure and the provision of basic services. Distortions created by this have led to high prices and attempts to by-pass these prices or at least take advantage of them. Ultimately, competition is the best means to overcome these problems, but proxies for competition can also be used as a means to improve, as opposed to correct, the existing situation.

Unlike goods and a number of services, the provision of telecommunication services depends on infrastructure which is not mobile across borders. Therefore, foreign direct investment is required or, alternatively, access to existing infrastructure on a fair and non-discriminatory basis. Some operators might believe that in the future they can meet their customers' requirements more effectively if they provide end-to-end services which may require owning and operating facilities from the originating customer end to the terminating customer in another country. The required facilities will vary depending on the type of services being offered. In a number of cases facilities may be used only to provide services to specific customers and not for the public at large.

In most cases the arguments put forward against facilities competition have been based on the idea that such competition may lead to a loss of national control over a key strategic resource, and may jeopardise universal service capability of the existing operator. However, some countries think that these problems may be overcome by appropriate regulatory safeguards to ensure that there are no negative effects. In particular, appropriate licensing regimes can ensure that new entrants have certain obligations.

What form should facilities competition take? In those countries where domestic facilities competition is allowed there are differences in the state of market opening. Some markets are completely open with no discrimination with regard to whether facilities provide local or international services; some markets do not discriminate as to the national origin of facility service providers. In a number of OECD countries the principle of facilities competition has been accepted for mobile services. The breakdown in facility monopolies is also occurring through private networks interconnected with public networks some of which are providing data/voice services. As well, the ability of resellers, and VAN providers to install switching capability is also reducing the facility monopoly. In other words, there is movement toward considering "facilities" as being equivalent to transmission capacity, while switching is becoming closely linked to the offer of services.

Increasingly, private inter-continental cables are being put into place leading to some competition in transmission capability. A number of operators from OECD countries are investing in facilities of other countries, in a number of cases in OECD countries, but especially in developing countries and in Central and Eastern Europe and the New Independent State of the former Soviet Union. Such investment can enhance the end-to-end service capability of operators providing them with an unfair advantage in international communications.

If the network infrastructure is to be opened to competition then there seem to be few objective reasons to argue that only one part of the network infrastructure should be open to competition and not another. As long as there are appropriate safeguards in place to ensure universal service, market criteria should be allowed to determine which parts of the network will be subject to competing investment. This would imply that it is inappropriate to argue for an opening of long-distance services to competition when in most cases the provision of telephony is undertaken on an integrated basis. Similarly arguing for an opening of international telephone service to competition makes important assumption about the configuration of the market structure which may not be supported by other market participants. The implication, therefore, is that it is artificial to try and slice the network into separate components of local, long distance and international service.

Similarly, attempts to create artificial differentiations between satellite facilities and fixed-link facilities should not be maintained. This implies that market initiatives affecting the construction and operation of telecommunication carriage facilities should apply generally to all facilities. The importance, and beneficial effects, of allowing cable TV companies to provide telephony is at present being demonstrated in the UK.

An argument often used to defer facilities competition is that a particular country's network is still at the development stage, and therefore new entry cannot be allowed until a more mature infrastructure has been maintained. It is equally valid to argue the inverse: competition will help in accelerating the development of the infrastructure more rapidly and efficiently -- the relative backwardness in development by some countries is precisely because of inefficiency by the incumbent operator.

The issue of competition for basic services and facilities has only begun to be treated in international fora. Since mid-1993 discussions under the auspices of the Uruguay Round have begun to explore the treatment of basic telecommunication services. In order to ensure as wide a coverage as possible the definition of what constitutes basic services is sufficiently broad. Although a general commitment to examine and develop concepts for basic services could be agreed in the present round of trade negotiations, it is too early for concrete developments to take place.

More concrete, and rapid, market opening opportunities could come through supporting European Commission initiatives, through supporting ISR and alternate calling procedures, and supporting infrastructure competition at the national level. As well, national initiatives to accelerate broadband communications could aid significantly in changing the industry landscape and eventually market structures.

More effort needs to be also given to open satellite facilities to competition. It is not tenable to argue, on the one hand, for more international telecommunication market opening and competition, when on the other hand separate satellite systems are excluded. Countries need to ensure greater consistency and treat satellite services and facilities as they would for fixed-link infrastructure and services.

In this context, discussions on new entry have taken place especially at INTELSAT. However, these have been concentrated on whether new entry caused economic harm to the incumbent operator (INTELSAT), rather than on creating a framework for the competitive provision, on a fair and non-discriminatory basis, of satellite facilities. What is required is a more general policy debate, which takes place outside of the institutional structure of the International Satellite Organisations, modelled on the CEC's Green Paper on Satellite Communications.

The issue of most favoured nation treatment is important with regard to facilities competition. Because there are important national differences in terms of allowing market entry for new facilities, as

well as differences in restrictions with regard to foreign investment, the issue of MFN (on an unconditional basis) with regard to facilities (and basic services) has been viewed as difficult. Earlier work on this issue had suggested that it could be envisaged that in certain cases MFN would apply unconditionally, and in others on a conditional basis (see ICCP 21).

Given the nature of infrastructure investment in telecommunications it is clear that countries would in any case have the right to limit market entry through, for example, a licensing regime, to new entrants (viewed as a quantitative restriction in the GATT context). This would not be viewed as a restriction as long as licensing allocation is undertaken on the basis of agreed objective criteria, transparently, and on a non-discriminatory basis.

The GATT, the NAFTA and the EC are the fora where further consideration is being given to the modalities to liberalise basic services and the underlying facilities (NAFTA includes a proviso that in the future consideration will be given to further liberalisation including public telecommunication services). It may, however, be also useful to consider the issues raised by opening-up basic services and facilities to international competition in a more informal manner to explore different possibilities and solutions.

3.3 *International telecommunication pricing*

The primary problem in international telecommunication pricing is that there is no mechanism to ensure that prices change with cost structures. In terms of general economic policy, competition is accepted by all OECD countries as the mechanism to ensure that prices are cost-oriented and market mechanisms work efficiently. This has not been the case for telecommunications, except in a few countries. As concerns international telecommunication pricing practices and procedures there has been general acceptance of the need for change. The difference has been that some countries view reform as essentially tinkering with existing mechanisms to introduce improvements. Others see it as requiring more fundamental change. It can be argued that the most effective solution is a competitive environment, but other means also exist which can help in the reform process (e.g. resale and refile). The latter solutions are shorter term and transitory.

Although one should not prejudge the willingness of countries to rapidly rebalance their tariffs and adjust accounting rates, experience has shown that continued pressure needs to be maintained if D.140 is to be implemented effectively.

Governments and operators from OECD countries, while in general supporting cost-orientation, seem reluctant to envisage the operation of a payments and settlements structure in a cost-oriented environment. The OECD Secretariat have repeatedly argued that each country should implement a non-discriminatory, cost-oriented international access charge. Recently there have also been some operators and other market participants who have also argued that the accounting rate system and the settlements procedures should be abandoned. It is not certain that monitoring alone is sufficient to continue the movement toward a cost-oriented international pricing mechanism. The OECD Secretariat has argued that OECD countries should try to attain cost-oriented accounting rates within a three year period. One suggested mechanism to attain this would be agreement on different benchmark accounting rates over this period for OECD countries. This process was viewed as being important, first because it indicates to ITU Members that the developed countries are serious in implementing D.140 (the acceptance of which was largely driven by OECD countries), and second, it reduces the ad hoc nature of changes taking place in bilateral accounting rate negotiations and provide a certain discipline in countries toward rate rebalancing. As well, it has been argued that in step with the reduction in accounting rates, commitments should be made to reduce collection charges.

Domestic price rebalancing, price regulation, and of course competition, will influence collection charge levels. Informal international pressure can also play a role, and undoubtedly, lower accounting rates will ensure that there is no justification for high collection charges. Telecommunication prices are covered in trade agreements: the draft GATS Telecommunication Annex refers to the requirement for parties to ensure that pricing of public networks and services is cost-oriented and the NAFTA refers to the need for the pricing of public telecommunication services to reflect economic costs directly related to providing these services -- cross-subsidisation between public telecommunication services is not ruled out in the NAFTA.

Both the ITU and the OECD need to continue considering the issue of accounting rates and international tariffs. Although it is useful that principles of cost-orientation are included in trade agreements covering telecommunications, it is unlikely that the technical consideration of these issues can or should take place in those fora.

3.4 *Transit traffic*

Every minute of traffic carried by an operator is normally profitable so an essential strategy of telecommunication operators is to maximise their traffic growth. Transit traffic which is not generally costly to route can be important for revenue growth and profits. The recent build-up of national digital infrastructures has also augmented capacity which has led operators to seek such transit traffic. This has also occurred at the international level where an increasing number of operators are involved in construction projects for inter-continental facilities.

When important price differentials exist in direct connections between two countries, A and B to third destinations, C, then indirect transit routing can take place (i.e. B to A then to C) in order to take advantage of lower charges in A. Route by-pass can therefore be an important means of arbitraging away price differentials and stimulating competition. PTOs are increasingly trying to increase their share of transit traffic through price competition for the leasing of circuits and other transit fees. Operators are presently on a number of routes competing for traffic in a low key manner given that there are no precedents for dealing with transit competition. In a cost-oriented international telecommunication market competition for transit traffic is likely to be viewed as a normal competitive practice. In the present context, based on a notion of joint provision of international telecommunication services, a significant increase in competition for transit traffic may be problematic over a transitional period if the rules of the game for this are unclear.

Linked with transit competition is the question of refile. This issue arises because the agreed accounting rate must be paid by the country which originates traffic if it unilaterally routes traffic over a route not previously agreed. Appendix 1 of the International Telecommunication Regulations (article 1.4) states that:

"... where one or more routes have been established by agreement between administrations and where traffic is diverted unilaterally by the administration of origin to a route which has not been agreed with the administration of destination, the terminal shares payable to the administration of destination shall be the same as would have been due to it had the traffic been routed over the agreed primary route and the transit costs are borne by the administration of origin...".

By requiring that refiled traffic is paid for at the normal accounting rate this regulation discourages traffic rerouting and active bidding for traffic by PTOs. Refile is a sensitive issue since capacity is often put into place by Administrations to meet the requested needs for transit traffic of other

administrations. The issue of refile needs to be examined in a more detailed way than has presently been the case.

3.5 *International simple resale*

Earlier it was indicated that one of the aspects of ISR is to by-pass the accounting rate system. For this reason some regulators have restricted ISR to countries which operate what are regarded as equivalent regimes. Problems in the interpretation of "equivalent" have arisen mainly because of differences in national regulatory regimes. In particular, the question of equivalency has slowed progress in the diffusion of ISR. In the case of the United States ISR is only allowed with those countries which provide "equivalent resale opportunities" -- the aim of this policy position is to try and avoid one-way resale into the US, that is, to ensure that inbound minutes of traffic are not diverted. This decision seems to be overly based on a **carriers** perspective rather than an overall users perspective. If the primary goal is to reduce prices and introduce competition then resale in itself would be allowed despite any potential short-term effects. In Australia the fact that there are negative aspects of resale is recognised, but it is thought that the potential benefits to customers are more far reaching.

Regulators should not allow these differences to slow down the liberalisation of international telecommunication markets. However, the issue is not always correctly posed. The more correct question to ask is "How can we alter the international accounting rate system in order to allow for different services such as ISR to take place?".

Essentially international simple resale is being stimulated by national regulators who are allowing it to take place based on bilateral discussions. This, process is not taking place within any international framework and, such as IVANS, the development of ISR services tends to be ad hoc. Since the issue of ISR is not covered in existing or proposed international frameworks it would be beneficial to obtain some agreement for the extension of ISR arrangements on a coherent basis. Again, such as for IVANS this could take place through informal guidelines which would give resellers and regulators certain parameters within which to function.

3.6 *Access and use of telecommunication facilities and services*

Access, at the international level, has yet to be well-defined for facilities and reserved services. International telecommunication operators providing public switched services have usually bilateral agreements regarding call handling. These cover prices (accounting rates), and other issues of bilateral interest. Since these agreements are bilateral in nature the conditions of access to a particular country's infrastructure may differ even though cost and technical conditions are similar.

In a market structure where infrastructure and basic telecommunication services are provided under monopoly conditions there is a need for value-added network service (VANS) providers to obtain access to network resources and services (this is true as well where there is a competitive environment). In addition since the monopoly often also participates as a value-added service provider, the access to network resources and services of competitive VANS providers must be on the same terms and conditions as the monopoly has when participating in competitive markets. It is well accepted by regulators that these factors require safeguards in terms of **availability**, **quality** and **price** of leased circuits, that is, non-discriminatory behaviour by operators.

Where competition in infrastructure and basic telecommunication services is introduced in a monopoly situation, the incumbent operator will still have a bottleneck monopoly position -- at least until sufficient competition has emerged. This market power can be manifested through controlling access to the existing infrastructure (especially the local loop), through provision of leased circuits, and through access to customers. Experience has shown that this bottleneck position is important and can take a significant period to reduce. A primary safeguard is therefore to prevent dominant carriers from using their dominant position in an anti-competitive way. Even where there is a relatively high degree of competition in basic services and infrastructure carriers need to have access to each others networks and need to rely on each other for call completion.

In terms of the cases above access safeguards need to cover:

- access and use of leased lines;
- non-discriminatory access to infrastructure and basic services;
- interconnection;
- access to relevant information;
- cost-oriented tariffs;

The principles underlying access are those of **equality**: that is a telecommunications operator must provide competitors with network resources and services on the same terms and conditions as the operator when it uses its own network resources and services.

Interconnection is one of the more important requirements to ensure fair and equitable competition. Principles of interconnection are not yet developed in most Member countries. They have not been examined at the international level. Yet developments in service provision -- mobile services, competitive fixed-link infrastructures, satellite services, ISDN, etc. -- will require a framework for interconnection which is based on common international principles. Any developments in liberalised international trade in services, for example, will depend on effective interconnection conditions. The European Community in recognition of the importance of interconnection are beginning to examine a common framework for interconnection. It has already been shown that differences in interconnection regimes can lead to misunderstandings at the international level. The initiative being taken by the Community would provide a useful opportunity to obtain a far wider perception among OECD countries of interconnection frameworks and the underlying principles.

Given that many governments place restrictions on alternate infrastructure investment by service providers other than the public carrier, the only other means such service providers have to provide end-to-end service is through interconnection. Under such circumstances governments have a responsibility to ensure that adequate interconnection frameworks are in place.

Although a number of GATT principles could be borrowed for such a common framework, the GATT is not an appropriate forum in which to develop such principles.

3.7 *Other issues*

There are a number of other relevant international regulatory issues which need to be considered within a coherent framework. Some of these are technical in nature but have policy implications. These

may include, for example, type approval procedures, standardisation issues and issues such as numbering. The latter issue has become increasingly international. For example, data network identification codes have been cited as retarding the international development of X.75 services. Numbering has been recognised as a key factor in the emergence of new service providers and is increasingly being treated as a finite national resource which is the responsibility of regulators and should not be the responsibility of operators. Europe in particular needs to adopt a numbering plan which provides a seamless system throughout Europe facilitating the provision of trans-European services. The cost in changing numbers implies that the issue needs careful consideration and needs to be given a long term perspective.

4. Assembling the parts

The issues discussed above are well known. Many have been discussed at length. Some may require further analysis, but at this stage the problem is not so much a lack of solutions, but that adequate mechanisms are not in place in order to make solutions more concrete. As well, there appears to be in a number of cases a lack of clarity with regard to policies of some governments for international telecommunications policy. If these governments wish to obtain increased liberalisation internationally they need to push on all fronts liberalisation decisions, even if unilateral steps are taken. It is only by showing the beneficial effects of more open markets that many other policy makers will become convinced to take similar steps.

International discussions on telecommunication policy have tended to be dismembered which can lead to a lack of coherence in seeking overall solutions. Should the different parts be brought together? If so, how and where? It has been argued above that many of the issues are interlinked -- the basic origin of the issues is that the structure of national and international telecommunications sector is not based on a competitive market framework. Given the close relationship between different issues then it would be logical to eventually treat the issues within a common framework. In the present structural context the distinction between infrastructure and reserved services, on the one hand, and VANS on the other hand, can still be maintained. This distinction is likely to remain, however, a short-term phenomenon.

If these two main areas are accepted as being sufficiently separate for the moment then what process should be used to implement further liberalisation and what are the consequences of such liberalisation?

In the case of VANS a GATS would provide a framework within which progressive liberalisation could be implemented. The framework, which would be binding and multilateral, would also lead to commitments by countries to implement change in domestic regulatory structures. It would also provide a mechanism to settle disputes. Nevertheless, it would also be a slow process lagging significantly behind changes in service features, technological change and market requirements. The process would also lag behind the domestic regulatory changes which are currently being implemented in many OECD countries and a number of the newly industrialising economies. The GATS may also slow change in that some countries may wish to defer regulatory restructuring in order to maintain bargaining power.

The GATS framework provides stability and progressivity and helps ensure that there no regressive steps are taken. But, the pace of change set by a GATS could be slow and unable to adequately take into account market requirements, technological and service changes. The fact that countries may retard moves to open their markets because they are waiting for an outcome from a GATS discussion could also have negative effects on the speed of market opening.

The requirement for progressive liberalisation is important. For example, many of the bilateral IVAN arrangements have not in themselves led to a significant market opening. Partly, this has been because they are undertaken between countries which had relatively similar market opportunities. An IVAN framework which provides guidelines for countries could be important to extend the number of arrangements, but without the means to extend market opening, would not be that useful in the longer term.

For the other major issues -- international simple resale, pricing, refile, facility competition and competition for reserved services -- the question of whether these areas should be subject to liberalisation and what form should this take is more complex. The fact that some of the issues are linked does not imply that progress in market opening cannot be undertaken in one area. For example, ISR impacts on the other issues, but the process of market opening can begin with ISR with trickle down effects on other areas. Similarly, the pricing issue can be tackled. In examining these detailed areas, however, the wider vision of the future and the ultimate objectives should not be lost.

The structural impacts of increased competition in facility provision and in the provision of reserved services will be significant, especially with regard to the structure of international telecommunication services. These changes will also raise a number of new international issues, noted previously, which will require detailed consideration (for example, interconnection and number allocation, accounting rate structures and licensing). Open competition will also require that foreign investment restrictions are also eventually eliminated.

Can the GATS be used in the short term to increase facility and reserved service competition? It is unlikely, at least at the present stage. Rather the approach would tend to be longer term ("progressive"). Developments in the European Community, other European countries and other OECD countries suggest that policies may be moving more rapidly than would likely take place in a GATS. The problem would then be to ensure that there is some coherence and understanding between the developed economies of their initiatives and that regulatory differences do not restrain the opening of international markets.

The question is where can such co-ordination take place? One alternative is to resort to bilateral agreements, or agreements between "interested parties". These would need to have as their mandate the need to lead to progressive liberalisation. By definition these would tend to take place between countries which are already at a similar stage of market opening. There is therefore little leverage provided through such discussions on non-participants, except perhaps through showing that concrete benefits arise from such agreements. If as suggested above, pressure for market opening should be applied on all fronts, the foregoing does not exclude a GATT approach or an approach which uses other fora either to clarify issues or to begin concrete discussions to open up markets.

The bilateral or "interested party" approach would also seem to be the most effective for other issues such as ISR and price reform. This type of process is defective, however, in the sense that it does not, for the longer term, provide the more comprehensive international framework which is needed to ensure multilateral participation.

A defect of existing bilateral initiatives between countries as well as regional initiatives is that participants do not put sufficient effort in informing non-participants of the initiatives they are taking, the impacts these changes are having, and problems encountered, etc. A more open approach would help draw non-participants closer in the process of efforts in market opening.

Neither has there been any effort by countries to take a constant strategy in pushing for liberalisation or regulatory change in certain areas. The logical movement of change is from informal

arrangements between countries with similar market opening, to an extension to regions/blocs (US-EEC-OECD- Pacific-EFTA), to further extension (OECD, NIEs), and to eventual multilateralisation of arrangements. The initiative to begin the process and inspire willingness of the reluctant countries must come from those countries which have embarked on change at the national level. They also have, at times, tended to move slowly in trying to extend their national policies wider into the international arena.

Depending of course on the outcome of the GATS, it would be fruitful for OECD countries to have an in-depth policy debate on implementing competition in international telecommunication markets which could set down a concrete programme of action for OECD countries over the rest of the decade.