THE CHANGING ROLE OF GOVERNMENT
IN AN ERA OF TELECOM DEREGULATION

TRANSFORMING ECONOMIC RELATIONSHIPS IN INTERNATIONAL TELECOMMUNICATIONS

Chairman's Report of the Seventh
Regulatory Colloquium
3-5 December 1997, Geneva

INTERNATIONAL TELECOMMUNICATION UNION

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PREFACE
BY THE SECRETARY-GENERAL

I am extremely pleased to introduce the Report of the Seventh Colloquium on the Changing Role of Government in an Era of Telecom Deregulation (known in short as the Regulatory Colloquium), which was held at ITU Headquarters in Geneva on 3-5 December 1997.

The Colloquium represents an important continuing initiative to consider, in an informal, expert and practical way, some of the fundamental issues of telecommunications regulation that arise from today's fast-changing telecommunications environment. The Colloquium is non-governmental in nature, privately financed, and brings together, in their individual capacities, high level telecom officials and experts from a diverse range of countries. The participants meet in Geneva for three days to formulate practical advice designed to be of immediate benefit to policy makers, regulators and business communities in developed and developing countries alike.

The Seventh Colloquium had as its topic the present crisis in the international system by which payments are made between countries for international telecommunications services (known as the accounting rate system). The Colloquium's main conclusion is that the accounting rate system, and the level of accounting rates, is not the real problem: as the Chairman's Report indicates, the real problem is the lack of telecommunications development in many countries due to such causes as inadequate investment, inefficient pricing policies, monopolistic industry structures, and a lack of clear and effective regulation.

To address this underlying problem, the Colloquium has formulated a series of conclusions and practical recommendations. We hope that they will be of value to the Second World Telecommunications Policy Forum (WTPF) as it formulates its advice to ITU members.

The funding for the meeting was provided on a collaborative basis by the Friedrich Ebert Foundation of Germany (FES) and The World Bank, through its ***info*Dev** program. Both organizations had funded earlier Colloquia, both separately and cooperatively. For their critical help, I am most appreciative to Dr. Erich Vogt of the FES and to James Bond, Bjorn Wellenius and Carlos Braga of The World Bank.

As noted in my Introduction to the Report of the First Colloquium, the concept of the Colloquia originated with David Leive when he was Chairman of the ITU's Telecom '91 Regulatory Symposium in Geneva in October 1991. An extensive round of informal consultations with experts from many countries led Mr. Leive, Ambassador Gerald Helman, who provided critical assistance, and me to conclude that the Colloquium would meet a significant need and be of great practical value to many countries. This forecast has been more than borne out by the success of the seven Colloquia and the widespread use of its Reports.

In view of his outstanding leadership of the Colloquia, I asked David Leive after the Second Colloquium to continue as permanent Chairman.

The results of the Seventh Colloquium are reflected in the following Chairman's Report by Mr. Leive. Together with several of my senior colleagues, I participated throughout the three day session, just as I had at the first six Colloquia. In addition, we were fortunate to have with us Mr. Neil McMillan, of the UK, prospective Chairman of the Second WTPF and Mr. Tsunekazu Matsudaira of Japan, Chairman of ITU Study Group 3.

The Report describes the consensus of the participants on the principal issues discussed, but does not represent individual participants' views.

This publication also includes the executive summary of the Briefing Report prepared by an independent consultant, Michael Tyler, which was presented to the Colloquium in draft form to serve as a basis of the discussions. The full Briefing Report will be translated and distributed to all administrations later this winter. Both the executive summary and the Briefing Report reflect Mr. Tyler's own research and views, and are not products of the Colloquium discussions themselves.

Planning is now underway for subsequent meetings. The Eighth Colloquium will take place in the last quarter of 1998, on a topic still to be selected.

In view of the Colloquium's underlying mission to provide practical advice for policy makers and regulators, a program is being developed with World Bank help for a more active, intense and pervasive dissemination program, particularly employing websites and the Internet in an interactive fashion. The project should be underway shortly.

Finally, I want to reiterate the importance I place on innovative methods such as the Colloquia that can provide practical help to the telecommunications community throughout the world which must deal with the complex challenges that arise from changing industry structures, evolving economic policies and new technologies.

Pekka TARJANNE
Secretary-General

Geneva, January 1998

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CHAIRMAN'S REPORT

TRANSFORMING ECONOMIC RELATIONSHIPS IN INTERNATIONAL TELECOMMUNICATIONS

I. INTRODUCTION AND SUMMARY

The Colloquium initially reviewed issues concerning the traditional international framework for payments among telecom operators for international services, often called the "accounting rate system". It did so because of widespread recognition that the accounting rate system is seriously, if not fatally, undermined, and may not be sustainable; that it urgently requires reform and/or replacement; that international traffic is increasingly flowing outside it; and that the system is further put into question by the WTO Basic Telecommunications Agreement.

The reasons for the crisis are not hard to find: the accounting rate system is near collapse because it evolved as part of an industry structure based on monopoly providers in different countries dealing with one another bilaterally. It is now increasingly being undermined by technology and the market forces unleashed by the entry of competition.

After more in-depth review, the Colloquium's principal conclusion is that the accounting rate system, and the level of accounting rates, is not the fundamental problem to be addressed, but only part of the problem, and should not be seen out-of-context as major policy issues in themselves. The Colloquium identified as a principal policy and social goal the need to preserve and expand telecommunications systems so as to meet the growing needs of all peoples at reasonable and affordable prices. The fundamental problem is the lack of network development in many developing countries, which makes it difficult to achieve this goal. This lack of development in turn is due to inadequate investment, inappropriate pricing policies, monopolistic industry structures and the absence of clear and effective regulation. These systemic deficiencies have partly been

masked by the high settlement payments flowing under the existing accounting rate system to some telecoms operators, especially in developing countries. Understandably, governments and telecoms operators in these countries are reluctant to change the current arrangement on their own initiative.

In addressing this broader issue the Colloquium recognised that the forces which are driving the changes and causing instability in the traditional industry structure (greater reliance on competition and market forces, technology innovation and convergence, and economic arbitrage) were likely to continue and accelerate. It was also, therefore, important to act quickly.

Addressing these fundamental issues would still be urgent even if the accounting rate system did not exist; in effect, the accounting rate issue serves as a "catalyst" for timely consideration of them. Put another way, the focus needs to be not only on wholesale rates (the accounting and settlement rates) but primarily on competitive retail rates – what the ultimate consumer is charged for communications services, and on issues of development.

Structural changes in the accounting rate system, accelerated reductions in settlement rates, and the large-scale carriage of traffic outside that system, are all occurring. Such changes will continue, with different countries or groups of countries selecting different solutions. The effects will necessarily result in a redistribution of economic benefits between operators and between countries. They will present some operators and some countries with severe problems of adjustment, especially in the case of many developing countries, and above all in some of the least developed countries.

The Colloquium recognised that major efforts are already underway in a variety of forums to reform the accounting rate system; ITU Study Group 3 is a principal focus, as reflected in the Report of its December 1997 meeting. The reformed system will probably continue to be used to an extent that cannot yet be foreseen, alongside the new modes of operation. It is likely to embody substantially reduced accounting rates, and may be based on uniform "termination charges". The Colloquium therefore did not

focus on such changes "within the system", but on the broader issues. Its conclusions may be helpful in the preparation of the Second ITU World Telecommunications Policy Forum, which will consider these issues in March 1998, as well as to the Second World Telecommunications Development Conference.

Solutions that effectively serve global telecommunications development can be found by linking the restructuring of the international payment system with the restructuring of other aspects of the international economic relationships in telecommunications, and also some aspects of broader telecommunications policy as well. Key elements include:

- fresh approaches to investment in the public telecommunication network.
- restructuring of pricing to reflect cost.
- exploitation by operators in developing countries of the positive possibilities offered by "new modes of operation" in international telecommunications.
- the orientation of telecom regulation to promote competition, investment and new technologies.

Policy makers and regulators in many countries often are still not aware of how profoundly, and rapidly, technology and market forces are transforming the telecom landscape, that this rate of change will continue if not accelerate, and that corresponding regulatory changes are imperative. There is an urgent need to increase their awareness of the actual trends, issues, and policy alternatives. A suitable, targeted and urgent transition process is needed through which this can take place.

The Colloquium's work proceeded in two stages:

- An assessment of the forces of change, the likely pace of change, and the likely impact of change
- A discussion of how operators, regulators and governments, assisted by the ITU, and using all available ITU mechanisms, can best ensure a successful adaptation to the new environment.

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II. FORCES OF CHANGE, THE PACE OF CHANGE, AND THE IMPACT OF CHANGE

The accounting rate system is the product of a world that is rapidly vanishing, in which international telecommunications traffic was exchanged between national monopoly providers, through correspondent relations. There are three key factors hastening the break-up of the old system:

1. *The rapid introduction of new technologies and new modes of operation*. The industry is being restructured with global networks and systems and a host of new private players. Increasingly, providers of communications and related services are shareholder-owner companies.

2. *The 1997 WTO Basic Telecommunications Agreement and the application of the basic GATS disciplines to the global telecoms market through that Agreement.* The key elements include the so-called Most Favoured Nation principle (MFN) requiring non-discriminatory treatment of foreign operators and superseding "reciprocity" policies; commitments to provide market access for foreign operators; national treatment (*i.e.,* treating foreign operators the same as national operators); and the comprehensive set of regulatory principles included in a large number of countries' WTO commitments through the Reference Paper. All this is backed up by the WTO's Dispute Settlement procedure. These features of the 1997 Agreement have established new rules of the game for over 90% of the world's international telecommunications traffic.

3. *The emergence of even more open competitive conditions within certain pairs of countries with competitive industry structures; among the countries of the EU; and as between the most liberalised WTO members.* These conditions have been characterised by some as a "Single Market". For traffic among these countries (which account for over 80% of the

world's international telecommunications traffic) there is likely in future to be relatively little difference in price between international and long distance domestic calls. In numerous instances (in the EU for example) international calls will be terminated at the same interconnect charge as domestic long-distance calls; in other words, operator A can get into country B at country B's domestic rates.

These three key factors deserve some elaboration:

The emergence of "new modes of operation" for international telecom services, effectively bypassing the accounting rate regime, is one of the stronger forces for change. The "new modes" include leased-line resale; the carriage of traffic within international global alliances such as Concert, Global One, or Unisource; "alternative calling procedures" such as refile, hubbing and re-origination; and the extension of an operator's network to include Points of Presence (PoPs) in other countries, interconnected to the public switched network there at a local interconnect rate rather than the international accounting rate. These new modes of operation increasingly are provided by operators which are new players; some are not even ITU members (though they may be Sector members); some will never use the old settlement system.

The WTO Agreement has very far-reaching implications that are now only beginning to be fully understood. Certain countries (including a few developing countries) have made commitments in the WTO Agreement for very extensive dismantling of barriers against cross-border competition; these include removal of foreign-ownership restrictions. By committing themselves to the provisions of the Reference Paper on regulation, they have also committed themselves to extensive regulatory safeguards assuring fair treatment of foreign operators. In addition, there was an "understanding" among parties to the WTO Agreement that the application of the accounting rate system would not give rise to action by Members via the dispute settlement machinery. This understanding is to be reviewed not later than the start of the further round of WTO negotiations on services that is due to begin

not later than 1 January 2000. This "understanding" was necessary to accommodate concerns that the current bilateral accounting rate system is fundamentally at odds with the multilateral principles upon which the GATS is based.

There are also implications that go beyond the group of WTO members that have made these far-reaching open-market commitments. These are more difficult to analyse. The combined effect of MFN and the Reference Paper commitments appears to give operators from *any* WTO country certain rights to employ new modes of operation for traffic between that country and those WTO countries (for example, most of the EU countries) where extensive market-opening commitments have been made. These rights are, it is true, counterbalanced by provisions designed to prevent anti-competitive behaviour. Telecoms operators from the open-market countries are likely to fight back if the market access permitted by the WTO Agreement to their home markets is not matched by the opportunity to pursue "new modes of operation" such as leased-line resale or Internet telephony in the other direction. The exact balance, and the consequent extent of the new opportunities for telecom operators from WTO countries generally (including developing countries) will have to be discovered in each country by trial and error, but there may be major positive opportunities for developing countries.

These three developments have the effect of increasing the pressure on the accounting rate system. The operative reality is that twenty of the most liberal countries representing more than 80% of international telecommunication traffic have decided to play (and have already begun to do so) under new rules that effectively allow foreign operators to enter the market and terminate international calls at domestic interconnect rates, bypassing not only the present accounting rates but the accounting rate system itself for the traffic between themselves. Low rates for termination and the size of the networks involved in these countries will irresistibly attract hubbing traffic from outside. While these countries may still need to utilise the accounting rate system to pass traffic to the rest of the world,

the reality is that a majority of countries is left with the minority of traffic passing under the existing accounting rate system, with much of this traffic subject to a degree of refile.

How should the countries which have not made such a radical commitment to open markets -- numerically a majority -- react? Many developing countries rely on settlement revenues to meet a variety of needs, not all telecom-related. In many cases, though by no means in all developing countries, settlements constitute a major percentage of telecom revenues. The continuing flow of settlement payments under the old system is no longer assured from operators in some net payer countries. The prospect of reduced settlement payments highlights other more systemic problems facing the telecommunications industry, especially (but not exclusively) in developing countries: low telephone penetration; unsatisfactory market structures; lack of diversity in revenue sources; high prices to users; economically inefficient pricing; monopoly providers (whether state or privately owned); uncompetitive services; and either inadequate regulation or the complete absence of explicit and structured regulatory rules, processes and institutions.

It is these underlying issues that need to be addressed urgently.

III. ADAPTING SUCCESSFULLY TO THE NEW ENVIRONMENT

What follows are some suggested specific means by which these issues may be addressed, particularly though not exclusively by developing countries. These are not mutually exclusive but can be deployed in combination. In many cases the problems addressed are not new, but the issues are still far from being resolved. The current accounting rate controversies simply bring them to the fore. Given the rapid and increasing pace of change, it is urgent that policy makers and regulators focus on these issues, and that remedial actions be taken as soon as possible.

What choices do developing countries have? The structural deficiencies described above are not simply a case of being solvable by infusions of money. In any event, the public funds budgeted by relevant international institutions (*e.g.*, the World Bank, the ITU) are not available, and not sufficient, to materially reduce the adverse impacts of a major decline in settlement revenues. So developing countries have to look to other means. For example, operators in developing countries can exploit the new modes of operation. This will require a high degree of initiative in such countries, and cooperation, by operators and regulators, policy makers and other elements of government, to insist upon and make effective use of the rights granted by the WTO Agreement.

We address five specific areas of challenge and opportunity, in turn:

- investment and telecommunications development;
- pricing policy;
- new modes of operation;
- role of the national regulator;
- transition issues.

We conclude, in Section 6, by discussing the role of the ITU and how it can best contribute to a successful outcome: that is, successful adaptation by operators, regulators and national governments to the new environment.

1. Investment and Telecommunications Development

Investment in telecommunications is a prerequisite for broad based economic development. More and more governments are concluding that investment requirements are best met by tapping market sources, including foreign private equity investment, most often in partnership with local domestic investment. However, attracting such investment and securing good results from it is a

challenge; international exchange of expertise and experience in meeting this challenge could be very valuable. Key factors which can contribute include:

- Choice of a coherent and economically appropriate pricing policy, as discussed below.
- A stable, transparent and non-discriminatory regulatory system for telecommunications (as envisaged in the WTO Reference Paper and in the work of previous ITU Regulatory Colloquia).
- A stable and appropriate regulatory and legal regime (including taxation) for investment generally, and for foreign investment in particular, while ensuring that national priorities (*e.g.*, telephone penetration, retention of a reasonable proportion of revenues in the host market) are met through regulatory supervision.
- Encouraging locally-based private investment, which gives confidence to foreign investors.
- Full use of modern methods of project finance as well as equity investment.
- Aggregation of investment, whereby several countries might act together to create an attractive investment project.

It is very questionable whether the granting of monopoly privileges, or exclusive licences for lengthy periods of time, does in fact encourage sustained investment or efficient utilisation of capital employed, rather than producing the contrary result, even though privileges of this kind have sometimes been granted in the hope of such favourable results. It is also important to recognise that changes in the accounting rate regime may affect both the value of assets in the industry and privatisation prospects.

2. Pricing Policy

The focus of public policy about pricing should be not only on "wholesale" (*i.e.*, accounting and settlement rates) but on collection, or "retail" rates – what consumers pay for communications services. What the new situation requires is a rational pricing

policy applicable to access lines and to domestic traffic (local and long distance) as well as international traffic. Developing such a policy for any country, developed or developing, requires three preconditions:

- Clear objectives, and logical adaptation of pricing policies and practices to those objectives.
- Assembly of adequate information on costs, and analysis of how to allocate them, with explicit identification of any cross-subsidies intentionally built into the pricing system. Transparency is needed to accomplish this.
- Recognition of changing technology and market realities.

A pricing policy successfully adapted to the new environment will vary from country to country, reflecting different goals and pricing approaches, but several features are likely to recur:

- The policy will reflect the importance of providing widespread *access* to telecommunications. This includes access to public, shared means of access (which can range from pay-phones to "Internet cafés") as well as access lines for individual households and business premises.
- Modified pricing structures which go beyond mere rebalancing through across-the-board increases in local pricing. Pricing structure is likely to change, for example with new or improved features to encourage off-peak traffic (for which the incremental costs are often very low, even for international calls).
- Measures to reduce costs where the simple transfer of costs from the competitive market sector (*e.g.*, international) to a less competitive (local) market is politically or economically impractical.

Such a "restructuring" of prices should reduce dependence on one or a few sources of revenue, such as international settlements, in favour of developing, so far as possible, a more robust and diverse "mix" of revenues. It will take into account demand and market conditions as well as costs.

In sum, getting the pricing policy right is one of the keys to adapting to the new environment, especially in developing countries. The new policy about telecoms pricing should provide a clear roadmap and a clear timetable. It is also directly related to foreign investment: by giving off the right signals, a pricing policy can encourage foreign investment in domestic as well as international facilities.

3. New Modes of Operation

The new modes of operation are diverse, but share one characteristic: they involve the movement of traffic outside the accounting rate system, with its traditional correspondent relationships. The new modes of operation comprise:

- leased line resale (also known as private-line resale or International Simple Resale (ISR));
- refile, hubbing and re-origination;
- international alliances of operators to provide service to multinational corporations;
- the extension of networks from one country into another using end-to-end international circuits (not half-circuits) with Points of Presence (PoPs) at the distant end, interconnected to the PSTN ("Foreign PoPs", in short);
- Internet telephony.

The case of "foreign PoPs" shows how far-reaching the new modes of operation can be. In this case, the telecoms operator provides service directly to another country, terminating calls (often via interconnect arrangements) in that country in the same way a domestic carrier would. When coupled with the market opening commitments built into the WTO regime (especially for certain countries which have made particularly far reaching commitments) the new modes of operation offer major opportunities for vast and profitable expansion of the international services business.

For operators in developing countries, the new modes of operation, combined with improved access to industrialised-country markets in countries which have made extensive WTO commitments, open up opportunities to greatly increase their traffic, especially outbound traffic between their "home" countries and these markets. Initiatives based on the new modes of operation could substantially offset, or even more than offset, the revenues lost as a result of lower settlement rates within the traditional correspondent arrangements. Operators in developing countries could undertake such initiatives either independently or in combination with other operators, perhaps in neighbouring countries; in practice, the second possibility will often be more realistic. But in exploiting such opportunities, they will have to recognise that operators in the "open market" countries may press for conditions to be imposed on their use of the new modes of operation (such as the conditions concerning the reduction of settlement rates to "benchmark" levels that the FCC has decided upon in the United States), and/or for similar opportunities to be made available to them in the developing countries.

4. Role of the National Regulator

Telecom regulation is not an end in itself but rather a tool to achieve national goals.

Effective management of the policy issues addressed in this Report requires a national regulatory agency (NRA) with adequate powers, transparent decision-making, and clear and stable policies. (See the Chairman's Report of the First ITU Regulatory Colloquium and the associated Briefing Report for a detailed description of the options for regulatory reform.) Since telecommunications in one country is more and more affected by regulatory decisions in other countries, effective and responsible management by the government and NRA in one country of their relations with NRAs in other countries is necessary. This could not be more clearly demonstrated than by the impact of the recent "benchmark" decision on accounting rates by

the FCC, although the FCC is not the only regulatory agency which makes unilateral decisions which broadly impact carriers from other countries. Decisions with far-reaching international effects should be made only after extensive bilateral or multilateral consultation. (Similar problems might arise if, as a substitute for the accounting rate system, an administration unilaterally imposed specified termination charges for international traffic.)

5. Transition Issues

There has been extensive discussion about the time developing countries may require to undertake a transition to new operational and financial arrangements adapted to the new global telecommunications environment. The key questions are: transition by whom, to what, and when? What are the rules of the game and what are the techniques employed to help manage the transition effectively? There is no one answer, as countries are not all alike. The EU countries, and other countries that have made far-reaching market-opening commitments in the WTO agreement, have broadly similar "road maps" and timescales. The most demanding transition issues concern developing countries (other than those few, such as Chile or the Dominican Republic, which are among the countries committed to a far-reaching market opening by their WTO commitments). Here quite different "road maps" will usually be appropriate.

The issue of transition is not just a matter of timescales, but also of timely creation of policies responding realistically to the new, and still changing, environment:

- timescales should be reasonable in relation to the experience of other countries (mainly industrialised countries) which have previously made comparably major changes in telecoms policy and industry structure; but also fast enough to realistically respond to challenges of the new environment;

- there should be a defined transition plan and a specified end-point, as in the case of Mexico's price rebalancing program;
- transition policy and strategies should include proactive exploitation of the opportunities discussed in Section 3, as well as other measures to mitigate the adverse impact of reduced settlement payments. Such "other measures" might, for example, include extensive restructuring of end-user pricing for both domestic and international telecommunications services.

Achieving all this will require a strengthened regulatory capability. The massive changes now taking place in markets that represent the majority of global traffic make this more urgent than ever.

Even a well-conceived transition will not change the end result but will instead buy time, during which telecom operators, governments and regulators can take steps to correct systemic deficiencies such as uneconomic pricing of domestic telecommunications services, and then adapt to the new environment. The accounting system, at least as it currently operates, cannot be sustained in a market economy in the long term, so what is needed is a national market-oriented plan for economically viable operation and expansion in the absence of high settlement rates. Stretching out the transition time to cushion the shock, if possible, will only be truly beneficial if the time is used effectively to plan and implement structural change. A "soft landing" – at the end of the transition period – may not be very "soft" and the transition period itself may not be very long. An approach which faces the rigors of the new environment realistically from the outset may nevertheless lead to a successful outcome.

6. The Role of the ITU

The ITU's role in addressing these issues, beyond the important continuing work of Study Group 3, should be further developed and defined. On issues like this, where interests conflict, the role of the ITU as an impartial body trusted by a wide range of parties in both

developed and developing countries can contribute significantly to finding solutions beneficial and acceptable to as wide a range of participants as possible.

The forthcoming Policy Forum provides a timely opportunity for it to do so.

At the same time, the inherent limits of the ITU's role needs to be kept in mind. National pricing policy, on which so much depends, is made by the market (with some intervention by national regulators), not by the ITU.

It is not at all clear, however, that comprehensive multilateral solutions are possible or desirable, whether under the aegis of the ITU or another organisation, nor is it clear what the elements of such a solution might be.

There is ample scope for the ITU to play a supporting and catalytic role.

This includes two critical functions: promoting telecom **development** in its Member States, and helping its Members to set up effective **regulatory processes and institutions**.

1. National telecom development

The ITU, in conjunction with the World Bank Group and ***info*Dev**, IFC and others, should seek to facilitate access to investment resources for funding of network development, for example through advisory and consultative activities, and through measures to mitigate investment risks, such as the guarantee arrangements of MIGA.

Three specific cases of suggested initiatives by the ITU particularly deserve further consideration:

a) Working with the other relevant agencies named, the ITU should help concentrate the existing scattered resources, and help to create a "one-stop shop" for funding of network development, and support the establishment of a cadre of "salesmen" to encourage countries to apply for, and to be

aware of, both concessionary and commercial funding available for network development, as well as sources of technical advice and training. The role of innovative forms of commercial financing such as BOT deserve particular consideration. Countries should be encouraged to diversify sources of network finance while maintaining regulatory and policy control over the process of development.

b) In view of the critical role now performed by new players – service providers not traditionally part of the ITU family – the ITU needs to find additional ways to integrate the private sector into its activities.

c) The ITU should, through information and training, encourage entrepreneurial behaviour in developing countries; for example, to take effective advantage of the new modes of operation and adopt other policies which offer potential for revenue enhancement and telecom development.

2. **Regulatory processes and institutions**

An equally vital task for the ITU to perform is to assist countries to set up effective regulatory regimes and systems, and to strengthen the capacity of regulators, in the interests of stimulating telecommunications development. For example, an independent regulator can provide the stability of policy potential investors seek, while at the same time ensuring that national development objectives are met. The ITU, World Bank Group and ***info*Dev**, and other international institutions as appropriate should enhance and coordinate existing technical assistance activities in this area, reinforcing local expertise on regulation through regional seminars, extended in-country missions, and education and training services. A key objective would be to make national governments, regulators and operators aware of the full range of policy options specifically appropriate to the country's individual requirements. One means to do so is to facilitate access to information (laws, licenses, procedures, organisational structures) on regulatory approvals in different countries.

IV. CONCLUSIONS

1. The accounting rate system, as it operates today, reflects a world that is rapidly disappearing. The present breakdown in that system has focused attention on a series of systemic deficiencies that have been present for a long time in the telecom development of many countries. Many of these, such as economically unsustainable pricing of many domestic telecommunications services, or failure to attract sufficient private investment on terms mutually beneficial to both investors and telecom users, needed to be addressed in any case. The crisis of the accounting rate system makes it much more urgent to tackle them today. Attempts to preserve an uneconomic system will be achieved only at great costs to economic development.

2. The dual impact of market forces (*e.g.*, the impact of the new modes of operation and of the 1997 WTO Basic Telecommunication Agreement will increasingly make the accounting rate system (at least as it operates today) obsolete or irrelevant. Yet the outlines of what will replace it are not clear -- it is unlikely to be a single solution but several approaches co-existing at the same time. But it is equally clear that the old approach -- in which countries try to hold on to their high settlement revenues under the accounting rate scheme -- is no longer sustainable.

3. These very dramatic changes are not well understood by policy makers and telecom regulators in many countries; nor are the options available to them to respond successfully in the new environment. A systematic process of analysis, debate and dissemination of ideas and experiences is urgently required.

4. There is an important opportunity for the ITU, particularly through the Second World Telecommunications Policy Forum and the Second World Telecommunications Development Conference, to:

(i) help intensify the sense of urgency among policy makers and regulators in understanding the new environment,

including the implications of the new WTO commitments, and in reforming their regulatory regimes to facilitate successful adaptation to an open market economy;

(ii) encourage "pro-active" responses especially in developing countries, to the opportunities represented by more open markets and the "new modes of operation", in addition to efforts to mitigate the adverse effects of reduced settlement rates.

(iii) organise a program of help to countries without the necessary resources to negotiate changes in international payment arrangements; establish the pricing policies adapted to the new environment; create an effective regulatory regime; attract investment funds for telecom development; and negotiate an appropriate transition period.

Attachment 1
(to Chairman's Report)

SEVENTH REGULATORY COLLOQUIUM
3-5 December 1997

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Attachment 2

ITU REGULATORY COLLOQUIUM No. 7

DISCUSSION OUTLINE

INTRODUCTION

These points for discussion are organised under three headings:

1. Assessing the Forces for Change and the Likely Pace of Change
2. Assessing the Likely Impact of Change
3. Adapting Successfully to the New Environment (especially, strategies for operators and governments in developing countries).

1. Assessing the Forces for Change and the Likely Pace of Change

1.1 How likely is it that there will be general agreement on a transition to a low-settlement-rate regime (as envisaged by the Informal Expert Group, and in the Briefing Report's "Soft Landing Scenario")? What policy choices (if any) would help to make this possible?

1.2 Will marketplace developments such as refile/hubbing, callback/ turnaround and Internet telephony force a choice between the "Soft Landing Scenario" or a disappearance of the traditional settlement system?

1.3 Is the Single Market concept a valid way of visualising the situation which will result from settlement reform, the new EU legislation, and the WTO telecommunications agreement, for countries committed to an open-market policy?

1.4 How quickly will a Single Market environment as envisaged by the EU legislation and (for certain countries) the WTO agreement be realised in practice? Will the traditional settlement arrangements be entirely superseded for traffic between pairs of countries where "Single Market" conditions apply? Or will the traditional arrangements continue to be used for at least some traffic, though at reduced settlement rates?

1.5 In practice, will operators in WTO member countries which have *not* committed to unrestricted market entry find that regulators in single market countries are willing to let them exercise the right to carry traffic to and from "open market" countries via new modes of operation, apparently guaranteed by the MFN provisions of the GATS?

1.6 Are the traditional settlement arrangements objectionable in principle (for example, because they are unfavourable to competitive entry)? Might they be acceptable and sustainable alongside alternative arrangements ("new modes of operations"), even in a Single Market, if settlement rates were lower?

1.7 Is the "Conflict Scenario" a serious possibility, and a serious threat to the previously harmonious management of international relationships in telecommunications? If so, what can be done to avert it?

2. Assessing the Likely Impact of Change

2.1 What is the extent of the adjustment problem for operators which are currently large net recipients of settlements, or where net settlement receipts play a large role in the operator's financial viability? What are the implications?

2.2 To what extent could this adjustment problem realistically be mitigated by transitional assistance of the kinds envisaged by the Informal Expert Group (e.g. World Bank or ITU assistance)?

2.3 To what extent could a shift of emphasis in net-recipient countries towards more rapid expansion of outgoing international traffic, together with the earning of higher margins on this traffic through "new modes of operation" (as envisaged in the Briefing Report's Scenario 3, the "Competitive Response Scenario") mitigate or even outweigh the adverse impact of low settlement rates?

3. Adapting Successfully to the New Environment

3.1 As operators carrying traffic under Single Market Conditions (e.g. within the EU, or across the North Atlantic) adapt to international open competition, how should national regulators adapt? In particular, should they adopt "a priori" restrictions on "new modes of operation" such as leased-line resale (as the FCC has in the US), seeking to prevent anti-competitive abuses? Or should they allow the "new modes of operation" for international traffic without restriction, relying on "reserve powers" (as OFTEL is doing in the UK) enabling them to intervene if anti-competitive abuses emerge?

3.2 What is the likely role of the GATS rules on national regulation and anti-competitive behaviour, and the WTO's Dispute Settlement Understanding, in relation to this issue? For example, could/should a country aggrieved by unilateral restrictive action by another country based on alleged competition-policy concerns rely on the DSU for arbitration of the dispute?

3.3 How should operators outside the countries initially participating in Single Market arrangements adapt to the new environment? If they are based in WTO countries, should they seek to assert the right apparently granted to them by the 1997 WTO agreement and the GATS (under the MFN and National Treatment provisions) to carry traffic to and from the Single Market countries via the "new modes of operation"?

3.4 Is such an initiative, linked to a business strategy emphasising expansion of outgoing traffic, and of new business (incoming or outgoing) billed by these operators, an attractive option? Is it realistic from a institutional/regulatory point of view? What capabilities would developing country operators, in particular. require? Would new alliances among operators and/or governments/regulators be required in order to implement it?

3.5 Should regulators in developing countries adopt the "converse" of the new conditionality just adopted for Section 214 authorisations by the FCC; that is, require removal of restrictions on "new modes of operation" in the correspondent country as a precondition for accelerated reduction of settlement rates?

TRANSFORMING ECONOMIC RELATIONSHIPS IN INTERNATIONAL TELECOMMUNICATIONS

Briefing Report

Michael Tyler

Prepared for

ITU REGULATORY COLLOQUIUM No. 7

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EXECUTIVE SUMMARY

This Briefing Report, prepared in conjunction with the seventh ITU Regulatory Colloquium, concerns the international economic relationships between telecommunications operators which enable them to connect international calls. It focuses on how these relationships are evolving, and on the regulatory policies affecting them. It summarises the existing arrangements concerning accounting rates and settlements; analyses the intense pressures for change; and suggests the kinds of changes that could result.

It also presents the author's personal view of which outcomes should be preferred, and what choices by national policy makers and regulators will make such outcomes probable. This *is strictly* a personal view. Neither it, nor any other part of this report, necessarily represents the views of the Colloquium participants, the ITU, or its constituent members: rather, the report represents a starting point for debate on the issues and policy options.

This summary discusses in turn:

- Two radically different kinds of economic relationships for international telecommunications: a new approach based on open competitive markets, with little distinction between international and domestic operations; and the traditional approach based on the exchange of traffic between operators in different countries.
- The existing situation.
- The pressures for change.
- Possible outcomes, summarised in the form of three scenarios.
- The policy issues that governments and regulators face in this field.

1. ECONOMIC RELATIONSHIPS AND PAYMENTS FOR INTERNATIONAL CALLS: NEW ARRANGEMENTS IN AN OPEN MARKET

The first stage of the transition from monopoly to competition in telecommunications saw a relatively small number of countries move towards a new industry structure for fixed telecommunications based on multiple competing operators. Until the mid-1990s, this had happened in only a few countries: specifically Australia, Chile, Finland, Japan, New Zealand, Sweden, the UK and the US.

Since then, governments in some countries have begun to extend to foreign telecommunications operators the rights of competitive entry[1], and the regulatory protections designed to make competition possible[2], that they previously offered only to national competitors. For example, within most of the 15-country European Union (EU) such a policy applies to competitive entry by operators from any EU country, with effect from January 1st, 1998[3]. Such changes will transform the marketplace for international telecoms services over the next few years.

This has far-reaching implications for the way international calls will be carried, and the associated financial arrangements. Within any group of countries which allow unrestricted market entry by foreign (or foreign-owned) operators and which also grant such operators interconnection rights, there need be little distinction between international calls and those flowing within a single country

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1 Of the governments pursuing a "pro-competitive" telecoms policy, only that of New Zealand has permitted unrestricted foreign participation in its national telecommunications marketplace from the beginning of the competitive marketplace.

2 For example, regulatory rules concerning the rights of competitors to interconnect their networks to the Public Switched Network (PSTN) operated by the old-established incumbent telecoms operator.

3 The specifics of the relevant EU legislation are summarised in Chapter 2.3.

("domestic calls"). In such an environment, regulators can and should treat domestic and foreign operators, in a non-discriminatory way, in the interests of fair and efficient competition. This implies that international calls will be carried via the public network in the destination country under arrangements just like those that apply to domestic long-distance calls. International calls will pay interconnect charges that are the same as those for domestic long-distance calls or at least similar. The interconnect service provided is essentially the same in both cases. For calls within the EU, for example, the difference will disappear as a result of EU legislation. If a domestic long-distance call brought into, say, Glasgow in Scotland by one of the new competitors to BT can be terminated there via BT's local network and interconnect service for approximately 0.6 of a UK penny per minute[4] (approximately one US cent[5] at today's exchange rate), so can a call brought into Glasgow from Paris by a French carrier. This kind of situation is radically unlike the traditional way of handling international traffic and compensating participating telecoms operators, which we describe in Section 2 of this summary.

International calls will no doubt continue to be priced to end-users somewhat higher than domestic long-distance calls, even for calls that both originate and terminate in countries where competition is unrestricted. The difference is likely to be relatively modest however, reflecting only the (relatively small) difference in network costs; remaining differences in interconnect charges, if any; the greater complexity of business processes for international calls; and probably some persistence of higher-than-average profit margins reflecting the perceived value of international calls[6].

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4 BT's local interconnect rate per minute (0.618 pence); the details of the case considered are given in Chapter 3.

5 1.012 US cents.

6 In a perfect market, economic theory predicts that this cannot happen because prices are driven down to costs (including the opportunity cost of capital). However, imperfect competition is a more likely model.

If the reader objects to this picture on the grounds that it is too idealised and hypothetical, he or she is right on the first count, and wrong on the second. Such situations are not hypothetical: they exist today, and more are coming into existence at a rapid rate. It is true that the description is somewhat idealised: in practice, innumerable regulatory and commercial battles will be fought before the details of the new landscape of a fully competitive international market can be seen clearly. There is, however, no reasonable doubt about the general direction of events.

This report uses the term **Single Market** to refer to situations of the kind just described. Specifically, this report uses the phrase to mean a group of two or more countries where telecoms operators based in any country in the group can:

- sell international services in any other country in the group.

- extend their network into any other country in the group and establish network Points of Presence (PoPs), alternatively known as Points of Interconnection (PoIs), in that country.

- interconnect their PoPs to the public switched network of the incumbent telecoms operator in any other country in the group, and terminate international calls (or originate them) on the same interconnect terms and at the same interconnect prices that apply to domestic operators and domestic calls.

Single Markets that fit this definition already exist: so far, however, they consist only of a few pairs of countries. The US and the UK form a rough approximation of a Single Market. US operators can and do operate extensively in the UK, largely in the manner described above. To some degree UK-based operators do the same in the US, though they still face severe regulatory obstacles and constraints. End-user prices ("collection rates") for calls between the two countries have plunged. In 1992, when Single Market conditions did not yet exist on the UK/US route, BT's "headline" price (before allowing for discount plans) for UK-to-US calls in the

peak period was 51 pence (84 cents) per minute. By 1995 this price had fallen to around 42 pence (69 cents) per minute[7]. The watershed year when the US-UK became a Single Market was 1996, with the abolition of the UK's restrictions on leased line resale. By late 1997, BT's headline price had fallen to 24 pence (38 cents) per minute; several operators were connecting daytime calls from the UK to the United States at prices in the range 8-15 pence (about 13-25 cents) per minute)[8].

Other existing Single Markets comprising pairs of countries include Canada-UK, Sweden-UK, New Zealand-US, and Canada-US[9]. Each of these pairs is characterised by relatively low end-user prices, high and fast-growing traffic volumes, and diverse and fast-changing industry structures and arrangements for handling international traffic.

The domain of Single Markets is about to expand dramatically. It will not be limited to a few pairs of countries but will include large multilateral groups of countries as well. With effect from January 1st, 1998, most of the 15-country European Union (EU)[10] together with the 3 countries associated with the EU through the European Economic Area (EEA)[11], plus Switzerland[12], will form a

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7 The UK-to-US rate given for 1992 was provided by BT in response to a telephone inquiry.

8 Swiftcall, for example, offers calls from anywhere in the UK to anywhere in the US at 8 pence per minute during all hours Monday to Friday.

9 Canada has retained some foreign-ownership restrictions, but in practice this does not substantially impede the kind of open competition we describe here.

10 The deadline has been extended for Ireland, Greece, Portugal and Spain: see detailed discussion in Chapter 2.

11 Norway, Iceland and Liechtenstein.

12 Switzerland is not a member of the EEA or the EU, but has voluntarily chosen to align its telecommunications policies with those of the EEA and EU member countries.

Single Market for competitive telecommunications. Telecoms operators from any EU country will be entitled to build network plant and conduct operations anywhere within this Single Market. They will be able to terminate international calls via the incumbent operators' networks, paying only the same interconnect charge that is payable for terminating domestic long-distance calls. Of course, in practice there will no doubt be the usual delays and difficulties in implementing the new rules[13], but nevertheless the eventual outcome is clear.

An even more extensive Single Market is beginning to emerge. Twenty out of a total of sixty-nine countries[14] participating in the World Trade Organisation (WTO) Basic Telecommunications Agreement of February 15th, 1997 (including nine of the 15 EU countries) agreed to terms which, when fully implemented, will effectively make these countries into a "Single Market" as well[15]. As an informal designation, this report calls these twenty countries the "Group A" countries. A further twelve countries have made commitments which, while somewhat less extensive, still allow considerable scope for trans-national competition. We call these countries "Group B". The two groups are shown together with the criteria defining them in Exhibit ES.1.

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13 The European Commission is, for example, currently pursuing legal action against certain national governments in the EU for delays in implementing key elements of the EU Single Market legislation.

14 We arrived at the number of 20 countries by counting only those countries which have: (a) made commitments in their WTO Schedules to open their national market for basic fixed telecommunications; (b) incorporated in their commitments all or essentially all of the provisions of the Reference Paper on regulatory affairs, which *inter alia* allow the new entrants to interconnect to the incumbent operator's network on interconnect terms which are cost-based, and the same as those provided to domestic competitors; and (c) committed to abolish all foreign ownership restrictions.

15 The specifics of the agreement are described in detail in Chapter 2 of this report.

Exhibit ES.1

THE SINGLE MARKET EMERGING FROM THE 1997 WTO BASIC TELECOMMUNICATIONS AGREEMENT

GROUP A	GROUP B
Commitments include: • open entry for foreign competitors in basic fixed services, domestic and international, from 1.1.98 • unrestricted right of foreign operators to establish networks • non-discriminatory interconnection at cost-based prices	Commitments include: • open entry to new competitors with foreign participation • ...but with short-term delay after 1.1.98 (up to 3 years) • ...or subject to some continuing restrictions on foreign ownership or number of fixed-service operators
Australia* Chile Dominican Republic El Salvador EU: Austria Belgium Denmark Finland Germany Italy Netherlands Sweden UK Guatemala Iceland Japan* New Zealand* Norway Switzerland USA	Brazil Canada EU: France Greece Ireland Luxembourg Portugal Spain Hong Kong Mexico South Korea Singapore

* *Some foreign ownership restrictions on incumbent operators only*

The agreement was intended to come into force on January 1st, 1998[16]; but this has been delayed because some of the participating countries had not completed ratification or other national procedures required for confirmation of the agreement by that date[17]. The agreement is nevertheless likely to come into force during the first half of 1998.

In this wide Single Market, the Basic Telecommunications Agreement requires that telecoms operators based in any of the twenty countries be permitted to operate on the same basis as a domestic operator in any other country among the twenty. Moreover, according to the agreement (following the Most Favoured Nation principle: MFN), the same rights must also be granted to operators from *any* WTO country[18]. While there are signs that full implementation of this agreement will not be easy, fast or uncontentious[19], there can be no doubt about the strength or scope of the move towards a Single Market and little doubt that a Single Market will in fact be implemented among most, if not all, of the twenty Group A countries (and possibly among even more WTO countries) within the next few years[20].

Of course, even after the EU Single Market for telecommunications is in place, and the WTO telecommunications agreement is more or less fully implemented, the majority of countries in the world will not yet be members of a Single Market pair or a larger Single Market grouping. The overwhelming majority of "relations" between pairs of countries for the carriage of international traffic

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16 Some national commitments have delayed entry-into-force dates.

17 As this report went to press in January 1998, about 20 of the 69 participating governments had missed the 1.1.98 deadline in this way.

18 There are now 132 WTO members.

19 Some specific difficulties that have already arisen in the US are discussed in Section 4 of this Summary and Chapter 2 of the main report.

20 In fact, even more countries (even including some that are not yet WTO members) may be involved: the matter is discussed more fully in Chapter 2.

still will not fall within a Single Market. Nevertheless, most of the heavy-traffic routes *will* be between pairs of countries that fall within a Single Market. The great majority of the world's international telecommunications traffic will therefore flow within one or other of the Single Market groupings. The Single Market type of environment which will consequently shape the predominant kinds of economic relationships for the carriage of international traffic.

Unrestricted competitive carriage of international traffic in a Single Market is very different from the environment in which the traditional arrangements for the carriage of international traffic were developed. The differences are summed up in Exhibit ES.2. Essentially, the traditional relationships for handling traffic from one country to another were established between pairs of operators, one in each country. Usually, these operators were monopolies; generally they were authorised only to operate in their own "home" country. The specific financial arrangements between them, which this report refers to as the "traditional arrangements" (and describes in the next section of the Summary) were well adapted to such a situation, which economists call a bilateral monopoly.

Once the monopoly conditions that gave rise to the traditional arrangements are wholly or partly replaced by a competitive market, challenges to the traditional arrangements, and alternatives to them, naturally emerge. A Single Market opens up many new alternatives to telecoms operators in terms of how they carry their international traffic; what role other operators play in the process; and how (and how much) these other operators are paid.

Exhibit ES.2

COMPARISON OF "SINGLE MARKET" ENVIRONMENT WITH TRADITIONAL ENVIRONMENT FOR HANDLING OF INTERNATIONAL TRAFFIC

	SINGLE MARKET FULLY-COMPETITIVE ENVIRONMENT[1,2]	TRADITIONAL ENVIRONMENT
Can operator from "Country A" operate (carry traffic, own facilities) in Country B?	Yes	No[3]
Do regulatory rules grant operator from Country A automatic interconnection rights in Country B?	Yes	No[4]
Are per-minute rates for terminating domestic calls via the domestic network (interconnect charges) different from the corresponding charges for international calls, for comparable use of the domestic network?	No (may be some exceptions)[5]	Yes
How are payments from A to B for termination of international calls in Country B determined?	By market competition, negotiation, or regulatory determination of interconnect charges covering both domestic and international calls[6]	By bilateral negotiation between monopoly carriers in Country A and Country B

1 The Single Market concept is explained in Section 1 of the Executive Summary.

2 Entries assume legislation, regulation and in practice all conform to Single Market requirements as defined in this report. Commitments of "Group A" countries in the WTO Basic Telecommunications Agreement conform to these requirements, as does the EU telecoms legislation (except temporarily in EU countries granted an extension of the 1.1.98 deadline).

3 Except for "Country Direct", card calling services and callback.

4 Other than traditional settlement arrangements. Under these arrangements, correspondents have the right to rely on an existing settlement rate previously agreed, if operators fail to agree to a new one. For US operators, however, this may be over-ridden by the FCC's 1997 decisions in the "Benchmark" Proceeding.

5 Operator(s) may be able to charge a premium interconnect rate for international calls, making a higher contribution to joint and common costs and USO costs than the domestic interconnect rate, provided the regulator approves that: this would not violate Single Market rules if (a) the rate still meets criteria for a "cost-orientation" and (b) both domestic and foreign operators pay the same rate. Enforcing (b) for the incumbent operator is, however, impossible unless the regulator also imposes accounting separation, as in the UK.

6 Interconnect rates are likely to be regulated where (as is usually the case) local bottleneck monopolies remain.

We refer to these alternatives as "new modes of operation", and describe them below in Section 3 of this Summary[21]. In brief, they are:

- Resale
- Refile, hubbing or re-origination
- International alliances of telecommunications operators
- The extension of foreign operators' networks into the destination countries for major international traffic flows, to Points of Presence (PoPs), alternatively referred to as Points of Interconnection (PoIs) in those countries, and in some cases even to customers' premises in those countries. Such arrangements are sometimes called "facilities-based entry" or "self-termination".
- Internet telephony

Contrary to claims often made, the "new modes of operation" will not *necessarily* entirely replace arrangements of the traditional kind. These may remain in use as one as of the widening range of *alternative* methods available to operators. Their simplicity means that, in this author's opinion, they are likely to remain in use for a substantial amount of international traffic, even between "Single Market" countries.

The level of *charges* (settlement rates) paid by one operator to another for carriage of international traffic within the traditional arrangements is, however, a different matter. For the traditional arrangements to remain in use alongside the "new modes of operation", settlement rates will have to fall to levels that make the traditional arrangements competitive (from the point of view of net payers of settlement payments) with the alternatives offered by the "new modes of operation". This means lowering them to the point where paying settlements is comparable to the cost of terminating a call:

- via leased-line resale, or...

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21 And in detail in Chapter 14.

- using the foreign operator's trans-national network to a foreign PoP, plus interconnect charges between the PoP and the customer, or...
- via the foreign operator's network all the way to the customer's premises in the destination country, if the foreign operator has a local network in the distant city (as WorldCom/MFS has in several European cities).

For major operators on major routes between Single Market countries, self-termination may well become the predominant mode of operation.

2. THE EXISTING SITUATION

Most international traffic is still carried today under what this report calls the "traditional arrangements". These are based on international bilateral relationships (referred to as **relations**) between pairs of nationally-based telecommunications operators, often referred to as "correspondents". Part II of this report describes the details of these arrangements, many of which are based on Recommendations of the ITU's telecommunications standardisation sector, known as ITU-T. The essential features are simple:

- If the number of minutes of traffic flowing from Country "A" to Country "B" exceeds the flow of traffic in the reverse direction, the operator in Country A makes a net payment ("settlement") to the operator in Country B based on the *net* flow of traffic from A to B (that is, the volume of traffic from A to B, minus the volume from B to A).
- The size of the net payment is calculated from the net flow of traffic (measured in minutes) multiplied by an amount of money per minute agreed upon between the two operators[22]. This

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22 For accounting and financial-reporting purposes, it is common for telecoms operators to show out-payments and receipts under the settlement systems on a *gross* basis, although no money actually flows between operators except on the net basis. The effect is to keep reported revenues higher than would otherwise be the case.

amount is based on a negotiated price called the **accounting rate**. In most cases, the same accounting rate generally applies in both directions: A to B, and B to A[23]. The amount paid per minute from one operator to its "correspondent" is usually half the accounting rate. It is called the **settlement rate**. Modified arrangements apply when the traffic flows from A to B indirectly via a third country (the "transit" country). The accounting rate and settlement rate are intended, according to ITU Recommendations, to reflect the cost of carrying international calls, although how close they are to really doing so is one of the key issues in the current controversy[24]. They have no necessary relationship to the prices charged to end-users for international calls (which are referred to in this context as **collection charges or collection rates**).

- Where there are multiple, competing operators at one end of the "relation", or at both ends, operating agreements between pairs of correspondents may stipulate **proportionate return**, though this is not a feature of the ITU Recommendations. Proportionate return means that if an operator in Country A originates, say, 35% of total traffic from Country A to the

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23 Since costs may be different in different countries, a system with settlements more closely aligned with costs (as called for by ITU-T Recommendation D140) would tend to be asymmetrical, that is, it would be based on accounting rates that are not the same in each direction. An asymmetrical variant of the traditional system has already been implemented in the Europe/Mediterranean region in accordance with ITU-T Recommendation D300R.

24 While the ITU can only advise member states and telecoms operators (ITU "sector members"), ITU Study Groups and the Informal Expert Group (IEG) appointed by the Secretary General have recommended specific and substantial reductions in settlement rates, as described in Chapter 6. The ITU Secretariat has carried out extensive studies using cost data from members, indicating (as reported by the IEG) that cost-based settlement rates would imply substantial reductions in these rates, usually to below 25 cents US cents per minute (ITU, "Report of the Informal Expert Group on International Telecommunication Settlements", Geneva, April 1997).

operator in Country B, the operator in Country B must send 35% of its return traffic flowing in the other direction back to the same operator in Country A. Regulators in Country A may often insist on such an arrangement, especially if there is a telecommunications monopoly in Country B. In particular, a requirement for proportionate return is a major feature of the International Settlement Policy (ISP) of the Federal Communications Commission in the United States. On the other hand, regulatory authorities in several other countries with competitive telecoms markets (DTI and Oftel in the UK, for example) do *not* require proportionate return. Regulators that do require this typically justify this on the grounds that the proportionate return requirement prevents the operator in Country B from obtaining excessive bargaining power through allocating return traffic among Country A's several competing operators. However, proportionate return tends to favour established operators and raises barriers to entry, and therefore tends to impede the transition to a fully competitive market for international calls.

Those aspects of the "traditional arrangements" that are codified in ITU-T Recommendations have been very influential. While the Recommendations are not legally binding, their main structural features were developed by consensus in the telecommunications industry, and the main features are widely followed, in practice. The key points are reviewed in Chapter 6 of this report. In addition to what we call the "traditional arrangements", the Recommendations do also allow for a variety of alternative arrangements such as "Sender Keeps All" where no settlement payments are made.

3. FOR AND AGAINST THE TRADITIONAL ARRANGEMENTS

Merits of the Traditional Arrangements

The "traditional arrangements" have some virtues. They are simple to administer: no minor matter when there are over 200 countries and territories participating in international telecommunications and

thus, in principle, up to 20,000 distinct traffic flows between them that need to be administered[25]. The traditional arrangements have produced a substantial, continuing, and growing international transfer of resources between telecommunications operators. These transfers have helped telecoms operators in some developing countries to expand and upgrade their networks and make progress towards universal service goals. Nevertheless, many critics object to the traditional arrangements on the grounds that they conflict with competitive market principles. Critics often argue that there are alternative and better ways of generating funds to pay for rapid progress towards goals of network expansion and universal service. They also often object that in some developing or newly industrialising countries the flows of hard currency from international settlements are retained by national Finance Ministries and not necessarily used for such investments in the telecoms infrastructure.

The importance of this issue to developing countries (especially those which are relatively small, or have relatively "open", export-oriented economies) should not be under-estimated. In the case of Jamaica, where settlement payments have in most years flowed directly to the telecommunications operator[26], 46% of telecoms revenue in 1995 was attributable to the total of net settlements received for international traffic[27]. The average for the small island countries of the Caribbean basin is between 30% and 50%. On the other hand, in India total funds received from net settlements though substantial (estimated at US$254 million in

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25 200 squared, divided by two. A number of ways have been found to avoid such an overwhelming numerical proliferation of "relations": for example, by using indirect arrangements for small traffic flows, and by leaving very small traffic or very balanced flows out of the accounting/settlement machinery entirely.

26 In some years, settlement funds have been directed to the Treasury, to cover emergency requirements.

27 Source: data supplied by operator.

1994)[28], accounted for only 9% of reported domestic and international telecommunications revenue in 1994[29], reflecting the large scale of India's domestic telecoms market[30].

The impact on developing countries of changes in the international settlement system should be of concern to governments and telecommunications operators in industrialised countries, since (as is often the case) the interests of developed and developing countries are more closely aligned than is generally believed. Notwithstanding their dissatisfaction with today's level of settlement rates, telecoms operators in advanced industrial countries (and their customers) are beneficiaries of the expansion and upgrading of public networks in developing countries that is to some degree paid for by settlement payments. Telecoms operators in industrialised and developing countries alike almost invariably find that international calls represent one of their most profitable revenue streams.

The traffic that provides the basis of this profitable business is growing rapidly: annual growth of the top five international routes is on the order of 15%, with some routes such as US/Mexico growing by over 20% per year. This does not necessarily mean that revenues are also growing rapidly in every case, because prices are generally falling on routes where open competition prevails; they are falling very rapidly, as our UK-US example illustrates.

Future growth prospects are, however, constrained by the low telephone penetration in developing countries and by congestion and other service problems. Congestion results in numerous failed call attempts that incur costs for the telecoms operator trying to originate the call, as well as the operator in the developing country, and generate no revenues. It is very much in the interests of telecoms operators and users (and thus the whole national

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28 Source: ITU/Telegeography, "Direction of Traffic", 1996, <http://www.itu.int/ti>.

29 Calculated from "Direction of Traffic".

30 For the international operator VSNL, considered in isolation, the percentage is much higher, of course.

economy) in advanced industrial countries that operators in developing countries should continue to be able to finance the expansion programmes which are reducing these constraints on worldwide growth in traffic and revenues.

Of course, there are many ways in which the capital investments required by such programmes can be financed. In the case of operators which are privately owned or being privatised, these include foreign direct equity investment; local equity investment; project finance (for example, Build-Operate-Transfer schemes or leveraged leases); and borrowing. But the feasibility of all of these in turn depends on the operator's profitability, which in many developing countries is closely linked to the flow of net settlement payments.

Later in this summary (in Section 6 under the heading "Handling the Transition: Issues of Policy and Governance") we discuss how public policy makers and regulators in developing and developed countries can assess the significance of settlement flows in relation to the need to finance such capital programmes; judge the likely impact of settlement reform and other, market-driven, changes in international economic relationships in telecommunications; and select the course of action that best serves the national interests they are mandated to safeguard.

Shortcomings of the Traditional Arrangements

The shortcomings of the traditional arrangements have become more apparent with the passage of time, as the telecommunications marketplace has become more competitive and more open to entry and to new modes of operation. In particular:

- The structure of these arrangements tends to limit the degree of effective competition on a route. Using the same accounting rate and settlement rate for all operators on a route (sometimes called "parallel accounting") prevents operators competing on price to attract terminating traffic. Proportionate return requirements obviously also have this effect. Proportionate return

puts additional traffic and revenue in the hands of established operators with large outgoing traffic flows, and disadvantages new competitive entrants which might otherwise have been able to bid to carry the terminating traffic. Thus the traditional structure is not very consistent with an overall policy favouring competition.

- Since settlement rates are intended (according to ITU-T Recommendation D140) to be cost-based[31], and since telecoms operators' costs per minute of traffic are much higher in some countries (especially developing countries) than others, using the same accounting rate for both directions of traffic seems inappropriate. An "asymmetric" system with different per-minute rates of payment between operators in the two directions would correspond more closely to the economic realities.
- Today's settlement rates, for calls to a particular country can vary by a ratio of 5:1 or more (sometimes much more) depending on what country the traffic came from. This seems illogical. Settlement rates are intended to be cost based, and yet the charge for terminating an international call in a particular country is largely independent of what other country the call is coming from. The structure of settlement rates should reflect this[32]. This logic has given rise to a proposal for uniform "termination charges" for each country, regardless of the country of origin of the traffic: this approach was, for example, advocated by the Australian delegation to the recent WTO telecommunications negotiations. As opportunities grow for operators to re-route traffic around the world in search of the cheapest alternative routing, some such levelling of settlement rates is inescapable. Technological change and relaxation of

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31 Such a system already applies in the Europe/Mediterranean (TEUREM) region, in accordance with ITU-T Recommendation D300R.

32 Strictly, this is the only way for direct routes between the countries concerned. Where transit arrangements are used, the costs incurred by the transit operator, and the transit settlements may vary for the same destination country, depending on the country where the traffic originated.

regulatory barriers is increasing such re-routing opportunities very rapidly. If levelling of settlement rates does not occur, the routes where higher settlement rates apply will simply be bypassed, a phenomenon akin to "arbitrage" in financial markets. Market forces will ensure an outcome not far from the Australian proposal, though not necessarily in the specific form that was proposed.

- While accounting rates and hence settlements have fallen significantly (for example, settlement rates for traffic to and from the US fell from a weighted average of 51.5 cents per minute in 1992 to 36.5 cents in 1996 and 35 cents in August 1997[33]), it is widely accepted that this fall was insufficient to bring them into line with the true costs of terminating international calls[34], or to reflect the large cost reductions arising from technological change and economies of scale. The Informal Group of Experts convened by the ITU's Secretary General to advise on the reform of the settlement system noted in its report of April 1997 that studies carried out by the ITU Secretariat suggested that "in all but a few cases, settlement rates should be priced below 25 cents per minute"[35].
- The structure of the traditional settlement arrangements, combined with the high level of settlement rates, creates economically inefficient incentives for telecoms operators. This structure:
  - limits (though by no means eliminates) the incentive for operators that are net payers of settlements to reduce end-user prices (collection charges) since the settlement rate

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33 FCC estimates.

34 There is great difficulty in deciding what indicator is most appropriate to measure costs (as discussed in Chapter 10); but this statement is likely to prove true on most international routes, for almost any reasonable cost-analysis concept.

35 ITU "Report of the Informal Expert Group on International Telecommunications Settlements", Geneva, April 1997.
<http://www.itu.int/intset/expert/issuesp2.html>

is an uncontrollable cost representing a substantial percentage of the collection charge[36].

  - restricts the incentive for operators that are net recipients of settlements to reduce *their* collection rates and generally promote the growth of outgoing calls through marketing and service improvements (since doing so would increase their outgoing traffic relative to incoming traffic, and thus reduce their net settlement receipts).

- Consequently, the traditional settlement arrangements impede the growth of international traffic, though traffic growth has nevertheless been very rapid.

The incentive structure inherent in the traditional system, to some degree inhibiting the growth of outgoing international traffic from operators that are net recipients of settlements, is one (but only one) cause of the large and fast-growing flows of net settlement payments paid by operators in some industrialised countries.

The United States and Germany have by far the largest net out-payments of settlements, as the "top 10" summary in Exhibit ES.3 shows. In 1995 net payments from the US were US$4.9 billion. Estimated net payments from Germany in 1994 (the most recent year for which extensive data are available for countries other than the US) were US$0.8 billion; no other net payer country paid more than US$160 million in that year. While settlement payments contribute to the ability of telecoms operators in developing countries to finance their network expansion, the operators paying the settlement payments generally argue that these payments are far larger than what can be economically justified. This is, of course, at the heart of the current controversies about the international payments system. But are the large out-payments for settlements (which are estimated as US$5.6 billion

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36 The higher the settlement rate, the larger the percentage reduction of profit caused by a 1% reduction in the collection rate. (This reduction of profit is partially offset by the fact that such a price cut generates, through proportionate return, additional return traffic for the operator that has cut its price.)

in 1996 in the case of the United States)[37] demonstrably inappropriate and harmful, based on some sufficiently objective criteria?

It is important to remember that the size of the settlement payments depends on the size of the traffic imbalance as well as the settlement rate. If outgoing and incoming traffic were roughly in balance, the level of the settlement rate would be much less of an issue. The traffic imbalances partly exist for fundamental reasons beyond the control of telecoms operators and regulators: for example, high per capita incomes in advanced industrialised countries; habits of telephone usage in those countries; and the existence of large overseas emigrant communities.

The size and growth of traffic imbalances also reflects other factors that are, to a degree, controllable. Traffic imbalances have grown because competition has reduced collection rates in countries with a competitive telecoms market, despite the constraining effect of settlement payments on reductions in end-user prices. They have also grown because of the phenomenon known as "**turnaround**". "Country Direct" services such as BT's "UK Direct" or AT&T "USA Direct" represent one important form of turnaround. If a caller in Country B calls Country A by means of "country direct" services using a telephone credit card/calling card, the call is billed to the customer in Country A, not Country B. The call is counted for settlement purposes as a call from A to B, not from B to A[38]. The same happens for a call from Country B to Country A using a callback operator in Country A. The use of "country direct" service, calling card services or callback in effect increases the measured traffic imbalance that is the starting point for calculating the settlement payments.

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37 Preliminary estimate by Industry Analysis Division, FCC Common Carrier Bureau as at January 1998.

38 Since the operator in Country A has received the caller's payment, and is required by the settlement arrangements to settle with the operator in Country B.

Exhibit ES.3

TOP TEN PAYERS AND RECIPIENTS OF NET SETTLEMENTS FOR 1994

COUNTRY	TOTAL OUT-PAYMENTS (IN MILLIONS) US$
US	4289*
Germany	800**
UK	158**
Japan	151**
UAE	148**
Saudi Arabia	135**
Switzerland	135**
Australia	100***
Hong Kong (SAR)	78**

COUNTRY	TOTAL IN-PAYMENTS (IN MILLIONS) US$
China	480
Mexico	444
India	254
Philippines	235
Russia	185
Turkey	173
Israel	162
Portugal	148
Morocco	145
Colombia	136

Source: updated from ITU/Telegeography "Direction of Traffic, 1996" available from ITU website at <http://www.itu.int/ti>

* FCC "Trends in Telephone Service", March 1997

** Estimated

*** ITU estimate, private communication

The overall effect of the different forms of turnaround, taken together, can be sizeable. In the United States, the ratio of outgoing to incoming international minutes rose from 1.84:1 in 1990 to 2.14:1 in 1995[39]. In Hong Kong, which has been on the opposite end of this process, the ratio of calls incoming *from* the US (where a great deal of turnaround activity is based) to calls outgoing *to* the US was 1.2:1 in 1992. By 1995, this had increased to 3.1, and by the end of 1996 it was 7:1[40]. Since the period 1992-96 is exactly the period during which callback activity, and turnaround in general, burgeoned on this route, it is reasonable to assume that the very large growth in the traffic imbalance is mainly due to callback services and other forms of turnaround. For callback operators, the incentive and opportunity to create this situation arose from differences in end-user prices ("collection rates") between the two locations. For conventional telecoms operators, the incentive to pursue various forms of turnaround was reinforced by the proportionate return rule which, at the insistence of the FCC, applies to the US-Hong Kong route.

Such effects, with turnaround leading to increased traffic imbalances, are particularly pronounced for traffic between developed and developing countries. It would plainly be wrong to assume that the traffic imbalances that result in the large and controversial outflows of settlement payments from some industrialised countries are caused solely by the structural defects and inappropriate incentives built into the traditional settlement system. Much of the imbalance is the result of normal competitive market activity, including the creation of service innovations like "country direct" services; the scale of turnaround activity is of course motivated to a sizeable extent by customers' desire to avoid the high end-user prices ("collection rates") in monopoly countries.

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39 Derived by AT&T from FCC 43.61 International Traffic Reports and FCC Trends Report – Canada 1990 (AT&T Supplemental Comments in CC Docket No. 90-337, Phase II, February 26th, 1996).

40 Pun-Lee Lam, "Erosion of Monopoly Power by Callback: Lessons from Hong Kong", Telecommunications Policy 12-8, October 1997, pp. 693-695.

The mere fact that innovations such as those just described increase traffic imbalances does not mean they are undesirable: in fact, traffic imbalances and resulting flows of settlement payments would not be (or certainly *should not* be) an issue if the level of the settlement rate represented a fair market price for the service of completing one minute of international calling.

A Verdict on the Traditional Arrangements and the Case for Change

How should the merits and demerits of the traditional settlement system, be judged overall? Any such overall "verdict" must answer four questions:

- Are the economically inefficient incentives built into the traditional arrangements sufficiently harmful to justify making it a goal of public policy to abolish those arrangements?
- Quite apart from the public interest point of view taken by governments, legislators and regulators, is the structure of the traditional arrangements in any case sustainable in the new, increasingly competitive environment?
- Is the *level* of settlement rates in the traditional system, as distinct from the structure of the system, acceptable from a public policy point of view?
- Is the level of settlement rates sustainable in the increasingly competitive environment?

This section discusses these questions in turn, giving the author's personal view.

Question 1: Inappropriate Incentives: Do they Warrant Abolition of the Traditional Arrangements?

This report's answer is "no". The adverse incentives involved in the traditional arrangements, such as discouraging the growth of outgoing traffic from countries that are net recipients of settlement payments, are only economically significant if the settlement rates

are above cost-justified levels. But while settlement rates are high, governments and regulators even in countries that are net recipients of settlement payments should be concerned about such disincentives. The way the traditional system constrains the growth of outgoing traffic is bad for the national economies of these countries. Enterprises in these countries should enjoy the same opportunities to use the public telecommunications system to explore and pursue their economic opportunities in other countries. If not, the balance of international competitive advantage is tilted *against* telecommunications users in the countries that are net recipients of settlements (usually developing countries), and not the other way.

The solution is to reduce the settlement rates and not necessarily to abandon the entire *structure* of the traditional arrangements.

Should governments and regulation also allow alternative "modes of operation" such as leased line (private line) resale or foreign-operator PoPs ("self-termination") to grow up alongside the traditional arrangements, or perhaps even direct traffic away from the traditional arrangements[41]? Governments of countries that are net recipients of settlements may be reluctant to allow this, for fear of reducing the settlement payments flowing in. Ironically, the Federal Communications Commission (FCC) in the United States has also shown itself reluctant to allow this, except where the market in the correspondent country is fully competitive and open to competitive entry by operators from the US: in other words, where what we call a Single Market operates.

Governments or regulators in other net-payer countries, however, have not taken this view: in New Zealand, Sweden and the UK use of the "new modes of operation" such as leased-line resale or foreign-operator PoPs is generally permitted regardless of the

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41 Allowing leased-line resale (also called private-line resale or International Simple Resale) is only effective if operators are allowed to interconnect their leased lines to the PSTN at both ends and pay for their PSTN use at either domestic end-user prices or domestic interconnect rates.

correspondent country involved. This policy reflects the view, shared by the author of this report, that there is more to gain from the benefits of increased competition (including the very effective pressure for reduced settlement rates that will arise when alternative modes of operation that do not involve paying settlement rates become available) than there is to lose from the rather theoretical risk that a monopoly correspondent in another country will abuse this liberalisation to gain additional bargaining power and profits[42].

Question 2: Is the Structure of the Traditional Arrangements Sustainable?

Regardless of what governments or regulators decide, is the present structure of the traditional arrangements sustainable? This report's answer is "yes, but only with significant modification". The reasons are:

- A commercial analysis comparing a traditional type of settlement arrangement based on various alternatives shows that, in a wide variety of situations, the traditional arrangement can continue to be an attractive "mode of operation" for **both** the operators making up a "relation", provided that the cost per minute to the operator that is the net payer is comparable to the equivalent cost under the alternative "new modes of operation" such as leased-line resale or foreign-operator PoPs that have become, or are becoming, available. The degree of sustainability depends on the level of settlement rates, not on the structure itself.
- Nevertheless, certain modifications are essential for sustainability:
  - differences in settlement rates in the same country for different correspondent countries will have to be greatly reduced or even eliminated; otherwise refile and arbitrage will simply divert all the traffic to where the settlement rate is

42 We review current FCC policy on this subject in Section 4 of this Summary, and discuss the issues involved more fully in Chapter 13 of the main report.

lowest. Anomalies give rise to large arbitrage opportunities for operators other than the traditional operators to capture part of the value of the traffic by re-routing it.

– as a fully competitive environment approaches, it may become impossible to maintain a symmetrical system where the same accounting rate applies to both directions of traffic. The settlement system must provide for lower charges for terminating calls in low-cost countries (this is already provided for within the traditional arrangements in the case of the Europe/Mediterranean region, under the terms of ITU-T Recommendation D300R).

Overall, reform of the *structure* of the settlement system is a quite distinct question from the *level of the settlement rates*. If the rates come down sufficiently, there is no logical reason why the broad structure of the existing settlement system (that is, correspondent relations in which operators exchange traffic and a net settlement is paid) should not remain in being, provided that necessary structural changes also take place, such as the reduction or elimination of unequal settlement rates to the same country, and the use of asymmetric settlement rates where the costs of termination (or origination) of calls are substantially different in the two countries concerned. In this scenario, a modified form of the traditional arrangement continues in use as one mode of operation used for international traffic, coexisting with the various "new modes of operation".

All the complexities of the issue therefore reduce ultimately to three simple questions: when is a settlement rate "too high", and according to what criteria? Who decides that? And how?

Question 3: Is the Level of Settlement Rates Acceptable?

The relatively slow rate of reduction of settlement rates, contrasted with the rapid rate of reduction in network costs for international links, has led to a widespread "common sense" view that settlement

rates are now too high. Despite the fact that the cost of international transmission links represents only a small part of the total cost of an international call[43,44], and therefore the strict logic of this comparison is flawed, most independent specialists in this field (including this author) would still support the "common sense" conclusion.

But how, more objectively and analytically, should levels of settlement rates be judged? This is by no means obvious: it is not at all self-evidently valid, for example, to use the text-book microeconomic criteria often employed to argue that settlement rates should equal some measures of a correspondent operator's Long Run Incremental Costs, as the FCC did in the Notice of Proposed Rulemaking (NPRM) for its International Settlement Rates Proceeding in December 1996[45].

It is not realistic to expect a high degree of consensus about this. Not only are there obvious divergences of view between governments, regulators and operators in different countries (especially as between net-payer countries and net recipient countries). Even in theory, it is problematic to ascertain exactly what the "correct" level is. There are good reasons (discussed in detail in Chapter 8 of the main report) to view sceptically even the *principle* of prescriptions such as the FCC's proposal for settlement rates based on Total Service Long Run Incremental Cost (TSLRIC), derived from microeconomic theory, let alone the feasibility of applying such prescriptions in practice.

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43 For example, for the Brazil-Argentina route, international transmission represented only 21% of the total Tariffed Component Price according to the FCC's "benchmark" methodology (Source: Report and Order "In the Matter of International Settlement Rates" in IB Docket No. 96-261, released August 18th, 1997; Appendix D).

44 Except for certain countries (notably landlocked developing countries) for which transit costs are very high.

45 NPRM in IB Docket No. 96-261, December 19th, 1996.

This author's conclusions are as follows:

- Even from the point of view of economic theory, a pure incremental cost approach (as in the FCC's assertion in the NPRM that reducing settlement rates to "an incremental cost level... would maximise consumer welfare") is not warranted. Indeed, the FCC itself partially recognised this in its very next sentence, where it added that: "In addition, we believe that it may be appropriate for international services to provide a reasonable contribution to the common costs of foreign carriers"[46].
- In the author's view, it not only may be, but *is*, appropriate for settlement rates to provide a contribution to the joint and common costs incurred by an operator to enable its whole network and business to function. Domestic interconnect charges already do just this, in the United States and elsewhere.
- Similarly, since governments and regulators typically impose Universal Service Obligations (USOs) on operators, it is equally appropriate that the international settlement rate should include a contribution to the cost of meeting these obligations: again, this is done in the United States and many other countries in setting domestic interconnect charges. (It is well known, though, that USOs can be an excuse for the costs of monopoly inefficiencies, and that in many areas rural services, operated efficiently, can be profitable and therefore incur no USO costs: any USO contribution should therefore be set at "reasonable", economically justified levels. Agreeing what these are will obviously not be easy, but will be necessary).
- There is no reason why the contribution to joint and common costs and USO costs from international settlements, per minute or as a percentage of the total payment, should be the same as it is for domestic calls. For routes entirely within a Single Market (as defined earlier) however, the per-minute contribution cannot be higher for international calls than it is for domestic *long-distance* calls, since both types of calls can use the same interconnect arrangements.

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46 FCC, NPRM in IB Docket No. 96-261, op. cit.

The best that can be hoped for in practice is a series of pragmatic negotiations in which the parties involved eventually find themselves able to agree on:

(a) broadly what elements can legitimately be included in a settlement rate;

(b) what range of numerical values can be arrived at for these elements, under a wide variety of different but logically defensible cost-related doctrines;

(c) in any case, what level of settlement rates is *sustainable* in practice, given the reality that the traditional settlement system is increasingly subject to competitive pressures. If the settlement rate is "too high" in that sense, traffic will increasingly just bypass it using one of the many "new modes of operation" discussed in the next section of this summary[47]. Most net recipients of settlements will want to retain the existing system, sufficiently reformed to keep the net payers in the system and thus to achieve sustainability in the face of the emergence of new modes of operation.

The gradual leakage of traffic out of the traditional payment system is steadily compressing the range of settlement rates that will be sustainable in the longer term (say beyond 5 years). It should therefore be possible to get agreement on this pragmatic basis that the great majority of today's settlement rates are indeed "too high", and to secure faster reductions than have occurred in recent years.

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47 If uniform termination charges are adopted as part of a reform of the traditional system (and it seems likely, based on recent discussions in ITU-T Study Group 3, that governments, regulators and operators in many countries will adopt this alternative), this will remove some of this pressure, since refile and hubbing will now remove less traffic from the traditional systems. However, unless operators using the "new modes of operation" are also required to pay the termination charge rather than domestic interconnect or end-user prices (which might occur in some countries), the "new modes" will continue to exert pressure to lower the termination charge to cost-based levels.

This also seemed to be the view of the ITU Secretary General's "Informal Expert Group"[48] when it reported in April this year.

Question 4: Is The Level and Structure of Settlement Rates Sustainable?

No. Clearly, at today's levels of settlement rates, when operators that are net payers of settlements find the opportunity to carry traffic outside the traditional arrangements, they take it. Of course, this does not mean that the more established operators are abandoning the traditional system wholesale, because they must think at least twice before disturbing the existing correspondent relationships upon which so much long-established business relies. But newer players have fewer such concerns. Even many of the traditional players use tools such as refile, or agreements to terminate one-way traffic without a linkage to return traffic, far more often than is generally supposed.

Consequently, traffic is increasingly flowing outside the traditional arrangements as a joint result of the high settlement rates and the evolution towards a new industry structure in which operators have many "new modes of operation" available to them: for example, extending their own networks into other countries and interconnecting to the local incumbent operator's network there.

Thus there is little practical doubt that today's levels of settlement rates are not sustainable. Where there is a monopoly operator at one end of a "relation", and "new modes of operation" such as leased-line resale are not allowed at that end, these high levels of settlement rates might in theory be maintained for some years, but even in this case, the arrangement will come under pressure:

- Refile and hubbing will direct traffic to those routes where the settlement rate is lowest.
- If (as usual) collection rates as well as settlement rates are high in the monopoly country, callback and other forms of "turnaround" will tend to inflate the traffic imbalance to the

48 Their report and recommendations are discussed in Chapter 6.

point where together with the high settlement rates, it raises the flow of settlement payments to such a high level that the operators (and possibly the regulator) in the net payer country apply very strong pressures for change.

Major telecommunications users may also press for change, increasingly making unfavourable comparisons between prices and other conditions for telecommunications to the country concerned, compared to other countries.

It follows that substantial reductions in settlement rates are inescapable and that the structure of settlement rates must move towards a uniform charge ("termination charge") for each country, rather than differing settlement rates depending on the country of origin of the call. This will be the case even in most of the countries where a telecoms monopoly still prevails.

4. PRESSURES FOR CHANGE: THE CHALLENGE TO THE TRADITIONAL SYSTEM

In the previous section we discussed the *case* for change based on fundamental considerations about the desirability and sustainability of international payment arrangements. In this section, we discuss the forces which are likely to challenge the traditional system.

The traditional settlement system and the current level of settlement rates are under challenge from five distinct directions:

- **The emergence of "new modes of operation"** in which both the operational arrangements and the payment arrangements differ from the traditional correspondent relationship and settlement payments.
- **Commercial pressures from net payers of settlements**. Accounting rates/settlement rates are negotiated between pairs of correspondents, and net payers are becoming more and more reluctant to pay according to today's (and potentially tomorrow's) scale of settlement payments.

- **Pressure from regulators in net payer countries**. Some regulators, notably the FCC, have aligned themselves with the operators based in their countries who are net payers, and are pressing for the reduction of settlement rates. Interestingly, however, regulators in several other countries that are net payers of settlements (notably in Germany, with estimated net settlement out-payments of US$800 million in 1994, and the UK, where 1994 out-payments were estimated at US$158 million) have chosen not to do so.
- **The rethinking of international settlement practices** that is taking place multilaterally through the ITU and other international forums such as the OECD.
- **The WTO Basic Telecoms Agreement** in the case of the 32 Group A and Group B countries, whose WTO commitments are in conflict with the traditional settlement system as it is operated today (though not necessarily with a reformed version, as outlined in Section 3 of this summary).

Commercial Negotiations

Commercial negotiations still represent the main avenue for reform in the structure of the settlement system. Notwithstanding the frustrations often expressed in net payer countries, such negotiations (assisted in the case of the US by pressure from the FCC as regulator) have produced sizeable reductions in settlement rates. According to AT&T these "negotiations resulted in a reduction of 18% in the average accounting rate paid by AT&T from 1992 to 1995[49]. These numbers are controversial. FCC estimates show larger

[49] Comments of AT&T Corp. "In the Matter of International Settlement Rates", File No. IB 96-261, February 7th, 1997.

increases. The FCC has established its estimate, showing a 29% decrease in the weighted-average settlement rate for US operators from 1992 to 1996, and a 32% decrease from 1992 to 1997[50].

However, these reductions certainly still leave settlement rates in most cases well above any level that is likely to have a reasonable cost justification, and for some "relations" there has been little change.

Some major operators, especially AT&T, MCI and others in the US, frustrated with this situation, have been increasingly forceful (and successful) in urging their regulator, the FCC, to intervene.

Pressure from Regulators in Net Payer Countries

Increasingly, as telecommunications operators in those industrialised countries that are net payers of settlements have become concerned by the continuing rapid growth large scale and of settlement payments, they have pressed regulators in those countries to become more active in pursuing reform of the settlement systems. Such regulatory activism has included:

(1) Requiring disclosure of accounting rates (which were traditionally kept confidential). This has been done in the US, the UK and New Zealand, and has helped highlight exceptionally high settlement rates and increased the pressure to change them.

(2) In some countries (notably the US), regulators have sought to protect operators in a competitive market against excessive bargaining power at the monopoly end of a "relation" by imposing a mandatory requirement on the operators they regulate to establish proportionate return arrangements with

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50 FCC Notice of Proposed Rulemaking, In the Matter of International Settlement Rates, IB Docket No. 96-261, released December 19th, 1996; FCC Report and Order, In the Matter of International Settlement Rates in IB Docket No. 96-261, released August 18th, 1997.

their correspondents in monopoly countries. The FCC in the US does this through its International Settlement Policy (ISP). However, in Australia, New Zealand and Sweden (among other countries) the regulatory rules do *not* require proportionate return; Oftel in the UK only has a non-mandatory policy statement on proportionate return. The FCC (but not Oftel[51]) also requires uniform accounting rates for all operators to the same correspondent country (a policy sometimes referred to as "parallel accounting"). Policies requiring proportionate return and uniform settlement rates, which arguably could be a safeguard against anti-competitive behaviour by monopoly correspondents, also have their own anti-competitive effects. They raise barriers to entry and favour incumbent operators[52].

(3) Controlling practices thought to contribute to excessive flows of settlement payments. If there is a competitive market at one end of a "relation" ("Country A"), and a monopoly at the other ("Country B") this *may* mainly result in the diversion of traffic from B to A out of the traditional settlement systems to the "new modes of operation". If this happened, it would

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51 "There is no requirement on operators to maintain a system of parallel accounting". This statement (in Oftel's terminology) means that operators need not maintain the same accounting rate as others operating on the same route. "International facilities licences, guidelines on well-established international operator determinations and arrangements for accounting in respect of international conveyance services", Oftel, July 1997.

52 Many expert observers question whether proportionate return and uniform accounting rates are, on balance, beneficial to competition by blocking anti-competitive behaviour, since these restrictive policies themselves prevent (in the case of uniform rates) or inhibit (in the case of proportionate return) price competition in the rates offered for terminating international calls, thereby protecting incumbent operators.

further increase the flow of settlement payments in B's favour[53,54] to the advantage of the monopoly in Country B. Until recently, the UK government, for this reason allowed international traffic to be carried via the resale of leased-line capacity ("International Simple Resale" or ISR) only to or from countries that allowed ISR operations by UK operators. The UK government, though, retained regulatory powers to intervene subsequently if anti-competitive behaviour occurs. The FCC in the United States operated a similar reciprocity policy (recently modified, as we explain below) under the name of the "equivalent competitive opportunities" test, or "ECO test". The FCC, however, has abolished the ECO test, abandoned its own restrictions and has imposed new restrictions, discussed later in this summary, which on balance *tighten* its restrictions on leased-line resale.

(4) Setting indicative targets for reduction of accounting rates.

(5) Making these targets ("benchmarks") mandatory.

Today there is only one country (the US) where the regulator, the FCC, maintains interventionist policies of the last three types listed above. What seems to be emerging is a striking divergence of philosophies between the FCC on the one hand, and regulators in other countries with competitive telecommunications environments (such as Australia or the UK) on the other. The UK government abolished its ISR restrictions in June 1996, well before the 1997 WTO agreement (which, when it comes into force, will limit national

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53 The flow is usually in B's favour because the operator in Country B, as a monopoly, usually has substantially higher collection rates than the various competing operators in Country A.

54 There is also a more elaborate (and in this author's view, somewhat implausible) view that the operator in Country B may use above-normal profits in Country B that result from this situation to unfairly subsidise a competitive entry in Country B earning below-normal returns or even making losses. Proponents of this view (see Chapter 13, Section 13.2) do not reveal why the operator in Country B is expected to squander its profits in this particular way.

governments' ability to maintain such restrictions). In abandoning its restrictions, the UK government in effect took the position that gains from an unconditionally open competitive market (expanding the total "size of the pie") outweighed the theoretical risk that such radical deregulation might give too much bargaining power in international telecommunications to monopolies in other countries (enabling them to take too large a "slice" of the expanded pie)[55].

As we describe below (and in more detail in Chapter 12) the FCC has tended to take the contrary view. It has focused on issues of bargaining power and hence who gets what "slice of the pie". To that end it has maintained strong restrictions on the use of "new modes of operation" for international traffic, except to countries that have already complied with the FCC's unilateral decisions about how far settlement rates should be reduced.

The FCC, through several related but separate regulatory proceedings, has made three key decisions in this field:

- It has indicated that it may waive its established International Settlement Policy (ISP)[56] which requires uniform accounting rates for all US operators for any given country, and proportionate return, allowing new services and "new modes of operation"[57] for conventional international services in those cases where it believes this favours the operation of a competitive market[58]. It seems clear, however, that the FCC does not intend to use the

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55 In this case, the agency responsible is the Department of Trade (DTI). Oftel retains powers, under certain "conditions" in the licences granted to UK-licensed operators, to intervene subsequently if it finds that anti-competitive behaviour is occurring.

56 Regulation of International Accounting Rates, CC Docket No. 90-337.

57 Author's term: see detailed explanation on the next page of this summary.

58 Regulation of International Accounting Rates, Fourth Report and Order (Phase II), 11 FCC Rcd 20063 (1996).

flexibility it has granted itself through this decision in the sphere of basic fixed telephone services, except in two particular ways:

(1) to follow a "hands off" policy towards the emergence of Internet telephony.

(2) to waive restrictions on other "new modes of operation" such as leased-line resale or foreign PoPs (which require FCC approval under Section 214 of the 1934 Communications Act) only under specified conditions linked to the FCC's policy on settlement rates, as described below.

- It has adopted "benchmark" settlement rates, defined as a single number for each of four groups of countries classified by income level. It has in effect given US international operators an ultimatum that they must start applying these benchmark rates by a stated deadline[59]. (The benchmark rates are compared with current settlement rates for a range of countries in Exhibit ES.3.) Since the US operators have operating agreements with their foreign "correspondents", the decision puts them in an interesting position: to comply with the FCC Order, they must renegotiate their settlement rate with the correspondent if they can, and unilaterally breach their agreement if they cannot. Later in this summary (in Section 7 under the heading "Possible Outcomes") we discuss what might happen in practice.
- It has made its consent to the use of several of the "new modes of operation" under which traffic is carried outside the traditional settlement systems (specifically, leased-line resale and foreign-carrier PoPs: see below) for each "relation" conditional to varying degrees on the foreign correspondent carrier complying with the FCC-mandated benchmark settlement rate for the traffic that *does* continue to be carried under the traditional

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59 Report and Order in the Matter of International Settlement Rates, IB Docket No. 96-261; FCC 97-280, August 18th, 1997. The details are explained in Chapter 13 of this report.

arrangements[60]. At the same time as introducing these new restrictions, the FCC abolished old ones based on a reciprocity principle ("Equal Competitive Opportunities" or ECO test), as required by the commitments to market access and National Treatment made by the US to other WTO countries in the February 1997 WTO agreement.

These policies undoubtedly represent strong pressure for reducing the settlement rates in the traditional settlement systems. On the other hand, they do not attack the *structure* of the settlement systems *per se*. If anything, they tend to do the opposite: they restrict the use of some of the new "modes of operation" through which traffic can be carried outside the traditional settlement systems – though not, interestingly, the use of Internet telephony[61].

These FCC decisions raise some major questions about the proper governance of international activities that involve the jurisdiction of both the FCC and National Regulatory Authorities in other countries: we discuss the issues involved below in Section 6 of this summary. The decision to link FCC consent for the use of "new modes of operation" (with the exception of Internet telephony) to foreign correspondents' acceptance of the benchmark settlement rates

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60 Op. cit. paras. 232-259. The FCC decided that it "will authorise carriers to provide switched services over... private lines... on the condition that settlement rates for at least 50% of the... traffic on the route are at or below the... benchmark" (paras. 244-245).

61 It is interesting to note that making approval for the new modes of operation conditional upon the reduction of the settlement rates to benchmark levels gives incumbent operators an incentive to delay any such reduction to the last possible moment, since this has the effect of delaying the date when the new modes of operation are approved on the route concerned, and hence impedes the entry of competitors.

unilaterally declared by the FCC seems to violate the commitments to market access for foreign operators made by the US in the 1997 WTO telecommunications trade agreement[62].

New Modes of Operation

We noted earlier how service innovations such as country-direct service or callback result in "turnaround", increasing international traffic outflows from countries where there is strong competition in the market for international telecommunications services. These particular types of innovations do not take traffic *out* of the traditional settlement systems: they reverse the effective direction of traffic for purposes of calculating settlements, in such a way as to increase measured traffic imbalances, and flows of settlement payments. Consequently, they also tend to increase the pressures from net payers to curb the growth of settlement payments.

Another distinct set of service innovations, which we refer to generically as the "new modes of operation", have a quite different effect. They either remove traffic from the settlement systems entirely or (as in the case of refile and "hubbing") they involve routing traffic in such a way as to "mix and match" old and new

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62 The correct interpretation of the GATS and the 1997 WTO Basic Telecommunications Agreement appears to be that the FCC restrictions are a violation of the 1997 agreement if they are "unnecessarily burdensome" to achieve their declared aim of preventing anticipated anti-competitive behaviour. The "unnecessarily burdensome" test is specified in Article VI of the GATS. Ultimately, whether the FCC's restrictions are or are not "unnecessarily burdensome" under the GATS could only be definitely decided by a WTO dispute settlement panel.

modes of operation to maximum commercial advantage (as an alternative to the term "new modes of operation", the expression "full-circuit regime" has also been used[63]).

The five "new modes of operation" are:

- **Resale** of leased-line ("private line") capacity to provide public switched international telephone service. In this mode of operation (sometimes called International Simple Resale: ISR) calls originate on the public switched telephone network (PSTN), move to the destination country via leased lines or similar bulk transmission arrangements, and then terminate in the destination country via the PSTN.
- **Foreign Points of Presence (PoPs)/Points of Interconnection (PoIs)**. If an operator from Country A is permitted to extend its own physical network infrastructure, including transmission links, into another Country B and interconnect to the PSTN there in order to terminate international calls, the locations where such interconnection takes place are known as PoPs or (with exactly the same meaning) PoIs. This type of arrangement contrasts with the traditional mode of operation where the operator from Country A possessed only "half circuits" to a notional mid-point between Country A and Country B, not transmission capacity all the way from A to B. This mode of operation is also referred to as "self-termination"[64].

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63 This term was coined by Dr Tim Kelly of the ITU: it alludes to the fact that under all of what the author calls the "new modes of operation", the foreign operators secure transmission all the way into the destination country, rather than only half-circuits as in the traditional correspondent arrangements.

64 In certain cases the foreign operator may have its own plant all the way to the customer's premises at both ends, even though interconnect services must still be used between the PoP and the called party for most calls. WorldCom, for example, is in this situation for traffic between the US and Germany, or the US and the UK (for example) because it owns local networks at both ends of these routes.

- **Refile, hubbing or re-origination**[65], in which an operator takes its international traffic to a country where an open competitive market and low charges apply for forwarding of traffic to its ultimate destination in a "third" country. The traffic may get to the country where this "refiling" occurs either via a conventional correspondent arrangement, via a leased line, or via a foreign PoP[66]. The unconventional routing is selected in order to minimise the originating operator's cost for terminating international calls. From the point of view of the telecommunications operator where the call terminates, the call appears to have originated from the country where the refiling or hubbing took place[67]: for this reason, refiling or hubbing is sometimes called "anonymous" refile. Such unconventional routings are less and less constrained by technical considerations, because digital signals undergo relatively little impairment even if they traverse very indirect routings: this was not true for the analogue signals that prevailed at the time today's settlement systems was created. Refile, hubbing and re-origination are quite distinct from the "transit" arrangements that form part of the traditional settlement systems[68].

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65 In transit arrangements, the routings are approved by the destination operator, and the settlement payments are constrained by a rule, embodied in ITU-T Recommendations, that the shares of the accounting rate paid to the destination operator, and retained by the originating operator, must be the same.

66 In future, Internet telephony may be used in this way as well.

67 Technically, this is accomplished by stripping out the signalling data which identifies where the call originated, and substituting the corresponding data for the operator which is re-originating the call.

68 By taking certain traffic outbound from this originating country out of the settlement systems, it may also cause or exacerbate an imbalance of inbound traffic over outbound, in the "relation" between the originating and terminating countries providing the originating operator with additional settlement revenue from the traffic that remains within the traditional settlement systems.

- **International alliances of operators**. Operators may decide to combine their activities in certain lines of business internationally, as in alliances like Concert (led by BT), World Partners (led by AT&T) or Unisource (led by KPN of the Netherlands, Telia of Sweden and Swiss PTT Telecom) that service large multinational business customers. (Proposed transnational mergers take the same trend a stage further.) Such alliances provide end-to-end service. The alliance purchases and pools transmission capacity (either as half circuits or in other forms) provided by the parent company or other telecommunications operators. It uses this capacity to build global networks on which data and value added services, and increasingly voice services as well, are provided. The circuits may be interconnected at one or both ends to domestic networks via local PoPs. Traffic is not accounted for within the traditional arrangements. The alternative revenue-sharing and cost-sharing arrangements used by the international alliances are complex and diverse.
- **Internet Telephony**. Recent technological developments, together with the beginnings of gateway arrangements allowing telephone calls to flow between the Internet and the PSTN, opens up a realistic possibility that the carriage of international telephone calls via the Internet ("Internet telephony") will soon move from its original more or less prototype or hobbyist status to become a major "mode of operation" for carrying commercial traffic. It seems so far that this may happen entirely outside the conventional regulatory framework; it is certainly happening outside the traditional settlement systems[69].

The Rethinking of International Settlements Practices Through Multilateral Bodies

Just as operators and governments collaborated multilaterally to shape the traditional settlement arrangements, multilateral

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69 Except that the traditional settlement arrangements for leased-line service still play a role: see the discussion in Chapter 14.

consultations in recent years have focused on how to adapt international settlement arrangements to the "changing telecommunications environment". Essentially all the players are committed to this multilateral consultative process. Even the FCC, which has chosen to act unilaterally on the question of benchmark settlement rates, has stated that "we should continue to work vigorously with these (multilateral) organisations to pursue accounting rate reform[70]".

The three main multilateral entities active in this field have been:

- the OECD, conducting economic research and seeking to develop a consensus among governments in advanced market-economy countries.
- Study Group 3 of the ITU's telecommunications standardisation sector (ITU-T), the source of the ITU's highly influential formal Recommendations in this field.
- the Informal Expert Group appointed in early 1997 by the ITU's Secretary General, Dr. Pekka Tarjanne.

The Secretary General himself has played a vital catalytic role as advocate for fresh thinking in this field and the case for rapid reform of the settlement systems along market-oriented lines. Work by the ITU Secretariat, the activities of the OECD, and the ITU-T Study Group 3 have helped clarify the issues and have assembled a large volume of useful data and analysis. In addition, the World Bank and various regional bodies including APT in Asia and CITEL in the Americas have been active in stimulating reconsideration of the settlement arrangements. Within the European Union, the European Commission, working with national governments and regulators, has been the architect of the EU Single Market for telecoms services and the associated changes, described earlier in this summary, in the way international calls are handled.

The Informal Expert Group (IEG) contributed an independent view on the adapting of international economic relationships and

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70 Report and Order in IB Docket No. 96-261, August 19th, 1997, para. 18.

settlement arrangements to an increasingly competitive environment. It puts forward a set of "guiding principles" which:

- favoured increased competition and "the move to transparent, non-discriminatory, cost-oriented settlement arrangements";
- advocated "new co-operative relationships" among organisations concerned with the issues, including national regulators, on a multilateral basis;
- emphasised the informational role of the ITU and its contribution to developing costing methodologies and pricing principles;
- argued that the ITU should "help articulate the general range of settlement rates to which current rates are likely to evolve";
- proposed a role for the ITU to "mobilise support from other international institutions to help countries make the inevitable adjustments".

In addition, the IEG advocated "an immediate, global reduction in settlement rates of the order of 5 to 10% during 1997, followed by a similar reduction in the first half of 1998".

The ITU in co-operation with the Commonwealth Telecommunications Organisation has since commissioned eight Case Study analyses of the likely impact of reduced settlement revenues on a range of telecoms operators in specific low-income countries.

5. WHAT HAPPENS NEXT?

Considering what might happen next is inevitably a speculative exercise, in such a fast-changing situation. Still, it's useful to consider in broad terms the kinds of changes that may come about, and also *how* they may come about.

There are essentially four ways that the international economic relationships involved in the carriage of international traffic may change:

(1) The traditional arrangements might remain in use for a large amount of international traffic, but with the level of settlement rates, at least for the great majority of "relations", being substantially reduced.

(2) Structural change within the traditional arrangements. This might include cost-based "termination charges" which would be the same for all international calls to a given country, regardless of the country where the call originates; or at least would involve settlement rates which vary relatively little for each destination country. It might also include asymmetric settlement rates which are lower for high-volume, low cost operators in advanced industrialised countries than for operators with lower volume and higher costs, predominantly in developing countries[71].

(3) Transferring traffic to "new modes of operation" outside the settlement systems.

(4) Abolishing the distinction between international service and domestic long distance, so that domestic interconnect charges replace settlement payments[72].

In practice, it is unlikely that any one of these four possibilities will prevail everywhere. There will be a mix, different for different pairs of countries:

- Options (1) or (2) may predominate for traffic to and from many developing countries, although it is also likely that an increasing number of developing countries may make a radical step towards an open-market, pro-competition policy by joining a "Single Market"[73], in which case options (3) or (4) also come into play.

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71 As already provided for in the case of the Europe/Mediterranean region by ITU-T Recommendations D300 and D150R.

72 In this case, there could be a substantial degree of asymmetry, with cost-based interconnect rates in developing countries being substantially higher than those prevailing.

73 If the country is a WTO Member (or is willing to join the WTO and accept its trade rules), it can do this by adopting a new national Schedule to the 1997 WTO telecommunications agreement that effectively makes it part of the WTO "Single Market".

- For traffic between countries that have pro-competitive regulatory rules, to varying degrees, the various "new modes of operation" (Option 3) are likely to become more and important: large amounts of traffic will be handled in those ways outside the framework of the traditional settlement arrangements.
- For pairs or groups of such countries already forming, or committed to form a Single Market (US/UK for example, or EU/EEA), it is already clear that option (4) will prevail. This does not necessarily mean, however, that the traditional settlement arrangements will vanish for all international traffic within a Single Market. Operators will sometimes find it convenient managerially and perhaps also the most economic solution, especially for lower-volume traffic flows, to continue using the traditional system, as long as they can do so at settlement rates which are not far above the level of domestic interconnect charges[74].

6. HANDLING THE TRANSITION: ISSUES OF POLICY AND GOVERNANCE

Policy Choices: Regulatory Options and Governance

The developments and issues described in this report require government decision-makers (Ministers, executive officials, legislators, regulators, and even courts of law, depending on the structure of government in each particular country) to make choices about two distinct kinds of questions: **process questions** concerning how regulatory decisions should be made and, if necessary, enforced; and **substantive questions** about the regulatory decisions themselves.

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74 The settlement rate should not exceed the (local) interconnect rate plus the costs of domestic long-distance carriage of the call, international gateway switching and an international half-circuit.

"Process" Questions

National decision-makers will increasingly need to choose...:

- How far to leave settlement issues to be decided by the telecommunications operators through commercial negotiations, and how far to intervene.
- If the decision is to intervene, whether to act:
  - Unilaterally, telling telecommunications operators carrying traffic to or from particular countries what they must do or may not do concerning settlement payments, without reference to the views of the regulator (or other relevant government authority) in the other country concerned.
  - Bilaterally, through decisions concerning individual "relations" with particular correspondent countries, arrived at through agreements or understandings with each of those countries' National Regulatory Authorities (NRAs).
  - Multilaterally, through agreements or understandings (e.g. voluntary compliance with new or revised ITU-T Recommendations) reached among NRAs and operators from numerous countries, through the ITU or otherwise.

On the first question, the stances of each of the NRAs in different countries fall fairly clearly into three categories:

- **Interventionist**: actively intervening, and specifically seeking to impose levels of settlement rates well below today's levels. So far the FCC in the United States is the only regulator in this category.
- **Pro-competitive but non-interventionist**: NRAs in most of the countries with a pro-competitive telecommunications policy are in this category. They are aware of the issues concerning settlements and have adopted some regulatory measures in this field (usually concerning disclosure), but have chosen not to seek to impose a solution on the operators or on regulators in other countries. It is striking that in several countries other than the US

that now have pro-competitive regulatory regimes and are net payers of settlements including Australia, Germany, Hong Kong and the UK, the national regulators have so far chosen not to intervene.

- **Regulators in countries with a monopoly industry structure for telecommunications**: So far these NRAs, where they exist, have either not addressed the subject of international settlements at all, or have favoured the status quo.

Until recently, settlement matters were handled almost exclusively by telecoms operators. The operators defined the broad framework of the settlement systems by creating a consensus for particular ITU-T Recommendations. They negotiated the specifics, such as levels of accounting rates, through commercial negotiations between themselves, separately for each pair of operators (i.e. each "relation"). As the US, followed by other countries, made the transition from monopoly to competition in telecommunications, the pressures for change began to escalate. So far, however, the FCC remains the only NRA in the world to have taken a highly activist stance on this subject. Some other NRAs have taken cautious steps in such areas as transparency (e.g. Oftel in the UK has published all UK accounting rates) and have retained reserve powers to intervene in future if necessary, especially to ensure that new operators are fairly treated. None has yet undertaken a radical intervention comparable to the FCC's benchmarks decision of August 1997.

On the matter of "unilateral", "bilateral", or "multilateral" action, two essential questions are inescapable:

- Does an NRA's jurisdiction extend to unilaterally deciding the terms of an international collaboration in which each operator should be a "willing buyer" and "willing seller" of services, and in which the sovereignty of the correspondent country and the jurisdiction of *its* NRA should be respected?

- Even if the answer to the first question is "yes", is it wise to seek to dictate such decisions unilaterally?

The answer to the first of these two questions depends on complex issues of both domestic and international law. It is clearly beyond the scope of this report, and its author's expertise, to give a view on the legal issues involved. It is however relevant to note that, over the years, a body of legal principles and precedents has grown up concerning the handling of international commercial and operational issues that involve two or more national jurisdictions[75]. One of the key principles is that of "comity": the obligation of courts and other public bodies in one country to give due weight to the jurisdiction and laws of the other country or countries involved.

The FCC, in taking the unilateral route, stated (in its "Benchmark" Report and Order of August 1997)[76] that:

- "...we will require that US carriers negotiate with their foreign correspondents settlement rates at or below the appropriate benchmark... If US carriers fail to achieve progress... we will take... enforcement action..."
- it will only grant foreign or foreign-affiliated operator authority to establish PoPs in the United States ("certain types of Section 214 authorisations") on condition that the "foreign affiliate offer US international carriers a settlement rate at or below the relevant benchmark".

Startlingly, the FCC claims that the first of these provisions (among others) does "not constitute an exercise of jurisdiction over foreign carriers" since the decision and any related enforcement actions "will apply to US carriers within our jurisdiction, not their foreign correspondents"[77], and the decisions will only have an "indirect" effect on operators outside the US. It also argues that its position on the granting of Section 214 authorisations does not conflict with

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75 Since the issue is a commercial one, and many of the players involved have monopolies or substantial market power, competition law as well as the administrative law of telecoms regulation must be considered.

76 Report and Order "In the Matter of International Settlement Rates", in IB Docket No. 96-261, released August 18th, 1997; para. 20.

77 Report and Order in IB Docket No. 96-261, op. cit., para. 279.

the commitments of the United States to market access and National Treatment of foreign operators under the 1997 WTO agreement, even though the US Schedule to that agreement says nothing about the commitments being conditional upon reduced settlement rates.

No doubt these issues will be very fully dissected in the US District Court for the District of Columbia. As of October 23rd, 1997, six non-US telecoms operators and two international bodies had submitted "Petitions to Review" the FCC's August decisions in the "Benchmark" proceeding, typically arguing that (to quote Cable & Wireless plc of the UK), these decisions establish "without... jurisdictional authority the rate that foreign common carriers... must charge US common carriers for terminating their traffic in the foreign market..."[78]. Separately, the Philippine regulator (the National Telecommunications Commission), and the largest Philippine operating company (the Philippines Long Distance Telephone Company) have filed "Petitions for Reconsideration" with the FCC.

But aside from the question of the *lawfulness* of initiatives to impose an outcome unilaterally, there is also the question of whether such an approach is wise. The entire fabric of international telecommunications has been built up based on a very high degree of mutual and voluntary co-operation between operators and governments in widely varying societies around the world. This co-operative process has become successful beyond the wildest dreams of its founders in fields ranging from numbering and standards for technical compatibility to operational and financial arrangements. Any user of computers can testify that such seamless connectivity and universal compatibility was not guaranteed to happen, does *not* in fact happen in large areas of computer applications, and should not be taken for granted. Unilateral action on key issues does not enhance the atmosphere for such voluntary co-operation in the future.

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78 United States Court of Appeals for the District of Columbia, Cable & Wireless plc vs. FCC, No. 97-1612, Petition for Review, September 26th, 1997.

Substantive Questions

To the extent that national regulators (individually, or collectively through a multilateral process) do decide to intervene in the international settlement systems (as the FCC clearly *has* decided to do, but other NRAs apparently have not), the agenda for the regulator in this field includes:

- What levels of settlement rates to insist upon, based on what economic or regulatory principles.
- Whether to regulate the non-price terms of operating agreements, e.g. requiring proportionate return.
- Whether to attempt to restrict the "new modes of operation", tolerate them, or positively encourage them.

In developing countries, the agenda also should include:

- Measures to ensure that operators exploit the advantages to them of the "new modes of operation" (e.g. foreign-operator PoPs) to generate additional outbound traffic to industrialised countries, outside the settlement systems, wherever regulatory rules and operational practicalities permit. Such measures could, for example, include bilateral agreements with industrialised countries, or negotiated entry into multilateral Single Market groupings for purposes such as that emerging from the 1997 WTO agreement.
- Measures to minimise the adverse effect of reduced settlement in-payments on telecommunications network development and on progress towards universal service goals: for example rebalancing of prices to make activities other than inbound international traffic more profitable.

Even where these possibilities are energetically pursued, however, it is likely that the forthcoming reductions in settlement rates will cause significant disruptions to the financial management of many telecoms operators in developing countries.

7. POSSIBLE OUTCOMES

Stepping back from the intricacy of the issues and possibilities discussed so far, is it possible to discern broadly how events might develop? This section suggests a range of possibilities, in the form of three scenarios.

Scenario 1: The "Soft Landing" Scenario

This scenario broadly corresponds to the changes envisaged by the Informal Experts Group (IEG) appointed by the Secretary General of the ITU, which reported in April, 1997. It involves a degree of "give and take" on the part of all the players involved:

- For high-income countries, which also are becoming (with almost no exceptions) countries with open competitive telecoms markets as well, changes that are naturally taking place as a result of the transition to a Single Market ensure that there is no significant or lasting conflict with the FCC's "benchmarks". In any case, for traffic between the various Single Market countries, large amounts of traffic flowing via the "new modes of operation" will be terminated at domestic interconnect rates or end-user prices. These prices themselves are far below the benchmarks, and settlement rates will have to fall to the benchmark levels or below in order to ensure the sustainability of the traditional system as just one of a "mix" of different payment methods in a competitive telecoms market where alternatives are readily available.
- For other countries, including major net recipients of settlement, negotiations lead to staged but accelerated reductions in settlement rates, rather than the very rapid reductions called for by the FCC's benchmarks and associated deadlines.
- Developing countries which are adversely affected are able to obtain significant transitional assistance from the World Bank, the ITU and other international agencies.

Scenario 2: The Conflict Scenario

In this scenario, the "irresistible force meets the immovable object". Net recipients of settlements refuse to lower settlement rates fast enough to satisfy the demands of the telecommunications operators who are large net payers (AT&T, for example), and the FCC. Jurisdictional issues escalate (starting from the District Court proceedings that began in September 1997), as the FCC and the major net payers based in the US seek to force the issue.

The likely outcome would be a protracted stalemate while the jurisdictional issues are fought out in the courts or through other dispute-resolution mechanisms, possibly even high-level international diplomacy.

As this scenario proceeds (if it does), international relationships between operators, governments and regulators would be likely to deteriorate, possibly culminating in a variety of adversarial acts, which might include:

- One or more operators in a net-payer country unilaterally reducing settlement payments.

- A regulator in a net-payer country (probably the FCC) ordering a carrier to do this.

- An operator in the correspondent country, either spontaneously or under the direction of *its* regulator, inactivating certain international circuits in retaliation, or at least refusing to authorise additional circuits; or alternatively sending all its traffic to the US indirectly via an operator in a third country outside the FCC jurisdiction.

Lest this scenario seem alarmist, it is worth noting that events along exactly these lines occurred in the case of the "relation" between AT&T in the US and Telintar in Argentina in 1996, though the

dispute apparently has been settled subsequently[79]. Past experiences with previous attempts to unilaterally decide international issues are also not encouraging as precedents in the orderly management of international telecommunications[80].

The case for maximum effort to avoid the Conflict Scenario is compelling.

Scenario 3: The Competitive Response Scenario

The essential distinguishing feature of this Scenario is that in it, countries which are currently major net recipients of settlements, especially developing countries, would positively embrace the opportunities offered by a competitive international environment. They would seek to maximise these opportunities rather than simply accepting reduced settlement rates and seeking to minimise their adverse impacts (as in Scenario 1), or seeking to delay change and defend the status quo (as in Scenario 2). In doing so, an essential element of the strategy of developing countries would be to hold governments and regulators in the industrialised "net payer" countries fully to their own expressed commitments to open competition.

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79 Telecommunications Reports International (TRI), October 25th, 1996. According to TRI, normally considered a reliable source, at one stage in 1996 AT&T unilaterally limited its settlement payments to 80 cents per minute. Telintar "unidirectionalised" certain circuits (i.e. stopped accepting traffic on them from AT&T) on the grounds that AT&T had failed to make past-due payments. According to Telecommunications Reports, the FCC International Bureau then ordered all US operators to stop settlement payments to Telintar. Again according to Telecommunications Reports, a subsequent understanding, approved by the FCC earlier this year, called for AT&T to pay 92 cents per minute for the period to September 30th, 1997 and then 85 cents per minute for the rest of this year.

80 The issue, highly controversial in the 1970s, of whether to proceed with new submarine cables across the Atlantic provides a telling example, which we discuss further in Chapter 16.

In this scenario, as in Scenario 1, operators who are net recipients of settlements today agree to accelerated reductions of settlement rates, but do so on condition that they are granted the right to carry traffic into the net-payer countries such as the UK or the US using "new modes of operation". This could include Internet telephony, leased line resale or their own PoPs established in those countries. Of course, relatively few operators in developing countries will have the resources to implement such a strategy themselves. It is nevertheless entirely practical to do so through an alliance; through an arrangement in which a strong operator from one developing country carries traffic for other developing country operators. Alternatively, some third party, which might well be a telecoms operator based in an industrialised country, could perform the necessary aggregation of traffic and operate the necessary network arrangements under contract to several developing-country operators.

In effect, governments and telecoms operators from developing countries would (in the US case) be turning around the FCC's position of refusing to authorise new modes of operation such as leased-line resale or foreign-operator PoPs[81] until the correspondent country's settlement rate is reduced to (or below) the benchmark rate promulgated by the FCC. The correspondent would pursue the converse proposition: agreeing to accelerated reductions in settlement rates, on condition that it receives the right to utilise "new modes of operation": in the US, for example, it would petition the FCC to grant Section 214 authority, and full interconnection rights, for such an extension of the correspondent's operations into the United States (for example via a foreign-operator PoP), with no further conditions or restrictions other than the reduction of settlement rates to the agreed levels. For correspondents from countries that are WTO members, this is a matter of holding the industrialised, net-payer countries to the letter of their market-opening commitments in the 1997 WTO telecommunications agreement.

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81 Strictly, refusing to grant Section 214 authorisation.

In the new Single Market situation thus created, the correspondent would compensate for its reduced settlement rate from incoming international calls by a large expansion of its profits on international traffic *to* each major country that is a net payer of settlements, outside the traditional settlement systems and using one or more of the "new modes of operation". The increased profits would arise from:

- Increased volume, due to reduced collection rates and increased marketing and product/service innovations and enhancements, for which there would now be a much greater incentive.
- Low unit costs, due to the use of end-to-end transmission links and domestic interconnect at the distant end of the call.

To fully exploit the Scenario 3 opportunity in practice, groups of developing countries would need to find ways to aggregate their outgoing traffic to achieve economies of scale. The scenario indicated several ways this can be done. Likely candidates to launch such an initiative are operators that have emerged or are emerging as major "hubbing" players in developing or newly-industrialised countries: for example, Singapore Telecom arguably is such a player already, and VSNL in India apparently intends to become one.

8. POSTSCRIPT: THE WAY FORWARD; A PERSONAL VIEW

Contemplating the relatively unpromising prospects offered for some developing countries by the "Soft Landing" scenario, and the unconstructive nature of the Conflict Scenario, it seems worthwhile to seriously investigate the possibilities of Scenario 3, the Competitive Response Scenario. Above all, every effort should be made to avert the Conflict Scenario. At worst, it might disrupt the orderly management of international services, or conceivably even interrupt service between certain countries at certain times. Even on the most optimistic view, it would surely undermine the excellent working relationships that have so far made international telecommunications work so well.

The best opportunity for developing countries is not to concentrate exclusively on seeking to minimise the damage caused by reductions in incoming settlements (though this is obviously necessary), but to re-examine the entire configuration of their business to obtain the best economic results achievable in the new environment. In particular, operators in developing countries should:

- Respond to the increased incentive to cut collection rates and expanding outgoing traffic, through a major effort to:
  - Increase outgoing volume by cutting collection rates; by extending and enhancing services by improved marketing (for example, through innovations such as pre-paid telephone cards, and through other kinds of card services); and by attracting capital into what can certainly be very profitable investments in expanded international capacity.
  - Increase *margins* for outgoing traffic through aggregation of traffic from multiple countries; acquiring end-to-end transmission capacity instead of half circuits; and establishing PoPs in industrialised countries.
  - Make full use of the "new modes of operation", including Internet telephony.
- Develop a negotiating approach for bargaining with regulators and operators in the industrialised countries to ensure that regulatory barriers in those countries which could block implementation of such a strategy are removed.
- Recognise that achieving this in practice may require some concessions to the concerns of industrialised countries where the telecoms market is competitive. Such concessions might include agreement to reduced settlement rates matching, or reasonably close to, what is being sought by the FCC, or new commitments (through the WTO process, for example) to a phased timetable for increased opening of the national market to international competition.
- Develop strong "country direct", card calling and call back services of their own. These were less attractive in the past

because they would have reduced the incoming traffic imbalance and hence the level of settlement payments, but become more and more attractive as settlement rates within the traditional correspondent system move down towards cost.

The new environment, while highly challenging for almost every participant, need not be a "zero sum game". Gains for one participant do not necessarily mean setbacks for another. The key to managing the new situation successfully is to recognise this fully, and seek out so-called "win-win" solutions where as many participants as possible can achieve a positive outcome.