Chapter 8
Asymmetric Deregulation and the Transformation of the International Telecommunications Regime*

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For 120 years, governments cooperated in the International Telecommunication Union (ITU) to maintain an international telecommunications regime which, compared to other international institutions, was remarkably stable. The framework established in the Austro-German telegraph treaty of 1850 was transferred to a multilateral regime with the birth of the International Telegraph Union in 1865, reaffirmed with the transition to the telecommunication union in 1934, and retained virtually unaltered until its transformation during the past three years. Scholars and industry observers have often interpreted this stability as a triumph of functionalist rationality, a view that was encouraged by ITU policy makers (Jacobson, 1973; Renaud, 1986, 1990; Wallenstein, 1976). But while the issues addressed in the ITU lent themselves to a technocratic style of problem solving, functionalism is weak as a causal explanation of regime cooperation in general and ITU cooperation in particular. Among other deficiencies, it overlooks the power and interests of the players involved, as well as the ways in which different collective action problems generate incentive struc-

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tures that help define the possibilities for a given style of problem solving in the first place.

The fundamental purpose of the *ancien* regime that has recently been replaced was to balance the demand for national sovereignty over domestic telecommunications with the requirements of international correspondence by standardizing internetwork connections and regulating cross-border service provision. In contrast to other collective action problems such as prisoner's dilemma, this was a coordination game with comparatively few incentives to defect from cooperation. True, network standardization sometimes involved distributional struggles over whose equipment would be chosen as the global model, but once a standard was agreed, nonconformance entailed increased transaction costs from the additional procedures and equipment needed to maintain interconnection which governments generally did not want to pay. Service regulation and provision was made even easier by convergent interests: None of the ITU's member governments wanted foreign competitors to sell international services to their domestic customers on an end-to-end basis, so they created a regime under which these were jointly provided by national carriers with the revenues split on a 50/50 basis. Many additional regulatory rules were developed to buttress the carriers' positions by precluding private sector competition in international services from home or abroad. In short, the regime sanctified an international system comprising mutually exclusive and noncompetitive national segments, precluded the sort of distributional conflicts associated with open markets and trade, and became the world economy's oldest and most stable multilateral institution.

An essential feature of the *ancien* regime was that its jurisdiction was strictly delimited to international correspondence. Members could organize their domestic telecommunications industries (and socioeconomic systems) however they pleased, and while almost all chose a public monopoly, a few opted for private monopolies or varying degrees of regulated competition. All that mattered was that they played by the same rules in organizing cross-border traffic. Thus the regime accommodated asymmetric regulation at the national level, but required symmetric regulation at the international level. In principle then, the asymmetric deregulation of domestic markets in the 1980s that is explored elsewhere in this volume might have been compatible in purely functional terms with retention of the *ancien* regime. In practice, the political and economic forces that catalyzed domestic change did not stop at the border, but pushed on into the international sphere and undermined the symmetry of national preferences and practices therein, upon which the regime rested. The

result has been a deep transformation in the overarching principles and norms of the regime, from the age-old assumption that international interconnection and transmission were best organized by national monopolies providing joint services, and to the assumption that these objectives should be realized through a more market-based system which favors the interests of competitive corporate suppliers and users.

This chapter explores the evolution and transformation of the international telecommunications regime, and the role of policy (a) symmetries in that process. I argue that for 120 years, the administrations of the major capitalist countries had a shared interest in maintaining absolute control over their national telecommunications systems, and succeeded in devising regime procedures and policies that reflected and reinforced that control. To be sure, the communist and less developed countries (LDCs) were not happy with northern domination of the equipment industry and accompanying standards process, or with the relative conditions of their own networks and services. But to the extent that they were or became sovereign, their administrations also benefited from a regime that blessed national monopolies and joint service provisioning. The main losers in this arrangement were corporations that might have preferred a more liberal system, although the historical record is unclear about just how strong that preference really was in an age of comparatively limited technical conditions and market opportunities.

However, the information revolution provided the private sector with strong incentives to push for competitive supply and flexible use of networks, equipment, and services. Beginning in the United States, a coalition of influential transnational corporations (TNCs) mobilized to pressure governments for change, first in domestic policy arrangements, and later in the international regime. Their campaign was aided immensely by a deep shift in the intellectual environment, as industry analysts from around the world became convinced that the conditions which had justified monopoly control in the past no longer applied in an increasingly dynamic information economy. The globalization of the new corporate interest configuration and intellectual outlook in the 1980s led governments to redefine their interests and embrace varying degrees of liberalization in accordance with their specific domestic institutions and market conditions. Hence, policies of international liberalization, and the fact of their asymmetric character, have undermined the pillars of a uniform and restrictive regime framework and resulted in its transformation in the past three years (1988-90).

To access a transformation process, we need a baseline of prior

conditions against which to measure change. However, there have been precious few theoretically informed studies of cooperation in the ITU to provide a clear picture of the *ancien* regime (Cowhey, 1990). Accordingly, the first part of the chapter attempts to fill this void. The first section examines the role of symmetric preferences regarding international regulations in ensuring regime stability. The next section assesses the organization of power relations within the ITU, and the third section shows how this impacted the policy process. The section following that then lays out the key regime principles, norms, and rules which resulted. The second part of the chapter turns to the contemporary process of regime change. The first section assessed briefly the driving forces behind global liberalization, while the final section details the impact on regime procedures and policies.

SYMMETRIC REGULATION AND THE ANCIEN REGIME

Convergent Interest and International Stability

Historically, governments cooperated in the ITU to maintain two interrelated arrangements: the telecommunications regime for network standardization and service regulation and provision; and the radio regime for the division among nations and services of frequency spectrum and geostationary satellite orbital slots. The ITU is a complex organization comprising numerous specialized bodies and functions; here we are concerned solely with three bodies and corresponding instruments that defined the *ancien* telecommunications regime. The Plenipotentiary Conference was the ITU's supreme body, and convened roughly every 7 to 10 years to renegotiate the treaty-level International Telecommunication Convention. The Convention was the governing document for the organization and its regimes, and comprised broad principles and norms specifying the overarching purposes and procedures of cooperation. The World Administrative Telegraph and Telephone Conference (WATTC) convened roughly every 10 to 15 years to renegotiate the treaty-level International Telegraph and Telephone Regulations. The Regulations comprised a mix of norms and rules clarifying how states should act in the regulatory sphere to implement the Convention's intent. The International Telegraph and Telephone Consultative Committee (CCITT) was a permanent organ that met continuously in 4-year study periods demarcated by quadrennial meetings of its governing body, the Plenary Assembly. The CCITT

developed detailed Recommendations, or voluntary standards and regulatory rules for network and services.*

The ITU and its regimes were designed by and for the European countries' Ministries of Posts, Telegraph and Telephone (PTTs). Nothing in the Convention explicitly precluded membership for counties where private firms were dominant, as long as these abided by the rules of international correspondence. However, a straightforward reading of formal instruments does not reveal the intersubjective meanings and politics behind them, as "Nationalization or complete control over telegraph was always an unwritten prerequisite for membership" (Codding, 1952, p. 42). Indeed, the United Kingdom was not admitted until it nationalized telegraphy in 1868, as continental administrations felt it would be easier to coordinate with a like-minded public agency. In this context, the United States was the odd man out. With its comparatively liberal domestic institutions and greater private control, the United States did not fit the domestic model elsewhere, and regarded the ITU's international arrangements with hesitation and even hostility. The first meeting attended by an American was in 1871, and he was a businessman operating in a personal capacity with no brief from the State Department. The American ambassador to Russia attended the 1875 meeting in St. Petersburg, but only as an observer. The Europeans were torn by the fact that while the United States had failed to nationalize its systems, its participation was nonetheless functionally necessary for international communications. For example:

> Secretary of State Hamilton Fish originally asked the presidents of two private companies to attend the conference but both declined, so then Fish asked [the ambassador to Russia]. Sec. Fish said the Russian *charge d'affaires* in Washington "has been very urgent for us to be represented at the proposed telegraph congress in St. Petersburg."

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* Two comments are necessary here. First, it is important to distinguish between the telecommunications and radio regimes. While both are negotiated in the ITU and are closely interrelated, they are based on separate legal instruments devised in different ITU bodies, and involve distinct functional problems and national interests. And while the International Consultative Committee on Radio (CCIR) does produce technical standards for wireless communications, this function accounts for only about 15% of its activities, and can be treated as ancillary to those of the much more prominent CCITT. Second, as is discussed in the chapter's final section, the three bodies and corresponding regime instruments mentioned above were changed in the late 1980s. The narrative in the first four sections is concerned with the period prior.

> When it was explained to the Russian that a person sent by the United States could not speak for the private companies, the Russian "then intimated a disposition to receive delegates from private companies." (Feldman, 1976, p. 18)

Dealing with the new world upstart was not easy. The American ambassador made no effort to conceal his distrust of the Europeans at St. Petersburg, and argued in his post-conference report to the State Department that

> The interests of the public who use the telegraph seemed to be entirely subordinated to the interests of the state and to the administrations; that is, to a fear lest any improvement might produce less revenue that is got at present, and lest it might throw more work on the telegraph bureau. (Codding, 1952, p. 65)

In successive meetings, American delegates consistently challenged PTT proposals, and "participated to the extent of practically nullifying whatever the conferences hoped to accomplish" (Feldman, 1976, p. 7). But by the turn of the century, hostility began to give way to pragmatism. The government sent more people to ITU meetings and took an interest in policy developments. After World War I, Woodrow Wilson's administration even attempted to play a leadership role *vis.* the telegraph and radio arrangements by proposing a consolidated Universal Electrical Communications Union. When the telecommunication union was born in 1934, the United States finally agreed to join subject to three conditions. First, it demanded that the Convention by changed to enhance private sector input. Second, it signed the Convention to attain membership, but issued numerous reservations to those articles it deemed objectionable. Third, it refused to sign the Regulations, claiming it could not legally bind American firms to some of the rules therein.

Passage of the 1934 Communications Act of America relaxed these constraints on participation. Further, the creation of the Federal Communications Commission (FCC) had an important effect on the composition and outlook of American delegations to the ITU. The State Department officials leading prior delegations lacked the technical training, institutional support, and stability of postings necessary to attain sufficient competence. The policy process was controlled by private companies involved in international correspondence, and they often advanced positions at the ITU that were wildly at odds with those of foreign PTTs. With the launching of the FCC, the latter felt they finally had an official counterpart who spoke the same language and had similar objectives. The Act also gave the American Telegraph and Telephone Co. (AT&T) and a few international record carriers

(IRCs) officially sanctioned dominant positions in the markets, and their preferences regarding international regulation, service provisioning, and network interconnection generally fit with those of the PTTs. In short, the United States moved into rough conformity with the PTT model and the regime's major purposes. This constituted a relative shift in the balance of state-society relations, as the private sector now operated within a framework of federal and international rules. Of course, the FCC was heavily dependent on AT&T and the IRCs, and many observers believe this constituted regulatory capture. But in the ITU, the differences between the United States and other countries were now primarily on the means, rather than the ends of international policy. For the next 45 years, the United States endorsed the regime's broad outlines, if not all its particulars.

While the errant lamb had joined the flock, its refusal to sign the Regulations remained a problem. The Regulations contained some detailed rules on charging and accounting that were distasteful to AT&T and the IRCs, whose tariff structures and procedures differed somewhat from those of the PTTs. Other provisions were thought to stifle technomarket development even within the accepted monopoly framework. True, the United States was participating in ITU fora, and its carriers complied with enough of its norms and rules to facilitate interconnection and avoid undermining the regime, but the American approach also made the joint planning of facilities and services a cumbersome affair. It was difficult to undertake new multilateral actions if AT&T, the world's biggest carrier from the world's biggest market, was not in step. ITU members concluded that if the United States refused to play by the rules, it would be necessary to modify them.

Deformalization of the Regulations was the solution. The 1949 WATTC recommended that the Regulations be amended so as to negate American legal concerns about the treaty being too restrictive. Following changes in the details of accounting, transmission prioritization and so forth, the United States signed the Telegraph Regulations for the first time, albeit with some important reservations. But it still did not sign the Telephone Regulations, which it viewed as constraining the rapidly expanding service. At the 1958 WATTC, several delegations suggested transferring most of the Regulation's elaborate provisions to the Recommendations. This would appease the Americans, and facilitate the continuous amendment of detailed rules and standards as new technologies required. Nevertheless, some members remained unconvinced that they should bend so far for the United States, and the idea was referred to the CCITT for further study. Finally, after 15 years of consideration, deformalization was enacted at the 1973 WATTC. The impact was substantial: The Telegraph Regula-

tions were reduced from 151 to 13 pages, and the Telephone Regulations from 35 to 8 (Rutkowski, 1983). What remained were mostly norms general enough for all governments to comply with. Detailed rules on each category of service were relegated to the Recommendations, which provided states with leeway in national application. The United States for the first time signed both sets of Regulations, with only one reservation.

The above leads to four conclusions. First, given vested interests, issue complexity, and a tradition of consensual decision making, it took a long time to achieve a new multilateral policy equilibrium in the ITU. "This kind of slow evolutionary change over many years has been fairly characteristic of the ITU and the associated domestic regulatory bureaucracies which coalesce under its roof" (Codding & Rutkowski, 1982, p. 37). When change did occur, it was *within* rather that *of* the regime's overarching purpose: The key principles and norms were unaltered, while the rules and decision-making procedures to operationalize them were adapted to new circumstances. Second, the deformalization underscores the sources and limitations of national power. The size and centrality of its market provided the United States with the means to induce change, but it took 40 years to win a partial accommodation of its position. Deformalization did not alter the regime's impact on the global market; it only changed the legal status of certain injunctions to increase flexibility and win American adherence. The PTTs' symmetric commitment to the regime made it impossible for any one government, no matter how powerful, to force its counterparts to alter their basic objectives.

Third, the United States government's impact on cooperation was uneven. From 1865 to 1934, its policy toward the International Telegraph Union was one of benign neglect, and its role was marginal at best, obstructive at worst. In many meetings, American delegates did little more than alienate the majority. Nevertheless, the United States conformed with the regime's main injunctions when this was necessary to achieve interconnection, and AT&T played a progressively greater role in decision making. With its accession to the modern ITU, the government became more involved and jettisoned much of the rhetoric and positions that had marred the telegraph meetings. Regime adherence became more consistent because the American institutions and international objectives now roughly approximated the global model. However, the United States still pressed the PTT majority for more general and flexible policies so as to make that adherence politically sustainable at home. Where the multilateral framework was deemed too restrictive, it established bilateral correspondent relations which deviated somewhat from the norm.

> These kinds of involvement appear to characterize what might be called the general, long-term approach of the US toward international telecommunication arrangements. It is a policy of minimizing the specificity of arrangements, diminishing the role of international organization, and effecting bilateral alternatives. (Rutkowski, 1982, p. 34)

But the asymmetry of domestic regulations between the United States and other countries was attenuated substantially at the international level, and did not disrupt the cooperative framework.

Fourth, the reverse impact of the regime on the United States was arguably stronger. While the regime preserved the right of sovereign states to govern their domestic systems as they wished, it constrained sharply the participation of American firms in the international market. If AT&T or an IRC wanted operating agreements for "landing rights" on foreign soil, they had to negotiate with PTTs committed to applying the rules strictly. And as these required that rates between two countries be the same regardless of the route taken, it was impossible to compete by offering a more efficient pathway between two counties. This cartel-like coherence precluded arbitrage, and all American firms could attain was a joint provision arrangement that divided the attendant revenues evenly between corresponding carriers. Further, the regime implicitly legitimated and reinforced monopoly control, so they could not sell services directly within a foreign market. The national and international realms were clearly delineated, and the comparatively competitive dynamics of the United States market were kept at bay by the dual force of PTT policies and the international regime.

The last observation leads to another key point. In a sense, the regime endogenized its "exogenous" operational environment by constraining and directing the technical and market changes it was to manage. The regime-sanctioned monopsonistic organization of demand was of special importance due to the high costs and time requirements of producing equipment and establishing networks. Moreover, terminals, switches, and transmission lines had to be compatible both in design and over time. Administrations' prior decisions therefore constrained what it was rational to invest in subsequently, since they needed to amortize investments before stepping up to a new generation of equipment. For example, while the telephone was adopted in some countries in the 1880s, many PTTs were slow to follow because of their sunk investments in telegraphy, and this regulatory "stickiness" was reinforced in the international aggregate. The development of multilateral standards and operating agreements for telephone in the International *Telegraph* Union did not

begin until the 20th century, which in turn limited the new technology's diffusion. When there was potential competition between old and new media, the entrenched interests of monopsonists in and out of the ITU tended to favor the former. Technical change and network interconnection were driven by the demand patterns of political institutions rather than by a competitive supply pattern in the market. The rate of change was paced by capital constraints, so the gap between invention and innovation was often wide. The substantive direction of change was skewed toward those products demanded by PTTs, such as large network switches and uniform telephone handsets, and away from potential diversity. The diffusion of change was constrained by nationalistic procurement policies and regime-sanctioned protectionism; since the major industrialized countries' markets were essentially closed, there was no dynamic global market upon which to base manufacturing plans. These equipment trends also constrained service availability. The incremental development of technology yielded only telegraph, telex, and voice transmissions that were broadly homogeneous across countries, and the pace of international diffusion was limited by the slow-moving process of multilateral coordination. In sum, the international regime shaped its own operational environment, and hence the conditions of its own reproduction. Functionalist accounts which view technomarket change as an exogenous force which determines cooperative outcomes are therefore inadequate. The century of stability was due a international interest configuration that marginalized technological, economic, and political forces which might have upset the status quo.

The Players and the Playing Field

From this background flow three observations about the organizational dynamics that shaped the *ancien* regime. First, the ITU's structure and procedures reflected and buttressed states' dominance in the policy process. ITU instruments did not endow the permanent organs, such as the General Secretariat, with powers to compel governments to behave in any particular way. Like its predecessors, the 1982 Convention began by "recognizing the sovereign right of each country to regulate its telecommunication," and subsequent provisions simply bade them to cooperate in providing interconnection and services (ITU, 1982, p. 1). Only national administrations could vote in ITU bodies. "One nation, one vote" was the rule, and while a simple majority was required for an initiative to carry, many decisions (especially in the CCITT) were taken on the basis of unanimity due to the lack of fundamental disagreement associated with the national

monopoly/joint services system. Moreover, states could issue reservations to objectionable provisions of the Convention and Regulations; and the Recommendations, while generally followed, were not legally binding. These rules preserved state interests and facilitated cooperation.

The Convention specified decision-making procedures that were exclusive as well as inclusive. Corporations and other interested entities could not exercise formal authority in the process of regime development. An active role in deliberations was accorded to recognized private operating agencies (RPOAs), which were private common carriers from the relatively small group of countries that did not have government monopolies. RPOAs were bound by ITU instruments when their respective home governments acceded to them, but did not have an independent vote. However, they could in some cases represent their recognizing governments. A few RPOAs had a decisive impact on policy, as the practical significance of their formal procedural limitations was mitigated by market conditions. AT&T was a major player in the CCITT because it developed many of the key technologies, was the largest participant in correspondent relations, and dominated American delegations. Finally, since the CCITT strived to reach consensus during the study periods, RPOA positions were accommodated before recommendations were approved at the plenaries.

The decision-making process was more exclusive with regard to other parties. In the Convention, advisory participation in the CCITT was allowed for "international organizations and regional telecommunication organizations which coordinate their work with the International Telecommunication Union and which have related activities" (ITU, 1982, p. 58). These included the specialized agencies of the United Nations, regional carrier groups, nongovernmental standards bodies such as the International Organization for Standardization (ISO), and corporate user lobbies like the International Telecommunications User Group (INTUG). An advisory role was also allowed for scientific or industrial organizations (SIOs) "engaged in the study of telecommunication problems or in the design or manufacture of equipment for telecommunication services" (ITU, 1982, p. 59). Interestingly, neither corporate users nor SIOs appear from the available historical record to have challenged with much vigor the procedures or policies of the ITU. Certainly both would have preferred enhanced roles in ITU deliberations, and presumably users would have liked lower tariffs and better operating conditions, while manufacturers would have liked greater access to foreign markets. However, monopoly control was the known universe, and technical and market conditions did not provide strong incentives to push for a more competitive system. That would change with the information revolution, as these

same players came to challenge vocally the legitimacy of the ITU arrangements with which they had lived in the past. But until that time, "while the logic of including manufacturers and private users...[was] strong, government entities are rarely willing to share international decision-making responsibilities so openly" (Codding & Rutkowski, 1982, pp. 99–100).

Second, while the ITU's formal structure provided every nation with an equal vote, actual control over regime design was a heavily weighted affair. Advanced capitalist countries held almost all of the cards: They were the main sources of the technologies requiring technical and operational standardization; of the new market dynamics and entities which occasioned regulatory deliberations; of the bulk of the ITU's budget; and of the information, resources, and expertise required for effective participation. And because of the mixed nature of their economies and the role of private firms, they had the largest stakes in the particulars of standardization and regulations. These countries could set the technical, operational, and regulatory agendas, effect policies which promoted their objectives, and prevent the adoption of objectionable initiatives. Correspondingly, governments from other regions were less central to regime development. Communist states were very active and distinctly consequential in purely distributional bargaining over the radio regime's divisions of spectrum and satellite slots, but they were less independently important in designing the telecommunications regime's provisions on network and services. On the broad parameters of international standardization, regulation, and joint service provisioning, their interests largely paralleled those of the advanced capitalist countries which took the lead. As the information revolution widened the gap between East and West and raised to the forefront issues of public-private competition in advanced systems and services, their significance in such discussions would attenuate further.

That the Third World was also of marginal significance might seem surprising. In other economic issue areas such as trade, investment, monetary, and natural resource policy, LDCs formed a fairly coherent bloc in the post-colonial era to press for international regime rules that would redistribute wealth and power. However, in the ITU, North-South distributional bargaining was confined to two areas distinct from the telecommunications regime. One was the radio regime, wherein the LDCs demanded a shift from the "first come, first served" system of allocations and assignments favored by the North to a planned system guaranteeing their access to spectrum and satellite orbital slots. The powerful North refused to accept a fundamental transformation of this overarching principle, although it did accept some changes within the regime involving the planning of certain

frequencies where its key interests were not threatened. The other was technical assistance. Beginning in the 1950s, the LDC coalition sought in the Plenipotentiaries to make development promotion a recognized and well-supported ITU function. It succeeded in the former objective, but not in the latter. Primarily under the aegis of the General Secretariat, the ITU created a number of new organs concerned with development and initiated technical training and resource transfer programs.* However, the actual levels of financial assistance were generally paltry in relation to the need, as the industrialized countries refused repeatedly to volunteer significant contributions or to accept mandatory transfers through the regular ITU budget. Moreover, there is a difference between an international organization and a regime negotiated therein, just as there is between a national parliament and its laws. Technical assistance became a new programmatic area of the ITU as a corporate actor and forum, but it did not become part of the regulatory-standardization regime through which governments coordinate their daily telecommunications relationships. To the contrary, the regime was shielded from North-South redistributional bargaining and principles. There were a number of reasons for this, but two are of particular importance here.

One reason was the nature of the functional problem and cooperative solution. International regimes for trade and money could promote redistribution by providing LDCs with preferential access to Northern markets or exemptions from otherwise binding obligations. International regimes for natural resources could promote redistribution by providing LDCs with preferential allocations of spectrum, satellite slots, ocean waterways, mineral deposits, and so on. But the telecommunications regime was designed to standardize systems and regulate services between administrations on a nonmarket basis. Neither of these problems lent themselves to redistribution, as there were no rules of competition to be skewed preferentially or common resources to be reallocated. Insofar as the regime legitimated national

* Among the initiatives approved by the Plenipotentiaries during the ancien regime were: the addition of the phrase, "foster the creation, development, and improvement of telecommunication equipment and networks in new or developing countries by every means at its disposal" to Article 4 of the Convention, "Purposes of the Union"; the expansion of the Administrative Council to include more southern delegations in organizational management; the establishment of the World Plan and regional plans for networks; the addition of development-oriented Special Autonomous Working Parties in the CCITT; and the creation of the Special Fund, the Special Voluntary Program for Technical Cooperation, the Center for Telecommunications Development, and ITU regional offices in the South.

monopolies and barred threatening international competition, the LDCs also had a stake in preserving the basic framework. The only way to incorporate concessionary transfers into the regime rules would have been to alter the accounting and settlements procedures through which administrations divided evenly the costs and revenues from jointly provided services. For example, the settlements formula could have been changed from a 50/50 to a 51/49 revenue split, with the LDCs reaping the larger share. Recommendation D.150 allowed for asymmetric settlements on a voluntary basis, and some European administrations offered such concessions to their former colonies. What is interesting is that the LDCs did not demand in a collective and consistent manner that this be the standard practice in all relations until the 1982 Plenipotentiary. There they succeeded in adding to the Convention Opinion 2, which suggested "that developed countries should take into account the requests for favorable treatment made by developing countries in service, commercial or other relations in telecommunications" (ITU, 1982, p. 344). However, opinions are not binding upon the membership, and the industrialized countries were unwilling to contemplate a firmer commitment. As we shall see, this issue has been raised anew with greater force in recent years.

The lack of action on accounting and settlements points to the other factor insulating the regime from North-South bargaining: power. As noted, the advanced capitalist countries controlled both the industry and the ITU budget, and could not be forced against their will to accept redistribution. Moreover, Northern power rested not only on these material capabilities, but also on immaterial capabilities such as the control of knowledge, information, and the policy discourse in which problems were defined and tackled. The North maintained that there was no empirical economic evidence that would justify asymmetric payments; and that in any event, the ITU was a purely "technical" body in which "policy" considerations like redistribution were inappropriate and disruptive of its mission. Indeed, development aid was referred to in ITU instruments as "technical assistance," a term preferencing training and information dissemination as opposed to resource transfers. In this context, it was difficult for the LDCs to legitimate and press a welfare-oriented agenda.

In parallel, the Third World lacked the capabilities necessary to participate effectively in the technical fora such as the WATTCs and CCITT wherein regime rules were devised. To some extent, they also lacked interest: For most, problems like the standardization and regulation of increasingly advanced systems and services appeared irrelevant to their immediate problems (Renaud, 1987). If, as of 1984, two-thirds of the world's population had no local access to basic telephony, why devote scarce money and trained personnel to discus-

sions about the latest technological advances in the North (ITU, 1984, p. 13). Hence, for example, in 1979, "44 countries took part in the 17 regular CCITT study groups; of these, only 15 could be classified as Third World, and only one had attended a majority of the study groups" (Codding & Rutkowski, 1982, p. 104). The rise of the newly industrialized countries in the 1980s has changed this situation somewhat, but the CCITT remains the almost private preserve of the rich countries, and most LDC attention is focused on the Plenipotentiaries where budgetary issues are addressed. Thus the sort of debates and bargaining dynamics associated with the New International Economic Order and New World Information Order campaigns of the 1970s did not impact the telecommunications regime. The South pursued the expansion of technical assistance programs and access rights in the radio regime, but left largely unchallenged the arrangements for international networks and services. This constituted a sort of "hegemonic compromise," in which the North offered various side payments to keep the South in the fold, deflect potential disruptions to its core agenda, and ensure the stability and universality of both the regime and the global network of national networks.

The third key point concerns the precise identities and interests of the players. Due to the technical nature of the issues, the lack of "high politics" competition, and the notion that telecommunications was a mere utility, high-level political elites showed little sustained interest in ITU activities. Most governments, as *principals*, selected PTTs as the *agents* to represent their national interests (Pratt & Zeckhauser, 1985). Most of the PTT representatives were engineers whose professional ethos and training led them to view systems planning in a technocratic perspective that took policy objectives and institutions as given. Allowing them to contemplate technological problems in a routinized and orderly setting, monopoly control comported with their shared world view and work habits. They saw themselves as specialists in a purely "technical" organization, as if state control was not "political." The result was an expert community ill-disposed to entertain subsequent corporate criticisms of the economic implications of their standards and regulations. Its exclusivity was an important source of power and stability, and was reinforced by procedures which barred the press and other outsiders from attending meetings or accessing internal documents. The rationales were sometimes bizarre; for example, the General Secretariat reportedly argued that, "the more people one admits to meetings, the greater the chance there is that an individual who might wish to harm one or more of the delegates could be in attendance" (Codding, 1984, p. 10). It strains the imagination to believe that anyone was really concerned about terrorists masquerading as researchers in order to harm engineers on the

premises. It should be noted that the ITU has become much more open and accommodative in recent years, although outsiders are still barred from decision-making fora. In sum, during the ITU's first 120 years, administrations from the advanced capitalist countries carved out a policy space in which they could shape the regime free of supranational pressures from above, intragovernmental pressures from the side, and corporate pressures from below. They organized international interdependence as an extension of the domestic sphere: on a semicorporatist basis, with themselves at the apex of an institutionalized alliance. This arrangement had the support of central governments, national manufacturers, political parties, trade unions, regulatory economists, and other groups, all of whom believed these arrangements to be appropriate at the time.

The Policy Process

These organizational attributes shaped the way ITU participants responded to the post-war information revolution. Administrations were slow to appreciate the implications of the merging of telecommunications and computers for the balance of public and private power. Up to the 1980s, ITU policies remained uncontested, and new techniques were understood as opportunities to be managed within the institutional status quo. Administrations expected exclusive control of the new markets: Advanced telecommunications and information services were slow to emerge outside of the United States, and were not anticipated to be provided independently of or in competition with themselves. Natural monopoly conditions may no longer have existed in a purely economic sense, but monopoly still seemed natural politically.

International data transmission was considered at the first CCITT plenary in 1956, and a working party was set up to devise the necessary standards. At the third plenary in 1964, the CCITT began discussing recommendations on modem standards, signalling between computer terminals, network interfaces, transmission qualities, service characteristics, operating agreements, and related aspects which would allow administrations to integrate digital components into their networks. Because the expensive construction of separate systems optimized for "value-added" services was still in the future, the initial focus was on upgrading telegraphy and telephony. Progress was slow; nobody knew where the technology would lead, so it was difficult to make long-term plans. The V Series Recommendations were not formally approved until the Sixth Plenary Assembly in 1976, by which time some administrations were already building switched data networks. These allowed PTTs to develop new services, expand their

operations, and play leading industrial policy roles in the telecommunications and computer industries. As early as 1965, the CCITT estimated that the demand for data transmission might put strains on extant telegraph and telephone circuits. Special study groups and questions were established at the 1968 and 1972 plenaries to consider the issues, and work on system design and interworking continued into the 1980s. The initial result was a plethora of detailed rules contained in the X Series Recommendations approved in 1976.

Data networks took on additional importance with the growing power of TNCs in the information revolution. During the 1960s, large users attained leased lines to develop private networks for telephone and telex between their branches and with fixed suppliers and customers, as they had done in the United States. Dedicated circuits provided alternatives to the overloaded and error-prone switched networks, and the PTTs were willing to comply so long as the flat rate charges could be set high enough to maintain revenues. Accordingly, the CCITT set rules for their allocation, denial, or rescindment. But as the merging of computers and telecommunications progressed, the significance of leased lines increased. American-based TNCs now wanted to send data and other new services across borders to increase their global efficiency and control. They could already do this within the United States, where the FCC had loosened conditions for the attachment of customer premise equipment (CPE) and service use. For a TNC user with substantial investments in Europe or elsewhere, the optimality of its network would be constrained if it lacked these possibilities between its various markets. A learning process and demonstration effect were underway. Competitors abroad began to see that the creative use of networks and information systems would enhance their own strategic positions. Soon, PTTs were confronted with a growing number of requests for flexible arrangements under which TNCs could upgrade their internal networks. Since the public networks could not yet satisfy users' demands, they found themselves making concessions which reduced their total control over the telecommunications environment. These pressures had not cohered into a broad political challenge, but were a harbinger of things to come.

Hence, the push to construct public data networks was in part an effort to preemptively capture new markets. Better to have large users employing public systems at standard rates than private circuits at flat rates. To strengthen their grip, CCITT members approved a variety of preemptive regulatory recommendations at the plenaries. Conditions were set on the use of leased lines; resale was proscribed, and sharing circumscribed; information service firms were barred from engaging in transmission functions; and on and on. Most governments applied these rules vigorously at both the national and interna-

tional levels, although the United States and later other industrialized countries began to selectively liberalize certain domestic applications in the 1970s. But the regime rules barred similar actions in the international segments, and liberalizers could not unilaterally open markets without the consent of corresponding administrations abroad. The CCITT also devised standards for the burgeoning variety of private attachments, a task that required increasingly close contact with the ISO and related private standards organizations in computers and electronics. Past jurisdictional boundaries were eroding, and the ITU found itself sharing turf with other multilateral agencies with different social constituencies and agendas.

Growing technomarket diversification raised new problems for administrations. Technically, launching new services often required separate, dedicated networks. End users had to buy equipment and secure connections for each specialized offering, while carriers had to standardize an expanding range of systems and devise elaborate interfaces. As technological progress continued, administrations could look forward to a continuous and cumbersome process of replanning to accommodate change and maintain interconnectivity. Economically, establishing service-specific networks involved massive R&D and expenses. Proliferation generated the kind of redundant facilities that monopoly provision was supposed to avoid. Further, it was not always clear that there would be sufficient demand to make a given service profitable and help recover previous investments. PTTs aspiring to offer the full range of technically feasible services were faced with difficult choices. Politically, pressures for liberalization seemed poised to grow, especially when users could argue that switched networks were insufficient for their increasingly advanced, specialized needs. Public data networks were a viable response in some cases, but not others. To retain control, PTTs had to adopt restrictive policies which could not be justified on purely technical grounds. Clearly based on self-interest, such policies seemed likely to become more controversial and difficult to defend. The capacity and flexibility of national systems needed to be enhanced significantly to stem growing corporate pressures.

The key PTTs and their national manufacturers devised an answer: the integrated services digital network (ISDN). The ISDN was conceived as a unified, end-to-end "digital pipe" that could carry all traffic regardless of its technical requirements. When the concept was introduced in the 1973–76 study period, CCITT planners had only a vague vision and little sense of how it could be implemented. Indeed, "when the international systems designers first began to meet and discuss ISDN, they frequently represented it with nothing more than a simple cloud-like diagram" (Rutkowski, 1985, pp. 40–41). Following

the standardization of public data networks, the 1976 plenary proposed that the CCITT undertake formal studies of the ISDN. As the discussions proceeded, participants came down from the cloud and began to develop the details of the network's components. At the 1980 plenary, the CCITT adopted Recommendation G.705, which set the guidelines for future study and development. Among these were that the ISDN would: evolve from digital switched networks, comprise services compatible with 64-kbit connections, incorporate computer intelligence for key functions, be accessible via a layered set of protocols that might vary from case to case, take several decades to construct, and be interworked with existing networks in the transition period (Rutkowski, 1985, pp. 40–41). These principles charted the course for the 1981–84 study period, and formed the basis of what became the I Series Recommendations. It is beyond the scope of this chapter to discuss the ISDN's technical attributes, but a few comments on its political-economic implications for the regime are relevant here.

From a technical viewpoint, integrated digital networks made sense. However, the connotation that "integration" meant not only interoperability and interconnection, but also PTT provision of all future services, was obviously controversial. By the early 1980s, monopolies were under growing attack and liberalization partisans were quick to see the ISDN as a PTT effort to preclude competition. The very term "ISDN" had a monolithic ring which suggested that each country would have one comprehensive network, so these players dubbed it, "Innovations Subscribers Don't Need." One critic even argued that the ISDN was designed with a "hegemonial" purpose by PTTs given to "benevolent authoritarianism" in the name of redistributive social policy (Noam, 1986b, pp. 45–46). And indeed, a unified system could benefit small business and residential users, who were unlikely to invest in advanced private systems. The ISDN would also be good for trade unionists working for national carriers, and for protected manufacturers seeking exclusive, long-term contracts for a new generation of systems. Above all, it was desirable for the carriers, who could defend their extant monopolies while expanding their roles in both new communication and information markets, and in industrial policies for "high-tech" goods. But was it in the interest of the large corporate users and new suppliers seeking competitive entry and control? The PTTs did not address this question publicly. In the CCITT, new design possibilities were a sufficient rationale for a sweeping upgrade of switched networks. When pressed, the PTTs asserted that telecommunications remained a natural monopoly, and that ISDN provided the economies of scale and scope needed to make new services viable. The ISDN allowed PTTs to at least claim competence in fulfilling all new service requirements, and to chal-

lenge the technical rationales for separate private systems. It was a potentially centralized solution to the growing challenge of TNC power. Of course, the ISDN did not have to be implemented in this manner; it could instead have served as a flexible infrastructure within which PTTs allowed varying degrees of private competition and control. However, some proclaimed their intention to retract leased circuits and use the ISDN to push corporate users back onto public networks, and the suspicion was widespread among corporate managers that this would happen elsewhere as well.

In the early 1980s, the most controversial issue was where the computerized intelligence would be located. If it was in a customer's CPE, then the network would simply serve as a medium for user-defined applications. If instead the network switch could perform all the intelligence functions, private CPE would play a lesser role. Attention therefore focused on the boundary line between the network and the customer's premises. The United States wanted standardization only at interface point U, at the external boundary of the user's connection to the network. The PTT majority wanted standardization to extend all the way to the S/T interface, or farther out into the network. While U interface standardization would allow CPE to control intelligence functions, the S/T option would favor the network. The CCITT proceeded with a standard at S/T, thereby eliciting widespread corporate concerns that customers would be forced to rely on the PTTs for all their needs, and that the potential market for specialized attachments and services would be stunted.

In addition to the determinacy of state interests, three other observations flow from the above. First, the CCITT process was technically effective yet slow. Information-age issues were more complicated than those of the past, and the regime-making states wanted to promote the standards and approaches of their national administrations and manufacturers. This yielded substantial coordination problems, and some study questions raised as early as 1958 were not answered with recommendations until 1976. But the dynamism of the computer and microelectronics industries was subsuming the once sleepy world of telecommunications, as new systems emerged rapidly and competitive pressures spilled across sectoral boundaries. Administrations and manufacturers were increasingly loath to forestall network development until multilateral agreement could be reached at the quadrennial plenaries. Hence, from 1968 recommendations with only *provisional* approval of the study groups were sometimes used to guide national construction programs. This provided greater flexibility, but the incremental codification of rules favoring public procurement and control still constrained R&D. We cannot test the counterfactual thesis that innovation would have been faster in a

market-driven environment, but close observers on both sides of the regulatory debate concede the point.

Second, a shift occurred between the digitalization of telegraphy and telephony and the development of public data networks. Historically, PTTs and RPOAs had proceeded from the "bottom up" with national R&D and only afterwards worried about international standardization; this was true of data transmission over extant networks. As one CCITT participant has noted, "If the problem of international interconnection had been considered earlier in the national development of such networks the tasks of the CCITT in the past would have been very much easier" (Okabe, 1978, p. 233). In contrast, ISDN planning proceeded from the "top down," as the CCITT devised standards in parallel with and even prior to national programs. The top-down approach underscored administrations' growing desire to collectively shape the rate, direction, and diffusion of technomarket change through anticipatory planning. By developing recommendations before the fact, they hoped to avoid the arduous task of interconnecting incompatible systems, and to ensure that construction programs would yield guaranteed returns on investment. Third, the growing stakes in a rapidly expanding marketplace were beginning to render the standardization process more conflictual than in the past. At times the CCITT had to resort to issuing dual or multiple standards because national preferences could not be coordinated. This was the case with videotex, and American insistence on the U interface for ISDN may effectively constitute the same outcome (Savage, 1989, pp. 201–210). At the same time that easy end-to-end interconnectivity was increasingly being demanded by corporate users, PTT and manufacturer efforts to control new markets were at times pushing in the opposite direction.

The Product

The *ancien* regime's overarching social purpose was to balance sovereignty with international interconnectivity and joint service provisioning. These objectives were almost universally interpreted as requiring monopoly control at the national level—nowhere did ITU instruments mention competition as a means for their achievement. To understand how national interests were reflected in the regime, we next present a snapshot of its major regulatory injunctions as codified in its three key instruments circa the mid-1980s. The definitive principles and norms below have, in one formulation or another, been contained in the various Conventions and Regulations negotiated since its inception, and the detailed rules for new networks and services contained in recent Recommendations derive logically from

them. As such, the following serves as a roughly accurate depiction of the regime in place from 1865 to the late 1980s.

Article 4 of the 1982 Convention included three general principles derived from the ultimate purposes of sovereignty and interconnection. These were the need for progressive and coordinated technical improvement of facilities to expand network capacity; efficient systems operation to keep user rates as low as possible, while "taking into account the necessity for maintaining independent financial administration; " and services to be made generally available to the public as far as possible (ITU, 1982, pp. 3–4). The Convention also contained other principles of state control over national extensions in its General Provisions Relating to Telecommunications. Among these were that ITU member governments should ensure the right of the public to communicate via public correspondence on a nondiscriminatory basis; could stop any transmission which appeared contrary to their laws, national security, and public order; could suspend transmissions indefinitely subject to notification of other members; accepted no responsibility toward users, particularly as regards claims for damages; should ensure the secrecy of private transmissions, save where violations of national laws and international treaties were involved; should provide the best technical means of public correspondence at their disposal, in accordance with the procedures experience had shown to be best; could allow the use of secret language in private telegrams, and should ensure the right of governments to use secret languages (ITU, 1982, pp. 17–22). Clearly, the law codified here was primarily international, not transnational; its subjects were nation-states, not the global public. While users had a general right to correspond, this guarantee pertained solely to public networks, and administrations could determine the conditions thereof. TNCs or other entities had no right to provide or utilize alternative facilities and services. Similarly, the provisions on the stoppage, suspension, and secrecy of transmissions provided administrations with broad leeway and control. All these principles were established when telecommunications meant telegraph, telex, and telephone services under monopoly control, but remained in place even as competition in advanced communication and information services, equipment, and private networks began to spread. The regime's operational environment was changing while its overarching purposes and provisions were not, a fact that would later generate challenges from the partisans of global liberalization (Naslund, 1983).

The 1973 Telegraph and Telephone Regulations, which remained in force until 1989, included provisions which exhorted members to comply with the Recommendations in implementing them; required that certain classes of intergovernmental transmissions be carried;

allowed administrations and RPOAs to place international circuits at the exclusive disposal of users in those relations where circuits remain available after the needs of the public services had been met; allowed members to enter into bilateral and regional agreements; required that the accounting rates for financial settlements between countries be the same regardless of routing; and encouraged members to make efforts to avoid too great a dissymetry between the charges applicable in each direction of the same connection (ITU, 1973, pp. 6, 11). The Telegraph Regulations included the additional provisions that administrations and RPOAs could refuse private transmissions in secret languages, but must allow these telegrams to pass in transit to another country; could require users to provide their secret codes; should stop transmissions to reforwarding agencies serving third parties in attempts to avoid full payments to administrations for routing; and must prohibit any rebates on the officially agreed rates (ITU, 1973, pp. 7, 9, 12). These clauses restricted competition, but were more permissive than those before deformalization.

It is difficult to provide a representative overview of the Recommendations' key rules. The principles and norms of the Convention and Regulations were general enough to remain in place after infrequent meetings, but the Recommendations evolved continuously with technomarket change. They were complex, numbered in the thousands of pages, and covered in minute detail a vast array of technical, operational, and regulatory issues. Nevertheless, the major nontechnical provisions relevant to regulation, competition, and control are found primarily in the D Series, the 1984 Red Book version of which is examined here.

The rules of facilities were the most restrictive, as the underlying network was both the main source of PTT/RPOA power and regarded as fundamental to national sovereignty. But the steady expansion of user demands for leased lines in the 1960s and for specialized networks, services, attachments, and interconnection rights thereafter compelled the CCITT to spell out conditions buttressing the primacy of public networks. For example, Recommendation D.1, Section 1 included provisions to the effect that leased circuits were generally to be made available only after the needs of public services were met; administrations could withdraw such circuits when they deemed it to be in the public interest; leased circuits were generally to be made available only after the needs of public services were met; administrations could withdraw such circuits when they deemed it to be in the public interest; leased circuits could be used only between fixed points for a designated purpose relating to the customer's nontelecommunications business; customers could not resell excess capacity; equipment connected to private circuits had to meet conditions specified by the

administration; and administrations should refuse to provide leased circuits where the customer's usage would infringe on the provision of public services to others (ITU, 1985, p. 6). Recommendation D.1., Section 5 on private networks constructed by linking leased circuits contained similar provisions. For example, switching and transmission were to be the exclusive functions of administrations, and private networks were only to be allowed when they could not meet a customer's specialized requirements; administrations reserved the right to provide such networks, on an exclusive basis if they chose, and accepted no responsibility for the quality of transmissions; users could not make changes to the facilities without the administration's consent; and the interconnection of two or more private networks required the administration's approval (ITU, 1985, pp. 9–10).

The interconnection of private leased circuits to public networks was covered by Recommendation D.1., Section 6. Among its provisions were that administrations could choose whether to authorize such interconnection, subject to the consent of the other relevant administrations; had the right to refuse interconnection on their side of the circuit; should ensure that transmissions pertained solely to the circuit's approved purpose, and was sent only to approved public network subscribers; could levy special charges for public network access; should not consider financial claims resulting from failure in the public networks to which a private circuit is connected; and were not obliged to guarantee the quality of transmission to or from the public network over a leased circuit (ITU, 1985, pp. 10–11). Recommendation D.1., Section 7 covered the use of private circuits in conjunction with CPE or data-processing centers to provide information services to other parties. A key provision here was that private leased circuits terminating at one end in a data-processing center were to be allowed public network access only if the information was not exchanged on a store-and-forward basis; the data-processing center did not switch and transmit messages between users; the list of connected users was provided to the administration on demand; and the participants did not provide a telecommunications service (ITU, 1985, p. 11). Finally, Recommendation D.6 on the shared use of facilities by closed user groups held that administrations could exceptionally provide facilities for uses not authorized under other recommendations which were not met by existing public services until such offerings became available; and the user groups could not be engaged in the telecommunications business (ITU, 1985, pp. 22–23).

These and other provisions of the D Series were intended to preserve the *ancien* regime's traditional objectives in a rapidly emerging global information economy otherwise characterized by increasing corporate control. Large firms were recognizing the competitive bene-

fits of strategically developing and applying new systems and services, and in some countries—especially the United States—were incrementally winning the right to do so at the national level. Things were different at the international level, where the almost all ITU members remained committed to a strict interpretation of the Convention's and Regulations' incontestable mandate of providing the general public with global interconnection and joint services. What was not incontestable from a corporate standpoint were two assumptions behind that interpretation. The first was that international private networking and services were a threat to the technical and economic prerequisites of interconnection. In the 1980s, TNCs would increasingly argue that both private joint and end-to-end services provided on a competitive basis were viable alternative means of achieving the same goals while simultaneously meeting unsatisfied corporate requirements. Private and public systems were complementary, not contradictory as the administrations asserted. Second, while the regime's formal jurisdiction was purely international, the vast majority of PTTs were also vigorously applying the same restrictive rules within their national networks in order to preserve their monopolies. The ITU's instruments did not explicitly require monopoly control, as domestic regulation was a sovereign choice. But this was certainly how most members chose to organize their systems, and CCITT Recommendations were routinely taken as both a guideline and justification of national regulations. As such, overturning these rules would become a primary demand of the new corporate interest configuration in the 1980s.

The role of recommendations on equipment was complex. Again, the regime's stated purpose was solely to promote interconnectivity and joint service provision: How administrations chose to compose their networks and the extent to which they allowed competition in the hardware market was entirely up to them. Since its instruments contained no explicit statements on the issue, one might conclude that the regime did not cover the regulation of equipment markets. But in practice, the regime's standards and other provisions had trade-enhancing or distorting effects that were clearly understood by all the participants and an essential if unacknowledged part of the underlying political bargain among its members (Cowhey, 1990). Advanced countries that could produce equipment were free to protect their markets, while those which could not were free to import; the result was a "global" market open to entry only at the margins.

Two types of recommendations were relevant here. First were those establishing conditions for investment in and control over network components. Because administrations did not want to acknowledge economic issues and interests, they never used terms like "trade" or

"competition." But for example, Recommendation 1, Section 5 reserved most switching and all transmission for administrations, meaning only they could own, operate, and hence purchase central office switches and related main network elements. Users could not, so producers could not sell it to them. In contrast, the arrival of CPE required new regulations. In the 1970s, many administrations refused to allow such attachments due to technical and economic concerns, but by the decade's end, public networks were upgraded to lessen the threat of technical harm, and domestic producers in the advanced capitalist countries became more competitive with the American manufacturers which had dominated the market. Hence, regulations on terminals, modems, PBXs, and so on were loosened substantially, making this perhaps the most dynamic and competitive market niche under the *ancien* regime. The many recommendations relating to CPE reflected this trend. In general, they did not say that "users may or may not attach items xyz," but rather left this choice to administrations. But they say that the attachment, upgrading, and maintenance of CPE required authorization, and type of approval and related procedures varied widely. Moreover, Recommendation 1, Section 5.7 stated that administration could require that some of the equipment used be located on their own premises, and/or be provided by them (ITU, 1985, p. 10). In short, the rules allowed PTTs and RPOAs to determine both the extent of foreign producers' market access and the users' latitude in applications.

The second relevant type of rules were technical standards. The Recommendations contained a multitude of standards for equipment design, operation, and interconnection for telephone (i.e., Series E, M, P, and Q), telegraph (Series F, H, R, T, and U), and data (Series I, V, and X) networks. In each case, interfaces, multiplexing, signaling, switching, transmission speeds, communication between diverse terminals, and so on were coordinated to promote compatibility and basic quality levels. While the range of topics covered is too broad to go into here, a key point must be underscored: These standards applied first and foremost to the internetwork gateways of the global system, rather than across the full range of equipment employed in national networks. The recommendations were designed historically to promote both interconnectivity and the protection of national markets, as the standards employed within the latter were often incompatible across countries. However, the ISDN would later draw CCITT standardization deeper into national systems, thereby raising the stakes in the process.

Finally, the Recommendations had a distinct impact on service markets. Who could provide and utilize which services on what basis was determined by the above rules on networks and equipment. In

general, basic services were the exclusive domain of administrations, while markets for newer value-added services were shaped by the provisions on leased lines, private/public network interconnection, resale and shared use, and so on. The level of openness for value-added services was much less than for CPE, but the onset of liberalization was roughly similar. Fears of private cream skimming generated opposition to competition when the new services appeared, but in the early 1980s a few PTTs began to open those domestic market segments in which they or other national firms were competitive. Still, they could not allow such services to be provided from their territory to another country without the latter's consent; the regime precluded unilateral liberalization, so advanced private services thrived primarily among a few countries (e.g., the United States, Britain, and Japan) who were willing to jointly authorize them. In contrast, to the extent that a boundary line between information enhancement and transmission was identifiable, data services remained formally unregulated and continued to grow despite telecommunications restrictions, although probably less rapidly than they would have absent regulation.

The Recommendations dealt at length with financial aspects (e.g., the collection charges or tariffs levied on customers) and the accounting and settlements procedures employed between national correspondents. Charges and accounting were so important that some general norms were contained in the treaty-level Regulations, while the detailed rules needed to operationalize them were in the D Series. A key guideline was Recommendation D.5, which held that administrations' income for the totality of services offered should cover all technical and administrative costs; the rates should not foster "harmful" competition between services; for political or social reasons, the rates for certain services could be below the cost of their provision; administrations should protect their overall financial balances by charging above cost for some services so as to cross-subsidize those charged below cost; and the "increase factor" in such cases should depend on the value of a service to a given user as determined by the administration (ITU, 1985, pp. 21–22).

Tariffs comprised two elements: access charges, which included the initial fee for subscriber hook-up and regular rental payments for terminals and/or connection; and utilization charges, which depended on the time, distance, and duration of calls and for some services, additional variables. While the D series established formuli for tariffs, variations in access charges and in the means of calculating utilization charges often resulted in asymmetries such that "charges for a telephone call between two countries may vary by as much as 100% without either of the countries concerned departing from the CCITT

Recommendations" (Neumann, 1987, p. 389). To avoid interservice competition and recover network costs, the methods used in setting rates also varied across services. Recommendation D.1 did not explicitly endorse a set means of tariffication for leased lines, but most administrations provided these to TNCs at flat monthly rates. In contract, Recommendations D.6 on shared use by common purpose groups, D.10 on dedicated public data networks, and D.11 on packet-switched public data networks all provided for tariffs which were volume-sensitive, and hence more costly for large users. The rules also allowed for additional charges based on service and switching class, additional user facilities, transmission routes, bit rate and bandwidth, and so on.

While the rules on charging provided administrations with leeway, those on accounting and settlements were more rigorously harmonizing. It was acceptable for a carrier to impose high charges on its customers, but not for it to profit in relations with another carrier—this was the fundamental bargain of the joint services regime. Accounts were to be settled on a bilateral or regional basis, and in principle, revenues were split 50/50 between sending and receiving administrations. If one transit country was involved, the split was 40/40/20; if two were involved, it was 40/40/10/10, and so on. If the facilities and costs on either side differed substantially, administrations could use a different formula. The key was that traffic units were added up on a monthly basis, and the carrier whose outbound traffic exceeded its inbound traffic reimbursed its counterpart to achieve equity. As we will see, asymmetric deregulation in the 1980s would upset the political bargain underlying the arrangement. Figure 1 summarizes our overview of the *ancien* regime's major regulatory provisions:

Figure 1. Principles, Norms and Rules of the *Ancien* Regime

Overarching Purpose: National Sovereignty balanced with International Interconnection and the Joint, Noncompetitive Provision of Services, Preferably by National Monopolies

Convention

*Modernization of facilities and services
*Efficient operation and maintenance
*Services generally available to the public
*Right of the public to communicate, normally in secrecy
*Stoppage, suspension, monitoring of transmission if national security threat
*Special arrangements allowable if not of general concern

Regulations
*Compliance with Recommendations encouraged
*Priority of transmissions related to government and safety of life
*Leased lines only when public requirements have been met
*Common accounting rates regardless of route, reduce assymetries in charges
*Restrict harmful competition from third-party traffic

Recommendations
*Provision and conditions of leased lines restricted
*Leased lines only for business of the customer, upgrading restricted
*Interconnection of private networks restricted
*No private resale of excess capacity; shared use restricted
*No private infringement on functions of Administrations
*Exclusive control of circuit and message switching, transmission
*No responsibility for transmission quality regarding private circuits
*Interconnection of private and public networks, subscribers restricted
*Data service firms may not perfom telecommunications functions
*Customer premise equipment restricted, acceptable pending type approval, authorization etc.
*Standardization of equipment in international segment
*Value-added networks and services restricted
*Cost or value-based pricing, cross-subsidization acceptable
*Rates unaffected by routing
*Common accounting rates and settlement procedures

ASYMMETRIC DEREGULATION AND REGIME TRANSFORMATION

Divergent Interest and International Instability

Even as delegates to the 1984 Plenary Assembly were approving the above recommendations, the ground was shifting rapidly under their feet. Pressures unleashed earlier in the United States were spilling across national borders, resulting in a growing and unsustainable discrepancy between the international regime and the operational environment it was meant to govern. Those pressures led to change first and most forcefully at the national level, as many governments groped toward new deregulatory mixes of public and private control,

but they also began to eat away at the formerly firm and symmetric commitment of ITU members to a uniform and restrictive regime for international correspondence, and by the late 1980s had gathered sufficient force to result in its transformation.

Some analysts see technological change as the driving force of this global liberalization, but as a causal explanation, technological determinism remains suspect for at least four reasons. First, technologies are social constructions generated by specific institutional environments and actors; to anthropomorphise and argue that "the technology requires" liberalization obfuscates the interests involved. New techniques expand the range of feasible actions to choose from, and may even make one option more cost effective than another. But the choosing is still key, and in our case the relevant choices were those of corporate managers seeking to advance specific types of objectives in relation to their competitors and state regulators which determined new telecommunications technologies' local effects. Second and relatedly, technologies are also in a sense social relationships, and TNCs' ability to employ new systems and services was at least in part dependent on the decisions of those regulators. In view of the industry's history, it seems strained to argue that states suddenly became powerless in the 1980s. For example, one observer has asserted that "with the advent of super-microcomputers and fast-packet processors, there is no way governments can maintain control over [network-based] data processing even if they try. They can barely maintain control over telecommunications" (Solomon, 1987, p.3). But this is true only insofar as governments permit the use of such systems in the first place, or are unwilling to pay the political and economic costs of denying such use. Administrations faced few constitutional barriers to prevent them from adopting restrictions; indeed, their authority to do so was enshrined in ITU instruments and reflected in the ISDN concept. The real issue is how governments assess the relative costs and benefits of allowing companies to supply and use new systems and services in particular ways, and that is a political-economic process involving pressure and power. Third, consider the primary source of technology-driven proclamations: The claim that institutional change "must happen" because of new innovations has become a hallmark of corporate speech for a reason. If technology renders regulation "obsolete" and "counterproductive," it is a short jump to the proposition that the only "pragmatic" response is liberalization. Finally, if technology was an adequate independent variable with which to explain deregulation, then the global diffusion of new telecommunications systems and services in the 1980s should have elicited the same responses across countries, rather than the sort of asymmetries studied in this volume.

If strategies and institutions shape technological choices and effects, one might argue that global deregulation is explained by relative state power. By this account, the United States government employed its disproportionate power to force open foreign markets through bargaining, trade threats, preferential arrangements with liberalizing countries, and so on (Krasner, 1991). These instruments of state power were sometimes important, as the government had behind it large firms prominent in the standardization process and a huge market central to correspondent relationships. But as before, it was confronted with an entrenched PTT majority that rejected many of its demands, and with regime rules that limited the scope for unilateral initiatives. Moreover, the Reagan Administration's tone and style did little to convince other states that liberalization was in their interest as well, and its negotiators were at times less than effective. Certainly the government helped to put and keep liberalization on the agenda, but its efforts were not a sufficient condition—perhaps not even a necessary condition—of change, without which nothing would have occurred.

The driving force in the transformation of national and international telecommunications institutions derives from the economic sphere. It has been observed that capitalism "is less notable for how it manages extant institutions than for how it creates and destroys them," and that is true here (Schumpeter, 1942, p. 84). The advanced capitalist state's success in promoting private capital accumulation helped to undermine the legitimating conditions of monopoly regulation. The constraining parameters of the institutions which nurtured telecommunications in an earlier era were bust by subsequent processes, thereby reversing the historical relationship between the political and economic spheres. The evolution of capitalism from one stage to the next gave rise to new technical possibilities, transaction patters, and market structures which altered corporate interests regarding regulation. The post-war expansion of firms in many industries into unfamiliar and often highly competitive markets placed a premium on the comprehensive management of information and services to ensure control and growth. This resulted in a learning process, in which TNC users in particular came to see the traditional regulations as antithetical to their interests (Schiller, 1982). Arrangements which favored the interests of administrations at the expense of such users, who comprised a vastly larger grouping central to macroeconomic development, became unsustainable economically and politically. At the same time, the very success of public network development and service penetration increasingly negated the logic of natural monopoly regulation and made it difficult to defend. "The driving force for the restructuring of telecommunications has been the phenomenal growth

of user demand for telecommunications, which in turn derives from the shift toward [an information and] service-based economy" (Noam, 1987, p. 33).

While users' changing interests were critical, it is unclear whether they could have overturned a century-old regulatory tradition on their own. But they did not have to, because technical possibilities provided other firms with similar incentives. In particular, strategic decisions to pursue the development of telematics and the integration of microelectronics generated demands for change from new entrants in systems and services, and even from traditional telecommunications, computer, and electronics manufacturers. Thus was born a new interest configuration of users and suppliers which acted as a sort of "shadow government" that challenged at every turn the corporatist "postal industrial complex" of PTTs, and protected manufacturers and their political supporters (Noam, 1986a). This coalition first emerged in the United States, where decentralized political institutions, a huge and diverse market, and Defense Department support for private innovation combined with other factors to stimulate market forces. It was instrumental in convincing the FCC to begin incremental reform with the 1959 "Above 890" decision, and figured prominently in a series of later decision (Horwitz, 1989; Schiller, 1982). The subsequent transformation of international telecommunications arrangements was most directly a function of the slow but steady globalization of the new interest configuration and its preferred conceptualization of the emerging information economy.

The restructuring process was multidimensional, and consisted of more than pressure group politics. The new coalition's success was based not only on raw market power and political lobbying, but also on seemingly compelling ideas. If its claims had remained fully equated only with the profit motives of particular firms, governments might have remained unwilling to give in to its demands. The linkage had to be broken to provide a receptive conceptual environment for the reevaluation of national interests. It would be a mistake to suppose that the FCC or subsequently liberalizing administrations acted simply as the compliant instruments of big business; policy makers had to be convinced that competition was desirable for their national economies as well. The battle had to be waged at the level of legitimating policy discourses, and victory required a somewhat consensual reconceptualization of the technomarket reality to be governed. The redefinition of telecommunications as an industry characterized by technological abundance and tradelike transactions, central to the dynamism of network-based manufacturing and service sectors, undermined the intellectual foundations of monopoly regulation. The notion of potential economic dynamism stunted by regula-

tion was gradually elaborated by an expanding and diverse expert community of academics, industry insiders, and other observers from around the world, who analyses were taken to be more "objective" and not tainted by direct interests in policy outcomes. In the press, conference circuit, and negotiations, "PTT traditionalists" were depicted as "out-of-touch" neo-Luddite dinosaurs, not simply because big business said so, but also because there were plausible arguments that they stood in the way of new wealth creation. This combination of changing corporate interests and pressures and a new intellectual landscape proved potent.

Up to the 1980s, America's liberalizing deregulation did not have direct and immediate effects on the international sphere, as the new interest configuration focused primarily on opening the domestic market. This localization of priorities was mirrored in the federal government, which had yet to identify global liberalization as a key objective of its foreign economic policy. While administrations abroad regarded the American process with fascination, they deemed it irrelevant to their own circumstances, and the private members of their corporatist postal industrial complexes concurred. Further, the ITU instruments clearly distinguished between national and international jurisdictions, and pertained only to the latter. The Americans could destroy their network if they pleased, but international services remained jointly provided with monopolists abroad. Competition was not only not contagious, it was not yet even an issue.

However, American deregulation had indirect, medium-term effects abroad. The relaxation of political constraints invigorated the American technomarket environment, as the differentiation of supply and demand fed waves of new innovations and applications. In turn, the creation of new techniques provided corporate strategists with incentives to reconsider their international positions. By the late 1970s, American-based TNCs had begun to press foreign PTTs to provide them with at least an approximation of the leeway they were achieving with the FCC. They did so individually and collectively, through such trade associations as INTUG and the International Chamber of Commerce (ICC), and in both bilateral and multilateral fora. They also provided a booming business for American consulting firms, which spewed forth a seemingly endless stream of high-priced reports about how bad things really were out there. That the sky was falling was further evidenced by the concurrent preemptive debate over transborder data flow (TDF) restrictions (Drake, 1993). They were trying to establish a normative presumption that competition was equivalent with western values of freedom and the natural state of affairs, whereas regulation was an unnatural contrivance contrary to those values which could be justified only exceptionally. Getting the world to

accept this presumption would broaden and change the criteria by which any given policy was evaluated, thereby placing administrations in a politically untenable bargaining position.

Against this backdrop of TNC activity, the American government launched a multipronged diplomatic offensive seemingly designed with maximum friction in mind. Reagan Administration officials marched into numerous multilateral negotiations and conferences to give the sort of "magic of the marketplace" speeches once reserved for Lion's Club conventions. The U.S. Trade Representative (USTR) joined forces with an emerging community of service industry specialists to argue that jointly provided services in fact constituted trade, and as such should be covered by the General Agreement on Tariffs and Trade (GATT) (Aronson & Cowhey, 1988). The Commerce Department released an inflammatory report blasting foreign practices and questioning whether the United States should leave the ITU (NTIA, 1983). Even the FCC entered the fray. It had previously issued a number of decisions—eliminating for IRCs the voice/record and domestic/international dichotomies, extending Computer II's provisions on VANs to international service, and so on—which partially opened up the American side of the half circuit (Frieden, 1983). In doing so, the commission was mindful that its jurisdiction was purely domestic, and that the assent of foreign administrations was necessary for new joint services. But in 1980, it announced unilaterally its intention to extend resale and sharing to international circuits, despite the fact that almost every administration restricted these functions in accordance with the Recommendations. CCITT Director Leon Burtz promptly sent a strongly worded letter noting the "surprise" and "deep disappointment" within the ITU, stating further:

> It seems to me an extremely dangerous situation when one country, and what is more, the leading country with regard to the number of subscribers, the extent of its services and its telecommunications technology, can help to undermine the work of the CCITT. (Schiller, 1982, p. 185)

Many PTTs sent similar messages, some of them declaring that if the FCC proceeded, they would in turn revoke TNCs' access to leased lines. Frantic, American businesses bombarded the commission with calls to reconsider, and it retreated with egg on its newly extended profile.

This episode underscores some of the factors which hindered the globalization of new interests and ideas at the decade's outset. Grudging adherence to the theory of natural monopoly remained strong, no coherent conceptual alternative had yet emerged, and the postal industrial complex was embedded in the fabric of domestic polities

abroad. Further, that it was primarily Americans rather than indigenous firms leading the charge deprived claims about the necessity of change of any generalizable legitimacy as an accurate and unbiased depiction of a new reality. This made it easy for PTTs to conclude that the emerging discourse about "restrictive trade barriers," "abuse of dominant position," and "excessive regulation" reflected the interests of large American firms poised to swoop down on their presumably vulnerable markets.

The presumption of vulnerability derived from many sources. For example, while Europe had a number of prominent telecommunications equipment manufacturers, years of reliance on nationalistic procurement and trade policies deprived them of the experience and commercial orientation needed for open global competition. In the computer and microelectronics industries, efforts to foster competitive "national champions" had generally failed. In advanced services, monopoly practices slowed the creation of private firms capable of taking on American entrants. Similar problems existed in varying degrees in other countries, North and South. Moreover, the prevailing intellectual winds in Europe and the Third World were blowing in the opposite direction. In the early 1980s context of stagflation and growing surplus capacity in traditional industries and the lack of competitiveness in the "industries of the future" generated *info-angst* about the broad structural changes underway. This was heightened by a recognition that telecommunications, as a key infrastructure, and information, as a key factor of production, were becoming ever more central to competitiveness throughout the manufacturing and services sectors. A prominent report to the French president adopted a wholistic approach to the emerging complexity of the information economy, and argued that failure in the "telematics sector" would have profound implications across many user industries (Nora & Minc, 1980). The Commission of the European Community (EC) agreed in its 1979 "Dublin Report:"

> Control over the "telematics system" as a whole is slipping away from Europe to an ever-increasing extent...domination of the telematics industry by the United States and Japan would, in the more or less short run, result in:
>
> —the final loss of European control over an essential field;
>
> —damage to the competitive position of the Community, both in Europe and in the rest of the world;
>
> —the loss of the potential for new jobs, which should compensate for loss of jobs caused by the new technologies;
>
> —a reduction in our independence in decision-making in all walks of public and private life. (EC, 1979, p. 12)

Many governments began to consider and sometimes enact regulatory, trade, and industrial policies for telecommunications and information that the new interest configuration damned as protectionist. Hence, the early 1980s were marked by growing discord and drift in bilateral and multilateral policy discussions. Within and without the ITU, PTT engineers were aghast at being described as undemocratic cartel managers conspiring against the free market, since commercial considerations had never been an acknowledged criteria for evaluating standards and regulations. They were doing as they had always done, but were suddenly being castigated for it.

The emerging gap between the United States and the rest of the world rendered problematic for the first time the principles and efficacy of the international regime. If it widened into a gulf, the United States might have reduces its involvement in and compliance with those ITU processes and rules deemed contrary to its new objectives. Technically, this would make if difficult to devise international standards for new systems and services. Economically, it would increase the costs of achieving interconnection, as special operational arrangements would need be devised on an ad hoc bilateral basis; and provide American-based TNCs with incentives to attempt to bypass regulations in search of "gray markets." Politically, the disagreement was beginning to undermine the universal legitimacy of the assumption that national monopolies were a necessary or desirable basis for building international interconnection. Further, the cracks in the dike could turn into a flood. Finding themselves competing with invigorated American counterparts, other states might be tempted to follow suit and defect from the historical consensus in order to attract TNCs to their turf. If they were pushed into a liberalization sweepstakes, regulatory arbitrage could spread and the symmetry of national regime objectives would decay. In this light, the United Kingdom's early decision to bilaterally open certain international market segments with the United States was viewed almost as an act of betrayal by some European administrations. Britain wanted to promote domestic competition, attract network-based service industries, and deepen its role as a hub for transatlantic traffic, and the conditions it offered businesses were both more permissive than those on the continent and contrary to the spirit if not the letter of some CCITT rules. Some European PTTs sought to keep her in the fold, lest their own policies appeared overly restrictive in comparison. Japan also began a somewhat similar path to bilaterally negotiated change in certain relations.

If national asymmetric deregulation had continued to spread to international correspondence in this matter, the result might have been regime decay, rather than transformation. Retention of the general principles and social purpose which defined the *ancien* regime

in the face of consequential defections from the United States, Britain, Japan, and others would signify a disjuncture between collective commitments and actual practice. Effective regimes require coherent compliance lest a minority cause problems for the majority, and the ITU had no means to compel conformity. The incipient spread of asymmetric deregulation to international connections implied that a new agreement would be necessary, as the regime was decreasingly "neutral" regarding national choices.

> As long as competition among service providers had been generally excluded, the recommendations restraining competition served as a means to protect mutually the spheres of influence of national monopolies. But in an increasingly competitive environment, the recommendations create market distortions to the benefit of incumbent service providers and to the detriment of potential entrants. It is this change in the function of the ITU recommendations that represents probably the most important impact of national liberalization on the regulatory activities of the ITU. (Witt, 1987, p. 362)

The growing challenge to these rules needed to be accommodated if the system was not to fragment into a patchwork of uncoordinated specialized arrangements, yet sovereign states do not readily give in to foreign demands when this implies jettisoning long-held objectives. However, by mid-decade, changes in the political equations at home and the spread of new thinking about the information economy were leading many of the key regime-making states to reevaluate their positions regarding both national and international institutions. Frustration with weak macroeconomic performance and a conservative political wind set a larger context in which these pressures became doubly compelling. Two in particular merit brief mention here.

First, corporate demands for deregulation were taking on a truly international profile. Firms abroad which had initially been either lukewarm or hostile to the American agenda, especially large users, were reconsidering their positions. TNCs, especially those in financial and other services, found themselves competing with American-based counterparts which were benefiting from the efficiencies and enhanced range of choice in systems and applications associated with liberalization. Market incentives therefore pointed to the desirability of achieving similar gains with their home PTTs, and of extending these gains to cross-border services. Further, a conceptual realignment accompanied these users' shift to more globally oriented profiles. They now saw themselves to have similar interests as American users in relation to states, insofar as they were more concerned with accessing the best resources than with buying nationally. If foreign-

based services were more appropriate than those of local suppliers, they wanted lower tariffs and easier interconnection. If foreign CPE was better for their customized needs, they wanted open standards and liberalized attachments. Hence, the regulatory preferences, negotiating agendas, and intellectual orientations of large users across the industrialized world began to converge around imported focal points, which substantially broadened the support for and impact of the efforts of INTUG, ICC, and similar industry alliances.

A parallel shift was occurring on the market's supply side. The rapid globalization and differentiation of demand generated new opportunities which could be realized best in a liberalized international market. Traditional telecommunications manufacturers and new entrants, whether medium-sized startups or large computer and electronics firms crossing market niches, could not recover the rising R&D costs of advanced CPE and network equipment without foreign sales. Potential private service suppliers could not lure customers to their new offerings unless they could ensure end-to-end connectivity. As locally based users began to procure more widely, success at home necessitated resources and expertise not attainable solely through monopsony purchases. National competitiveness therefore required international competitiveness. Where states were slow to change, TNCs devised novel solutions to access barriers, such as joint ventures and other resource-sharing arrangements. These were piecemeal responses to an uneven transition in which some suppliers still clung to their PTT patrons. But those companies seeking international profiles wanted the predictability of a "flexible" and liberalized multilateral framework.

Second, the emerging reconceptualization of telecommunications' role in economic activity raised the question of whether PTTs should retain their exclusive jurisdictions. If indeed it was not merely a public utility, but was now the nervous system and catalyst for the full range of user industries, other state agencies whose turf was affected by telecommunications wanted a say in national policy. By virtue of their professional training and organizational objectives, the personnel of such agencies were more receptive to liberalization than those of the PTTs. Key trade ministries thought that many cross-border transactions constituted trade and were under their jurisdiction; industry ministries wanted to support national firms, but that held for users as well as producers; competition ministries saw the possibility to extend their antitrust policies; finance ministries wanted to cut expenditures through privatization; and so on. Moreover, such ministries had ties to different social constituencies that the PTTs, and were the targets of effective lobbying by the new interest configuration.

While the resulting interagency divisions over regulation paled in comparison to tradition of turf wars in the United States, they did render telecommunications policy a contested intellectual and bureaucratic terrain, which in turn added to the reform pressure. PTTs no longer had an automatic claim to exclusive and unquestioned jurisdiction over the field. Hence a changing configuration of corporate and intrastate interests and ideas was taking root. These pressures were forcing administrations to reexamine the efficacy of the regime, and would probably have been sufficient to catalyze change in the ITU. However, two further initiatives added supporting external pressures to the mix.

One was the GATT's launching of the Uruguay Round in 1986. The notion that international services exchange had tradelike properties first emerged in the early 1970s, and by the early 1980s the United States was pressing other governments to negotiate services rules as part of a larger trade package. This decision reflected both new corporate interests and ideas about the global economy and national welfare (Drake & Nicolaïdis, 1992). The new interest configuration in the United States supported strongly the government's position, and indeed played an important role in its formulation. After all, the principals and agents involved in GATT negotiations were more procompetitive than those in the ITU. Trade policy tended to receive greater attention from central governments and mobilize broader corporate constituencies which lacked stakes in the postal industrial complex. Moreover, the concepts and terms of reference employed in GATT discussions were more congenially loaded. Trade policy was about establishing rules of fair competition, opening up market access to a multitude of players, and circumscribing narrowly the conditions under which access may legitimately be constrained. The very act of viewing telecommunications as part of a larger category of services transactions to be "traded" according to common rules created a strong conceptual bias toward openness, and set a new yardstick for evaluating telecommunications regulations as simple nontariff barriers to be removed. Hence the GATT was an attractive venue in which to push for a new multilateral framework that would deal with the economic dimensions of international correspondence, as well as a means of pressuring administrations in the ITU to reform the extant regime.

When the United States first raised the issue in 1982, most GATT members were reluctant or hostile. At this point, suspicion was widespread that the Americans wanted negotiations for their own particularistic ends, but over the next four years, an interesting process took place. After undertaking studies of their national capabilities in services, the EC and many key countries learned that

they were not helpless before the American threat, and could in fact fare well in freer competition (Drake & Nicholaïdis, 1992). In the years since the round's launching, opposition in principle to some type of telecommunications trade deal has virtually evaporated, although governments continue to fight over precisely how open the market should be in accordance with which rules and commitments. At the time of writing, negotiations on a General Agreement on Trade in Services (GATS) and its Telecommunications Annex are stalled along with the rest of the round. While the particulars of the Annex are discussed below, a key point is relevant here: Its impact is not entirely dependent on its final form. A treaty would be important in codifying and reinforcing change, but the negotiation process itself had already altered the world of telecommunications policy by the mid-1980s. It was becoming clear that telecommunications would increasingly be thought of and bargained over in trade terms, and that corporate demands for market access would become politically difficult to ignore. As with contested markets among firms, a contested market among policy makers helped lead to anticipatory action. To avoid being swamped with criticism and legal challenges, PTTs needed to get out in front of the wave and prepare for the eventuality of trade by injecting some competitive advantage into their operations; deregulation was in part a response to that need. Simply by taking up services, the GATT had already played a supporting role in laying the seeds of change in the ITU.

The other contributing factor was the launching, also in 1986, of the EC's 1992 program of internal market unification. For over a century, it had been European PTTs which provided the dominant orientation of ITU instruments regarding regulation and standardization, but with the commission's conversion to the cause of a single market in telecommunications and information, those PTTs now found themselves confronted with a higher proliberalization force backed by substantial legal and political authority. In the past five years, the commission has undertaken a wide range of initiatives to push institutional and policy change which have impacted heavily the major national markets and ITU's internal politics.

As a result of these factors, deregulation and liberalization have become a global movement since the middecade. It took root first and most deeply in the domestic systems of the advanced capitalist world, where the pressures and capacities for change were strongest, but it has recently begun to spread rapidly to LDCs and formerly communist countries, as well as to international connections. The characteristics of national deregulation are discussed in the other contributions to this volume, and need not be recited here. What is important to this chapter is the impact on regime cooperation in the ITU.

Institutional Adaptation: Organizational Procedures and Regime Policies

The American move toward domestic deregulation in the 1960s and 1970s did not have a substantial impact in the ITU. But as the government and its corporate constituents turned their attention to international liberalization in the early 1980s, the issue slowly began to creep into the ITU. The first major venue at which it could have been addressed was the 1982 Plenipotentiary in Nairobi. However, plenipotentiary conferences generally concentrate on questions of organizational management and leave detailed standardization and regulatory issues to the administrative conferences and consultative committees. Moreover, after Third World decolonization, they had generally been dominated by North-South conflicts over development assistance (or the lack thereof), the budget, the regional allocation of elected positions in the permanent organs, and so on. At Nairobi, these divisions were deepened by the LDCs' dissatisfaction with the results of the 1979 World Administrative Radio Conference (WARC) and by their high-intensity effort to expel Israel from the meeting, which was narrowly defeated after the Americans threatened to leave (Codding, 1983; Segal 1982). In a sense, the Plenipotentiary had more in common with the United Nations General Assembly than with the CCITT, and liberalization issues received little or no sustained attention from the majority of members. However, the conference did take two steps—one innocuous, the other controversial—that would have important consequences for market liberalization and regime change in the years to come.

First, it retained in the Conventional a provision allowing members to formulate "Special Arrangements." Article 31 held that "Members reserve for themselves, for the private operating agencies recognized by them and for other agencies duly authorized to do so, the right to make special arrangements on telecommunications matters which do not concern Members in general." (ITU, 1982 p. 22) With mild variations in language, this provision dates all the way back to the first ITU treaty in 1865, and has remained in every convention since (ITU, 1866 p. 33). Its retention in 1982 was not expected to cause problems for members, and hence was not a subject of debate. How then could it figure in regime change?

The answer highlights how the actual intersubjective meaning and policy impact of formal institutional rules depends on the context in which they are interpreted and implemented. During the long century of national monopoly control, the special arrangements provision was seen as a mechanism by which administrations and RPOAs could exceptionally cut deals that deviated somewhat from the otherwise

uniform rules of the game. At the outset, this appears to have been intended to allow pairs of continental European countries like Prussia and Bavaria to set tariffs, standards, and operational procedures that catered to their special network and traffic conditions if—and this was crucial—their doing so did not negatively impact the revenues and other interest of third parties. Insofar as monopoly control and joint service provisioning still prevailed, such deals did not undermine the regime's overarching political bargain. In subsequent years, the special arrangemnets provision also appears to have been important in experimentally developing some new services, including those governed by the radio regime, as well as in facilitating the progressive incorporation of American private carriers with unique network characteristics and operating procedures into the regime.

In contrast, the provision would begin to take a new meaning and significance amidst the assymmetric deregulation of the 1980s. As the United States and Britain jumped out ahead of the wave and began to extend liberalization their bilateral relations, Article 31 would provide their TNCs with a legitimating legal basis for launching international VANs, relaxing D Series restrictions on intracorporate leased circuits and so on. Although these were still bilateral deals, the rapid growth of basic and enhanced traffic from the liberalized British hub to the continent now put pressure on continental PTTs to follow suit. Moreover, as TNCs began to increase pressure for liberalization of international relations across the industrialized word in subsequent years, special arrangements provided rationale for an increasingly varied set of agreements that did not comport with the historic regime objective of uniform and restrictive rules. In this sense, Article 31 would play a role in evolving actual market practice away from what the regime rules looked like on paper. Finally, as we will see below, the notion of special arrangements would, by the end of the decade, be reformulated and invoked in an ITU treaty in such a manner as to actively promote the shift toward a multivendor, user-oriented market.

The second step was the decision to convene a WATTC in 1988. The plenipotentiary could not address the new regulatory issues on the horizon, but an expert meeting six years hence with sufficient preparatory committee work could. In separate proposals, the Nordic countries and Japan argued that the rapid growth and differentiation of computer-enhanced, nonvoice services was occurring in a policy void. As the primary treaty instrument for record transmissions, the International Telegraph Regulations on 1973 provided less and less guidance in a value-added world. Proliferation without clear rules for each class of new offerings could, from a PTT standpoint, encourage destructive competition between services and even administrations; the benefits of a uniform regime and symmetric regulation would be

lost. This was a proposition with obvious appeal to the majority of members, and so Resolution No. 10 stated "that it is advisable to establish, to the extent necessary, a broad international regulatory framework for all existing and foreseen new telecommunications services" (ITU, 1982, P. 239). Fearing new restrictions, the United States unsuccessfully opposed the Resolution.

Beyond these two rather different initiatives, the plenipotentiary left the emerging liberalization issues to the CCITT. By slowly unleashing market forces, national deregulation was altering the regime's operational environment and the process of standardization. Growing user demand for flexible systems and customized applications invited a widening array of manufacturers to develop CPE and network equipment for integration into an increasingly complex infrastructure. The number of firms with stakes in the standards game was multiplying rapidly, and they were attaining RPOA or SIO status in the CCITT. By the early 1980s, the private sector was "beginning to play a preponderant role" in the committee, and its representatives outnumbered those of the PTTs in many key study groups (Cerni, 1982, p. 25). This did not mean that administrations were suddenly powerless, but rather that the style and objectives of the discussions became different from in the past. PTTs and RPOAs were forced to accept that they could not formulate effective recommendations without input and consent from major producers, users, and other standards bodies. Just as the equipment market was shifting from monopsony to differentiated supply and demand, key aspects of regime design were being partially privatized, and influence derived increasingly from market shares rather than age-old political alliances. Moreover, there was a growing tendency, especially in the United States, for TNCs frustrated with CCITT's pace and carrier bias to focus their efforts regarding some standards in alternative private bodies. The model of the *ancien* regime—uniform, global, de jure standards developed slowly by a handful of administrations and their chosen suppliers—was giving way to a varied, application-oriented world of rapidly generated private standards, some of which were established de facto by large firms such as International Business Machines (IBM). These dual processes of internal change in the balance of influence and external challenges to the CCITT's exclusive position would continue to accelerate throughout the decade.

Change in the process meant change in the product. The diversification of interests, markets, and regulations applied pressure on the committee to devise standards that allowed TNCs greater flexibility and control. One major casualty was the original ISDN vision. Given the nature of the technology, truly global ISDN standardization would have to extend more deeply into national networks than was generally

the case prior. It was also necessary to provide new service suppliers and users with end-to-end connectivity. But early in the 1981-1984 study period, the United States and its corporate supporters began to lobby heavily against the centralized model favored by European PTTs (Schiller, 1985). At American insistence, the 1980 definition was altered substantially by 1984. No longer was ISDN to be defined as a "public" network. Rather than a single standard user/network interface, there would be a "limited set of connection types" (Rutkowski, 1985). These changes meant that ISDN could be implemented through a number of reference point configurations in accordance with varying national preferences, but at the cost of reduced or more expensive and cumbersome global interconnection. The FCC endorsed the U interface as devised in the private T1 standards committee, and ruled that Network Channel Termination Equipment was CPE rather than network equipment. The United States had opted for multiple private ISDNs rather than "the ISDN." This met the demands of specialized service suppliers, computer manufacturers, and users, all of whom have been very active in American standards fora, but meant that the United States would not support the S/T interface developed in the CCITT. The other rapid liberalizers, the United Kingdom and Japan, also adopted ISDN configurations that were not fully incompatible with the CCITT standard.

In contrast, the European PTTs proceeded with S/T and the original "one nation, one network" vision (Noam, 1986b). Even so, their specific designs sometimes varied, and the shifting political-economic context precluded adopting the sort of measures that had been anticipated and vigorously attacked by the new interest configuration. Forcibly withdrawing leased lines and pushing customers back onto the public network was no longer possible; the PTTs now had to make ISDN more attractive than private alternatives. Some attempted to upgrade their switched networks, offer enhanced Centrex in competition with CPE-defined services, and provide virtual private networks that approximated the same levels of control associated with leased circuits. The EC commission entered the game with money and directives in 1987, announcing that coordinated ISDN development would be central to its 1992 plan. Nevertheless, corporate pressures had resulted in ISDN being absorbed into a more market-oriented supply and demand structure, and customers were increasingly free to choose whether to support it. Thus far, most have not. Capital constraints and soft demand have resulted in repeated delays in implementation, and the EC's hopes of a 5% penetration rate in the community by 1992 are unlikely to be fulfilled. In short, the grand plans for uniform and centralized networks, a logical extension of the *ancien* regime, have been superseded by asymmetric deregulation and

the social forces behind it. The CCITT's ISDN standards are incomplete and unstable, and actual implementation varies widely across the industrialized countries (Wigand, 1988).

Many other trends in network technology and the political-economic context affected CCITT standardization in the 1980s, two of which merit brief mention. The limitations of narrowband ISDN became even more apparent with the shift to Integrated Broadband Network development (IBN). With their megabit capacities, IBNs could carry virtually all forms of information, including full-motion video and high definition television signals (HDTV), but uncertainties remain about its technical design and eventual political control. A major breakthrough came in 1988, when the CCITT adopted a network node interface standard based on the Synchronous Optical Network design (SONET). SONET was generated in the American T1 committee and opposed by the Japanese and Europeans, some of whom favored a rival technology. A compromise approach was taken that may again result in varying national interfaces for some signals. As with ISDN, the user/network interface proved controversial, and a decision was delayed to the 1989-92 study period, in which IBNs have received extensive attention. Hence while there could be substantial capacity improvements over the narrowband ISDN conceived in the 1970s, the fundamental questions of competition, control, and the prospects for truly global standardization were unresolved in the early 1990s.

Whether broadband is defined and implemented in a carrier or customer-oriented fashion will depend in part on another trend: the rise of open network regulatory concepts. In its 1986 Computer III decision, the FCC embraced an Open Network Architecture (ONA) design that would give VAN operators equal access to common carriers' network resources in exchange for allowing the latter to compete in enhanced services without having to form separate subsidiaries. Building on AT&T's Intelligent Network/2 technology, ONA essentially treats networks as aggregations of advanced capabilities that can be drawn on, optimized, and combined by customers to fit their specialized needs on a case-by-case basis. The underlying infrastructure becomes a pool of intelligent, software-based resources for shared interfirm processes, wherein value can be added and new wealth generated. While ONA is difficult to police and recently suffered a setback in the courts, the basic concept spread rapidly. The EC Commission adopted a series of broadly similar Open Network Provisioning (ONP) measures, and the Japanese have their own version (Rutkowski, 1987). To date, the extent of this unpacking and dispersal of functions from the center has varied across counties, as PTTs are uncertain of the financial implications. But some seem ready to gamble that what they lose in terms of control over certain functions,

they can make up for by expanding the level of switched traffic in a competitive environment. In short, the emerging trend since the late 1980s seems to be toward a configuration in which national administrations retain control over the underlying facilities but allow a widening array of independent suppliers and users greater market access and applications control in services. This is likely to affect many ITU activities in the future.

While CCITT standardization was rapidly impacted by the emerging order, movement was slower on its regulation of international services. In the first half of the 1980s, a growing number of northern PTTs began to experiment with selective liberalization of specific domestic market niches in the hope of satisfying their awakening corporate constituencies. The result was a complex mosaic of increasingly asymmetric regulatory and market structures that aggravated globally oriented corporate managers, who wanted clear, consistent, and permissive rules wherever they operated (Bruce, Cunard, & Director, 1988; Eward, 1984). Indeed, rather than satisfying corporate appetites and achieving a new and marginally more open equilibrium, such experiments provided influential TNCs with additional incentives to press onward with further demands across unstable regulatory boundary lines. But in the CCITT, there was no consensus for accommodating these pressures in the international order. To the contrary, the 1984 Plenary Assembly adopted the D Series, cited above, over adamant objections to its restrictive provisions from INTUG and other business lobbies. More surprisingly perhaps, virtually the same D Series provisions were retained in the Blue Book approved at the 1988 plenary at Melbourne, by which time the consensus for change was otherwise stronger (ITU, 1989b).

Many administrations were still loath to rescind rules that protected their monopolies over lucrative international traffic that was a major source of revenue with which to cross-subsidize domestic programs. Especially with value-based tariffs for corporate customers, these services remained an important cash cow and source of authority in an era when such resources were eroding at the national level. Even by 1988, fundamentally altering a collective arrangement devised to fit the least-common-denominator interests of all members would have been difficult because they varied widely in the speed and depth of reform. Increasingly asymmetric regime preferences presented two distinct options. The CCITT could undertake the conflictual task of trying to jettison, in an organization that takes decisions by consensus, rules which some members continued to favor. That would reduce their room to maneuver, as it would be politically easier to legitimate selectively liberalizing departures from the existing restrictive baseline than to legitimate restrictive departures from

a new liberal baseline. And insofar as many PTTs used the recommendations as guidelines for domestic policy, changing the D Series would make it difficult to resist similar changes at home. Alternatively, the CCITT could retain the common framework but allow those administrations who wished to grant firms new rights to negotiate bilateral special arrangements with like-minded counterparts. The latter course would not disrupt the affairs of third parties or remove the safety net of collective legitimation upon which some PTTs depended in their dealings with TNCs. However, it did mean that insofar as administrations agreed to selectively depart from them, the recommendations were truly becoming recommendations, rather than rules that were automatically and uniformly applied as in the past.

That the 1988 plenary kept the old D Series language intact despite substantial pressures for change was also due to the committee's preoccupation with two other issues. One, the restructuring of the standards process, is discussed below. The other was the WATTC conference to be held just afterwards, also in Melbourne. The regime's three instruments—the Convention, Regulations, and Recommendations—are structured in a logical and legal hierarchy. Accordingly, the Recommendations are interpreted in light of the Regulations, the status of which was unclear because of sharp divisions over what type of new treaty rules would be applied to "all existing and foreseeable services." The Preparatory Committee established to draft the new agreement was deeply and bitterly divided between the partisans of sweeping liberalization and a majority favoring more incremental and limited reforms. Pending the outcome of WATTC-88, reconsideration of the D Series was effectively on hold.

The PrepComm comprised about 35 of the ITU's then 165 members, and was dominated by a coalition of PTTs. In four meetings during 1985-1987, they inserted provisions into the draft which hard-line liberalizers found extremely objectionable. At the May 1987 meeting, the PrepComm text was adopted over objections from the United States, Britain, and Kuwait. There were many contentious issues, but the key ones concerned the scope of services (and by extension, networks) and domain of entities to be covered in the new regime treaty (Drake, 1988). The Regulations would apply to the provision of services to the public, and Article 1.2 defined this public as meaning the population, including "governmental and legal bodies within the territory in whole or part of a Member." Similarly, Article 1.7 provided that

> Members shall endeavor to ensure that any entity, established in their territory, using the international telecommunication network to provide an international telecommunication service: a) is so authorized by the

> Member, b) complies with these Regulations, and c) to the extent considered appropriate by the Member, complies with the relevant Recommendations. (ITU, 1987, p. 53)

The PrepComm minority asserted that latent in this jargon was a grand plan by the PTTs to not only preserve their existing market positions and regulatory authority, but actually expand them into new domains of the information economy. They argued that it could be taken as codifying new rights for administrations to apply restrictive conditions to any type of service provided by any company to anyone else. Specialized suppliers such as private VANS, and perhaps even large users who employed internal capabilities to service their geographically dispersed operations, could be forced to attain official approval for any operation. This was not the case with the 1973 Regulations. Written in the precompetitive era, their scope encompassed clearly only telegraph and telephone services, their domain only PTTs and RPOAs. New services and suppliers had arisen subsequently, and were covered primarily by the recommendations. The minority saw bad news here, too, as the language seemed to require full compliance by everybody with the recommendations, implicitly elevating their status from voluntary to mandatory rules. Finally, they maintained that the draft expanded the regime's scope beyond telecommunications transmission to information services. Article 4.2 stated in part that, "Types of international telecommunication services are defined in the relevant CCITT Recommendations" (ITU, 1987, p. 56). This was in deference to administrations that had unsuccessfully sought to include a detailed list of all services to be regulated, which was impractical amidst rapid innovation. But some services discussed in the recommendations were not unambiguously "telecommunications," as they were concerned more with information's enhancement than its transport. Indeed, a highly-publicized report by prominent American consultants blasted the ITU for allegedly seeking to attain regulatory control over all network-dependent services firms, from banks and consultancies to data processors and beyond; and implied that the Secretary General, Richard Butler, was engaged in a personal power grab (Bruce, Cunard, & Director, 1987).

In truth, such charges were probably a bit exaggerated, and several factors make it unclear just how restrictive the PrepComm text would have been in implementation. First, the policy environment had changed rapidly since it was first drafted in 1985. While the Americans alleged that the PrepComm was seeking mandatory conformity with a uniform and onerous global framework, the PTTs were already engaging in asymmetric deregulatory programs that would make such an interpretation difficult, and many of their own domestic

constituents and governments would have opposed this. Moreover, while a few PTTs such as the French and their African clients argued strongly for the language, support from others was wavering or soft; the document did not necessarily reflect the coherent and committed determination of all PrepComm members. Second, it is debatable whether the authorization of entities would be required and conform to some single, rigid procedure; PTTs might choose the degree of flexibility which matched their increasingly diverse policies. Third, Article 1.2 said the Regulations included "underlying telecommunication transport," and while "include" could be read to mean "but are not limited to," it would be extraordinarily difficult for PTTs to extend their reach to financial and all other network-based services as the Americans feared. In short, the draft's open-ended wording provided support to those PTTs wishing to adopt telecommunications restrictions, but it did not consistently require them to do so. It was again a least-common-denominator instrument designed for members' baseline interest in preserving national sovereignty as fit their needs.

Nevertheless, the impending WATTC became a major controversy that brought the ITU to the front page of newspaper business sections. The organization that had always been cited as the paragon of smooth apolitical international cooperation was now the locus of a major struggle over the rules of the game in the global information economy. From mid-1987 to mid-1988, a worldwide pressure campaign was launched against the PrepComm text. The American and British governments denounced it, the former intimating that it would return to its old status of nonsignatory to the Regulations. In the business press and conference circuit, analysts depicted the WATTC process as an almost cosmic struggle between free market good and PTT evil. Most importantly, the fight focused the minds of corporate managers around the world on their common political interests, and helped solidify the transnational front to an unprecedented degree. Multinational lobbies and their domestic counterparts voiced strong opposition. Powerful firms in the United States filed submissions with the FCC saying the United States should not sign the accord, and foreign companies whose home PTTs had supported the draft applied similar pressures on their governments. Some TNCs intimated publicly that they would attempt to customize their CPE and leased circuits so as to bypass any new restrictions. The PrepComm majority was clearly going to have to back off, but needed a way to do so without losing all face.

A few months before the conference, Secretary General Richard Butler proposed an alternative draft which made the inevitable concessions to the PrepComm minority. The "Butler Draft" underscored that sovereign choice rather than a mandatory and uniform

global framework was the basis of national policies; deleted the controversial definition of the public in draft 1.2 and the "any entity" provision of 1.7; explicitly restricted the Regulations' domain to PTTs and RPOAs; reaffirmed that compliance with the recommendations was not mandatory; and added a new Article 9 based on Article 31 of the 1982 Convention. It held that members could authorize their administrations, RPOAs, and "any other organization or person" to enter into special arrangements with counterparts abroad, subject to national laws, "for establishment of special networks, systems, or applications, including the underlying means of telecommunications transport, to meet their own international communication needs or those of others" (ITU, 1988a, p. 10). This positioned the ability of new suppliers and users to conclude special arrangements for any type of facilities and services as an overarching regime principle in light of which the other provisions should be considered. Of course, government approval was still needed, but refusal to provide it would now be more difficult if PTTs could not hide behind treaty commitments. Not surprisingly, some ITU members reacted cautiously to the Secretary General's suggestions. The United States stridently demanded firmer commitments to competition, while some in the majority grumbled that the changes were a "giveaway" to the Americans. But adherence to some variant of his language was the only path to a successful negotiation: Too much pressure had been mobilized to allow a return to the PrepComm draft, and many key administrations had concluded that change was unavoidable.

While 112 members were represented at Melbourne, most of the important decisions were taken by a small, ad hoc group of mostly advanced capitalist countries working long into the night behind closed doors. Many LDCs balked at the exclusion of their concerns about officially blessing private interconnection and service provisioning, but these were pushed aside into a series of nonbinding resolutions and opinions. Like all the regime negotiations before it, this was a game between the rich and powerful. After much heated debate, the meeting concluded a new treaty by majority vote, rather than by consensus. "Fittingly, the Town Hall where WATTC took place was cleared immediately afterwards for a performance of Handel's Messiah" (Williamson, 1989, p. 18). The final text drew heavily on the Butler draft, with a few compromises for the PTTs. It was "neutral" insofar as it required neither open markets nor strict regulation; that choice was left to individual states. But in the current policy context, this makes it a de facto liberalizing agreement. Now a single treaty—The International Telecommunication Regulations—applying general principles beyond the realm of telegraph and telephone, it establishes a normative presumption that PTTs will accommodate a multivendor,

user-oriented environment, and deprives them of any collective rationale for imposing new restrictions. Left to fend for themselves, many PTTs would find corporate demands difficult to ignore.

Article 1 on "Purpose and Scope of the Regulations" says the Regulations cover services offered to the public, the underlying international telecommunication transport, and administrations and RPOAs. It invokes at the treaty's beginning the right of members to allow special arrangement, which is elaborated by Article 9 in keeping with the Butler formulation. Article 1 goes on to say that the Regulations are to facilitate global interconnection and interoperability, and the efficiency, usefulness, and availability of services, which is understood to involve a complex mix of public and private entities; that references to the Recommendations do not give them the same legal status as the Regulations, and (only) administrations and RPOAs must comply with them "when possible;" and that members may require that administrations and POAs serving the public be authorized and, where appropriate, will encourage compliance with the Recommendations by such suppliers. Other notable provisions were contained in Article 3, "International Network," which holds that any user has the right to send traffic; Article 4, "International Telecommunication Services," which says that administrations and RPOAs should provide a minimum quality of service for access to the international network, private leased facilities and services, and interworking between services; Article 7, "Suspension of Services," which implies that any suspension shall be temporary; and Appendix 1-1, "Accounting Rates," which calls for the revision of rates taking into account cost trends for each specific service (ITU, 1988b, pp. 3–4, 7–8, 11, 13)

These and other provisions largely met the demands of TNCs and government favoring sweeping liberalization. Only the retention of authorization language could be viewed as a small setback. However, it does not obligate authorization, but simply recognizes a member's right to require it should it decide to do so; is clearly limited to firms supplying underlying transport services to third parties; and does not apply to the internal operations of users. "In practice, the new language merely recognizes what has already been a part of the sovereign rights of Members," and there is no evidence that Article 1.7 has constituted a new impediment to TNCs since the Regulations were adopted (U.S. Department of State, 1988, p. 8). Underscoring its position on the regime's scope, domain, and jurisdiction, the United States declared in the Final Protocol that it did not

> Accept any obligation to enforce any provision of the domestic law or regulations of any other Member; endorse, in any way, domestic pro-

> cedures of other Members which would require approval for providers of telecommunications services and services dependent on telecommunication transport seeking to do business outside of the United States of America; [or] accept any obligation in respect of the application of any provision of these Regulations to services other than public correspondence services. (ITU, 1988c, p. 16)

For their part, EC members arrived at Melbourne deeply divided along North-South lines, with the former group having moved away from the PrepComm language. France and its African clients were the only remaining strong advocates of expanded regulatory powers, and their major initiatives—mandatory access charges for private network interconnection and international cooperation in implementing namely national policies. TNCs—failed to pass. Moreover, they wanted to proscribe economic harm to third parties from special arrangements, but:

> Several developed countries argued that this addition was beyond the scope of the ITU since the ITU, they said, was a purely technical institution that should not be involved in economic matters. Obviously, a much controversial argument since, throughout WATTC-88, economic issues were discussed extensively. (Raveendran, 1989, p. 37)

Power prevailed, and this concern was relegated to a nonbinding opinion.

The international business community and press were pleased with the results. One corporate spokesperson noted that "we can be sure that the needs of users will dictate the ultimate effects of WATTC" (MCI's Lawrence Codacovi, quoted in Williamson, 1989, p. 19). Another prominent observer noted:

> WATTC 88 represents a victory for operators and users of private networks, and for the ITU...the regulations recognize that there are special networks, systems and applications which do not conform to conventional telecommunications networks.... These are "permissive" arrangements between participating parties according to national laws. WATTC represents a transition into a multiprovider world....It also lends legitimacy to claims by trade experts that telecommunications services are indeed traded, and should be governed by a trade regime. (Pipe, 1989, p. 21)

By adopting a formally neutral agreement, the conference did open a space for the GATS negotiators, thus side-stepping the widely anticipated problems of contradictory treaty instruments. It also set an

entirely new tone for the ITU's internal workings. The bruising fight over the PrepComm text demonstrated the breadth and intensity of corporate demands for continuing liberalization and a greater voice in ITU affairs. Administrations could no longer expect to retain their exclusive control over the policy process, or to devise instruments that were sharply out of synch with an increasingly privatized marketplace. The treaty signalled the transition to a new international regime under which global interconnection and service provisioning would involve a complex competitive mixture of public and private entities. That transition gathered momentum with five subsequent events: the restructuring of the standards process, changes approved by the 1989 Plenipotentiary, liberalization of the D Series, current pressures to reform the accounting and settlements procedures, and progress in the Uruguay Round on the GATS Telecommunications Annex.

Throughout the 1980s, the CCITT's historical dominance of international standardization had been progressively slipping away. Liberalization and the technical convergence of telecommunications and information systems radically increased the number of diversity of players in standardization. Frustrated with the slow pace and PTT control in the CCITT, these firms were often looking to national standards bodies such as the American National Standards Institute (ANSI), T1 committee of the National Exchange Carriers Association (NECA), and Corporation for Open Systems (COS) in North America, and the Technical Telecommunications Committee (TTC) in Japan; and to regional standards bodies like the EC's new European Telecommunications Standards Institute (ETSI) and the European Standards Commission (CEN). Dozens of other industry-oriented groups entered the game, resulting in the CCITT's position suffering centrifugal devolution, and end-to-end global interoperability became more difficult to achieve (Drake & McKnight, 1988). To address these problems, CCITT Director Theodor Irmer spearheaded a two-pronged program designed to make the committee more responsive to the demands of a privatized marketplace.

The first prong consisted of internal reforms of the CCITT's working methods. Manufacturers, service suppliers, and users all complained that the industry could not wait for the finalization of standards at the quadrennial plenaries. At the 1988 assembly, Irmer argued that some recommendations should be adopted quickly via balloting, as was the practice in many private bodies. The Soviet Union and some LDCs expressed strong concerns that while this would suit the industry in the advanced capitalist countries, it could reduce even further their ability to have a say in the process. Some procedural compromises

were offered to partially allay these fears, and the plenary adopted by consensus a "Spirit of Melbourne" Resolution on "Approval of new and revised Recommendations between Plenary Assemblies." Essentially, the new "accelerated procedures" allow that when needed, standards can be adopted if seventy percent of CCITT members responding approve them within three months of the Director's circulation of a proposal. This is an important shift from the slow consensus building process of the past. The 1988 plenary also approved a number of other changes to CCITT working methods designed to improve coordination among study groups, drop obsolete questions and recommendations, streamline documentation, and increase the use of electronic networks in the standards process (Drake, 1989). More are possible at the 1992 plenary, including a formal move to flexible project teams and even the abolition of the quadrennial study-period cycle and associated multivolume books of recommendations, many of which are out of date by the time of publications.

The second prong involved improved coordination between the CCITT and external standards bodies. Despite hopeful resolutions at the 1988 Plenary Assembly and WATTC endorsing its "pre-eminence" in global standardization, the CCITT was recognized to have a different and somewhat diminished role in the future. Rather than being the a priori locus of most activity, the committee will serve as a sort of clearinghouse or central switch for a global network of organizations devising standards in accordance with varying market conditions. Important steps toward this policy architecture were taken at the first Interregional Telecommunications Standards Conference (ITSC), held a Fredericksburg in February 1990. There Director Irmer laid out a three-step plan in which other standards bodies will consult with the CCITT (and where relevant, CCIR) to set plans and priorities, engage in networked problem solving, and submit consolidated proposals to it for possible multilateral adoption. This "upstream" flow will generate global standards for national implementation in the "downstream" stage. Although official delegates to the ITSC were from the CCITT, CCIR, T1, ETSI, and TTC, other industry-oriented organizations will also feed into the process. A framework of periodic meetings and continuous, electronically mediated consultations was established to implement the plan.

Some policy makers felt these reforms were not enough. In the months prior to the May-June 1989 Plenipotentiary at Nice, a debate raged in the ITU about whether to merge the standards functions of the CCITT and CCIR. Proponents included the Secretary General and other key ITU officials, some advanced capitalist countries, and many LDCs. In essence they argued that wired and radio technologies were increasingly integrated and require coordinated planning; many

CCIR activities were redundant, and could be rationalized in a manner that freed up tight funds for other activities such as technical assistance; and the CCIR was both generationally and intellectually slow-moving and out of touch with the world of advanced systems and service, and falling further and further behind the CCITT in terms of productivity. Opponents included the United States and other Northern governments and influential TNCs, especially American broadcasters and service providers. They maintained that: even with growing integration, wired and wireless issues remained functionally different and involved specialized expertise; there were few real cost savings to be realized through a merger; and that the (off-the-record) attacks on the CCIR really concealed a desire by the Secretary General to somehow centralize his control over standardization. Besides, the Director of the CCIR, Richard Kirby, was an American; the United States did not want to lose a top ITU official in a merger (Drake, 1989).

Accordingly, opponents blocked any movement on the issue at Nice, and in compromise the Administrative Council (AC) was asked to appoint a High-Level Committee (HLC) including representatives of 21 countries to examine in detail the merits of organizational reform. Among the many recommendations in its April 1991 report, the HLC suggested a new tripartite policy structure: a Standardization Sector to comprise the CCITT and the standards functions of the CCIR; a Radiocommunication Sector to include the CCIR's spectrum functions and the International Frequency Registration Board; and a Development Sector consolidating all technical assistance programs. Each sector would have as its supreme body a regularly convened World Conference and be supported by Study Groups (ITU, 1991). These recommendations enjoyed broad support in a subsequent AC meeting. The United States and its corporate constituents remained hostile to consolidating the CCIR's standards functions. Either way, the net effect of all these activities has been to bring intergovernmental standardization more fully in line with a new and more market-oriented international regime.

The 1989 Plenipotentiary took another step in that direction by enhancing the role of TNCs in the CCITT decision-making process. Under the new treaty, SIOs attained membership rights in the committee, subject only to approval by their respective home governments (ITU, 1990a, p. 16). Their official status is still somewhat less than that of RPOAs, who may at times represent their governments and even vote in the plenary assemblies. However, this difference on paper is not too significant in practice, because the vast majority of decision on standards, regulatory, and tariff issues are reached by consensus in the committee prior to the plenaries, which rubber stamp them. As such, future CCITT plans will reflect a broader range of

industry interests than in the days of PTT dominance, and could actually accelerate rather than slow the evolution toward a multivendor environment. In a sign of the times, this American-sponsored initiative, which would have controversial at the 1982 Plenipotentiary, encountered little real opposition. If implemented as expected, the HLC's recommendations would deepen this trend by also establishing a Business Advisory Forum "composed of chief executive officers or comparable top management representatives to give [the Secretary General] the views of the private sector on the telecommunications environment and how...the ITU's principal activities can be carried out effectively" (ITU, 1991, p. 19). In addition, the Forum would provide direct input into the work of the three sectors, and of a new Strategic Policy and Planning Unit charged with providing suggestions on overall policy reform to the Secretary General.

Two further events at Nice underscore the shift to a market-oriented ITU. One was the discussion of an influential report by a high-level advisory group on "The Changing Telecommunication Environment." Addressing in particular the LDCs, the report urged ITU members to adjust to the new global marketplace by undertaking such reforms as deregulation and even privatization of their PTTs (ITU, 1989a). Once the bastion of PTT power, the ITU was now presenting its dismemberment as an alternative to be considered seriously. Indeed, a growing number of LDCs have moved quickly in this direction during the past three years, often with the prodding of the World Bank, Northern governments, and TNCs. The other event was the election of Pekka Tarjanne as Secretary General. Strongly supported by the United States and other powerful members, Tarjanne has rapidly set a tone that differs sharply from that of his predecessor. For example, he has spoken widely of the need to move toward open networks and free trade in services, and of "complementarity" between the new ITU and the GATS negotiations. Finally, while less central to the question of regime transformation, the 1989 Plenipotentiary also adopted numerous other changes, two of which merit brief mention. A Bureau for Development of Telecommunications (BDT) was established that is to consolidate existing technical assistance programs, pending approval of the HLC recommendations. The BDT may prove more useful to market-seeking TNCs than previous programs, and they do not need to acquire RPOA/SIO status to participate. Moreover, BDT side payments could help allay some LDCs' fears in the transition to a liberalized environment and prevent disruption of regime activities important to the North. Also, the ITU's basic instruments were divided into a semipermanent Constitution and a more malleable Convention, so that future plenipotentiaries can spend more time on

substantive issues and less on rewriting the treaty's organizational rules (Codding, 1990).

With the WATTC and plenipotentiary adapting its two treaty instruments to accommodate corporate demands, pressures mounted for corresponding adjustments to the regime's third regulatory pillar. Participants in CCITT Study Group III finally caved in and agreed to endorse liberalization of the D Series restrictions on leased lines. The move came at a time when the CCITT was taking substantial heat from many sides beyond the usual American and corporate suspects. In early 1990, journalist Hugo Dixon wrote a series of widely noted articles in the *Financial Times* which depicted the committee as a cabal of PTTs who were stifling the market through cartel rules. This unusual and highly critical press attention caught the eye of many governments, which took the matter up with their administrations, and it reverberated throughout the ITU and put people on the defensive. More importantly, the EC Commission's competition directorate notified regional PTTs that the D Series appeared to be contrary to the Treaty of Rome and the 1992 program, and that its retention could lead to antitrust litigation. European PTTs were thus forces to abandon the last outpost of the *ancien* regime of which they had been the primary architects. Meetings held in October 1989 and May 1990 examined various proposals, and a draft text was ready by November 1990. After minor alterations to mollify certain PTTs, the March 1991 meeting endorsed the text by consensus and submitted it for full CCITT approval under the new accelerated procedures. These changes will be approved in the summer of 1991.

The agreement essentially derives user-specific rules from the WATTC's general principles. It allows basically unfettered access to and control over internal leased circuits; accepts liberal attachments to and modifications of lines, subject to easier type approval and avoidance of technical harm to facilities; accepts the provision of telecommunications services to third parties; allows the interconnnection of private leased circuits and networks between each other and with public networks; and accepts the resale of excess capacity. On charges, "circuits should be cost oriented and generally established on a flat-rate basis," and any access charges must by "cost-related" and dependent on the administration's own additional expenses from providing the specific mode of interconnection or special routing requested by a customer (ITU, 1990d, p. 6). Changes in conditions such as cancellation or temporary withdrawal of lines are to be done only after substantial consultations. Finally, many of the restrictive sections in the 1988 text were simply dropped from mention, for example, the rules giving administrations exclusive control over switching,

limiting communication with data-processing centers, and so on. Administrations may designate certain (public telephony) services as their exclusive domain, and can also choose to retain restrictions under their national laws, but there will no longer be specific prohibitions in the regime to cite as justifying or requiring such actions in either domestic or international planning.

The next domino to fall may be the accounting and settlements procedures at the heart of joint service provisioning. There are many sides to this debate, but for simplicity it can be reduced to two key issues deriving from the gap between asymmetric deregulation at the national level and the uniform international framework. First, it has been the long-standing practice of many administrations to render collection charges for international services that are substantially above cost, so as to facilitate cross-subsidization and so on. It is unclear whether there was actual cartel collusion; many carriers in Europe and elsewhere set their charges at broadly comparable level, but there remained much variation catering to national conditions. Either way, the cost to customers was substantial, and the above-mentioned *Financial Times* series alleged that CCITT administrations collectively overcharge by $10 billion per year. Second, the rates set for balancing of accounts between correspondents were also quite high. This was not a problem in the days of symmetric regulation, but it became one when rapid liberalizers cut their collection charges substantially in the 1980s. Following on earlier studies, the FCC issued a Notice of Proposed Rulemaking in August 1990 stating that the United States had a $2 billion trade deficit from international services in 1988, "with perhaps $1 billion of this deficit being a direct underwriting by U.S. consumers of foreign telecommunications administrations" (FCC, 1990, p. 1). The FCC argued that while American carriers had cut their collection charges close to costs, the PTTs had not. It being much cheaper to call from the United States to abroad than vice versa, American customers were doing so at a level resulting in net outpayments to foreign PTTs under the 50/50 settlement scheme. Moreover, the Commission maintained that by generating such surpluses, artificially high accounting rates reduce PTTs' incentives to lower their collection charges.

Accordingly, the FCC announced its intention to attempt to unilaterally force administrations to reduce their rates, with the possibility of some unspecified retaliation if they did not. The EC Commission's competition directorate opened its own investigation, once again raising the possibility of antitrust proceedings against key CCITT participants. The Organization for Economic Cooperation and Development (OECD) and several governments have also entered the

fray on the cost-cutting side. The allegations are being picked up and elaborated in a growing number of reports and conferences, and alternatives to the joint service model of international order—free trade, end-to-end provisioning, and so on—are being widely debated (Ergas & Paterson, 1991). There is evidence that some PTTs are attempting to head off the fight by renegotiating certain accounting rates and cutting their collection charges, especially on leased lines, but despite these pressures and piecemeal reforms, the CCITT has not to date achieved consensus on whether to consider changing the overall framework under the *ancien* regime.

All this came at a bad time for the Third World. The LDCs had asserted periodically that the regime should be changed to formally include a redistributional principle. They argued that due to local conditions, the cost of rendering their halves of joint services were often higher than the costs to correspondents in the North. Hence, they wanted codified in ITU instruments some form of asymmetric settlements system under which, for example, revenues from North-South calls would be divided on a 49/51 basis. This goal was noted in a nonbinding opinion at the 1982 Plenipotentiary, mentioned in the 1984 Maitland Commission report, and reaffirmed in a nonbinding Resolution at WATTC-88. The latter statement called on the Secretary General to undertake a study of the issues to be reported to the 1989 Plenipotentiary. An inhouse, low-resource project, the "cost study" did conclude that there was some evidence that LDCs' costs were higher, but admitted that the methodological problems of comparing costs were so daunting as to qualify substantially the finding (ITU, 1990b). Nevertheless, the South had hoped to press on until the accounting and settlements system came under attack from a very different angle. According to the FCC and similar investigations, the newly industrialized countries and a few other LDCs are in fact major beneficiaries of the payment outflows and trade deficits experienced by the United States and some advanced capitalist countries. Their incoming traffic has risen substantially while their collection charges and accounting rates have not generally shifted downward. This news may have all but killed the Third World's incipient campaign for preferential treatment, and ensured that planned redistribution remains outside the regime's framework. Indeed, a November 1990 telecommunications conference executive committee meeting of the Organization for American States beat a rapid retreat from a proposed denunciation of the FCC's proceedings after American pressure and fears of further public exposure set in.

Finally, the story of regime transformation would be incomplete without returning briefly to the GATS negotiations. They have been

an important source of pressure on the ITU; one prominent observer called the campaign for a telecommunications trade agreement "the ultimate bypass" of the ITU (Pipe, 1987). The GATS process impacted the way telecommunications services were thought of and bargained over both nationally and internationally, and provided PTTs with additional incentives to build competitive positions through liberalization. But despite the enthusiasm of free trade advocates, the Uruguay Round launched in 1986 collapsed in December 1990. In the press this is usually attributed to agricultural disputes, but in fact many other issues were far from resolved and the draft texts were still the subject of hot contention. The Telecommunications Annex was one such case. Negotiators had extraordinary difficulty with the complex conceptual task of applying trade principles to networks and services, and they remained divided on how binding these should be at a subsectoral level. The handful of initial market opening commitments offered by about a dozen governments prior to December applied almost exclusively to value-added services, and variations in national definitions of what fit this category made bargaining difficult.

Ironically, the United States helped to slow the process in the summer of 1990 by announcing that, due to asymmetric deregulation, it would not accept the application of the key most-favored-nation (MFN) principle to basic telecommunications. Its concern was that insofar as the draft language did not bar monopolies, it would freeze the regulatory status quo abroad and give foreign entities easy access to the comparatively open American market without requiring reciprocal concessions. The United States therefore insisted on adding a second, separate annex devoted entirely to excluding basic services from MFN coverage. Other negotiators decried the move as blocking progress, although in truth it is not clear how many governments really wanted free trade in basic services. Some of the key liberalizing provisions which might survive in an eventual agreement allow leased line access for TNCs, end-to-end provisioning of value-added services, resale and shared use, cost-based (or less rigorously, "cost-oriented") pricing, and limitations on trade-distorting proprietary interfaces and standards (MTN, 1990). As we have seen, many of these questions have already been addressed in the CCITT, albeit not in a legally binding treaty accompanied by national commitments. If the GATS succeeds, it will add liberalizing bite to the ITU instruments covered above. If it fails, the new Regulations and D.1 Recommendations will stand as primary sources of multilateral order in the global information economy.

CONCLUSION

This chapter has attempted to show that the international regime launched over 120 years ago has undergone fundamental transformation since the late 1980s, and that asymmetric deregulation has figured prominently in the process. This transformation consists of shifts to a new intersubjective understanding and set of formal instruments that allow for and even encourage corporate competition and control in international telecommunications. Gone are the overarching principles that network interconnection and service provisioning are the proprietary domains of national PTTs and RPOAs, and with them many of the detailed norms and rules through which administrations maintained their authority. The extent of the change we have traced can be readily appreciated by looking at Figure 1 and considering how many of these key injunctions from the *ancien* regime are now or are soon to be void. Perhaps another measure is the fact that a prominent ITU official has recently advocated privatizing the organization and issuing shares to governments and TNCs alike; the idea received high-level attention (Rutkowski, 1990).

None of the above means that the international market is suddenly wide open, or that government agencies have disappeared from the scene. Instead, it means that the international regime no longer provides governments with collective legitimation of their regulatory restrictions and market positions; they will have to find for themselves individually against corporate pressures for further liberalization. Public administrations will continue to struggle over market shares, user applications, and many other issues with the TNCs, and attempt to utilize their control over underlying switched networks to strategic advantage. Perhaps an international version of the FCC's Computer III inquiry on open networks will be the next stage in the evolution toward a privatized order. The issue is not that the precise terms of trade have all been worked out, but rather that they are now the issue. The ideological, economic and political terrain has been recast so as to make state control an exception which must be justified, rather than an unquestioned rule. In this sense, Eli Noam is right to argue:

> The rent-seeking coalition that provided links of shared economic interests across frontiers is steadily breaking down. In this light the turmoil of telecommunications should be understood as nothing more

> than a normalization—one of the most tightly controlled sectors is becoming more like the rest of the economy, not necessarily deregulated but more "normal." (Noam, 1989, p. 257)

What I have attempted to show is simply this: International normalization has arrived.

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