The Dynamics of International Regulatory Regimes

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OVERVIEW.

The international telecommunications system is the world's largest machine, and one that touches on a multitude of national political and economic interests. If the system is to function at all, much less in a collectively optimal fashion, governments must set common rules for the regulation of technologies and markets by collaborating in international regimes. This paper undertakes a broad initial assessment of the impact of asymmetric deregulation on the principle international regimes governing point-to-point telecommunications and information flow. Theoretically, it addresses the problems attendant the unilateral defection of the United States from the traditional international regulatory consensus, and the conflicts that has raised with European governments.[1] Methodologically, it draws on the current theoretical literature in American political science on the dynamics of international regimes in order to analyze the ways in which these institutions adapt, or fail to adapt, to turbulent changes in their operational environments.[2]

In contrast to the currently dominant theoretical explanations for regime adaptation and change, which reason "down" from international system structure to collective behavior, I advance a dynamic alternative that reasons "up" to cooperation from the structures of national polities. Drawing on the new "institutionalist" approaches in political science and economics, and in contrast to the soft technological determinism of many liberal explanations, I maintain that domestic state/society relations shape 1) the patterns of technical and accompanying market change that comprise the regimes' external environment, and 2) the consequent utilities of states

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[1] Two preliminary points regarding the focus of this paper: first, on the American side, my discussion of liberalization goes beyond formal FCC deregulatory proceedings to encompass the gradual development of technological and market pressures that began with the expanded institutionalization of private research and development in the early post-World War II era. Second, my discussion of European opposition to the internationalization of that liberalization focusses on the period prior to the most recent moves toward selective market competition in certain continental countries.

[2] I take this analytical approach on the assumptions that this literature may provide some useful analytical entry points into the current problems in international communications, and that it may be unfamiliar to some of the conference's participants. In drawing on a sometimes arcane American theoretical literature, I am in no way suggesting that it provides us with the best or only tools for assessing international collaboration. If any of the other participants can point me to pertinent European analyses of international regimes, I would be most grateful.

in the collaborative game.[3] These relations include the structural organization and power of societal interests in relation to states in the policy-making process, and the dominant ideologies that accompany those configurations. Thus, successful regime cooperation requires not a concentrated distribution of international power, as some allege, but instead substantially similar *social purposes* on the part of the dominant states. In broad terms, my argument is that, 1) *when the regime-making nations of Europe and the United States had convergent patterns of domestic state-society relations and property rights, communications systems and services were technically homogeneous, international markets were non-conflictual, and intergovernmental cooperation was successful; and 2) as these relations diverged during the past two decades, systems become differentiated and interpenetrated, international markets became conflictual, and intergovernmental cooperation became progressively more difficult.*[4] The result, I contend, has been the gradual weakening of the international telecommunications and satellite regimes, and the virtual demise of the loose consensus that once existed with regard to information transfer.

My argument can be summarized as consisting of five principle theses. First, during the first 100 years of cooperation in communications (roughly 1865-1970), all the major national participants in the regimes had broadly convergent national policy arrangements and international goals. Communications was viewed as a vital infrastructural industry necessitating direct governmental intervention to organize societal interests in accordance with technical and social criteria for network governance. The regulatory ideology was that telecommunications was a "natural monopoly," a scarce resource requiring management by unified entities to realize

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3 The label "Institutionalism" has been applied to a wide variety of seemingly disparate approaches in political science and economics. However, there are unifying assumptions among the authors that fit in the category. Of particular importance here are the assumptions that, 1) institutions structure political and economics processes in ways that are independently causal regarding outcomes; and 2) the structures of property rights and of the relationships between state and civil society in general are critical determinants of differential national patterns of technical change and diffusion. For examples of such arguments, see James G. March and Johan Olsen. "The new institutionalism: Organizational factors in political life", *American Political Science Review*, v. 78, n. 3, (September, 1984): pp. 734-749; Douglass C. North, *Structure and Change in Economic History*, (New York: W. W. Norton, 1981; and Douglas C. North and Robert Paul Thomas, *The Rise of the Western World: A New Economic History*, (Cambridge: Cambridge University Press, 1973). Less self-consciously "institutionalist" discussions that reach essentially similar conclusions can be found in David Landes, *The Unbound Prometheus: Technological Change and Industrial Development in Western Europe from 1750 to the Present*, (Cambrdige: Cambridge University Press, 1969); and Nathan Rosenberg, *Inside the Black Box: Technology and Economics*, (Cambridge: Cambridge University Press, 1982).

4 For purposes of the present conference, I do not address directly the role of Japan and other important nations in this process. However,

economies of scale and the integration of diverse publics into national fabrics. [5] Thus, state-run Ministries of Posts and Telecommunications (PTTs) (or in the American case, the regulated system of the American Telephone and Telegraph Co., or AT & T) were monopoly providers of services and monopsony purchasers of equipment.

This shared configuration of state-society relations shaped an incremental pattern of technical change, and yielded services that were clearly delineated from each other, and were homogenous both within categories (ie. telephony and telegraphy services were internally undifferentiated) and across member nations.[6] Global service markets were fragmented into mutually exclusive sovereign domains, and therefore completely non-competitive. Equipment markets were dominated by an oligopolistic cartel of indirectly state-supported firms. Intergovernmental regime collaboration, while sometimes marked by squabbles over technical standards, the Marconi radio monopoly and the like, was much less difficult than in other international issue-areas. This functionalist collaboration consisted primarily of interconnecting national networks and sharing revenues within the framework of the International Telecommunication Union (ITU).

The second thesis is that this stable international consensus became unglued in the 1970s by pressures unleashed in the United States during the 1960s. The institutional changes of the information revolution slowly transformed the technologies and markets for international telecommunications and information transfer. The overarching feature of this transformation was the merger of telecommunications and computers (informatics) to create telematics, unified systems for the geographically-dispersed production and transfer of many new forms of information.[7] Transnational telematics systems now served as the core for the integrated global management of automated offices and factories by facilitating a new form of information transfer: transborder data flows (TDF).[8]

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[5] The theory of natural monopoly is explicated in W. W. Sharkey, *The Theory of Natural Monopoly*, (Cambridge: Cambridge University Press, 1982). The question of whether the concept remains applicable in international communications is examined in Hans Begendorff, Torsten Larsson and Ruben Naslund. "The monopoly vs. competition debate", *Telecommunications Policy*, (December, 1983): pp. 297-308; Henry Ergas, "Regulation, Monopoly and Competition in the Telecommunications Infrastructure", paper presented the OECD's Second Special Session on Telecommunications Policy, Paris, November 18-20; and Eli M. Noam, "Telecommunications policy on both Sides of the Atlantic: Divergence and outlook", in Marcellus Snow, ed., *Marketplace for Telecommunications: Regulation and Deregulation in Industrialized Democracies* (New York: Longman, 1986), pp. 255-274.

[6] For a parallel manner of framing the problem, see, Ann Hutchinson Reid, "Trade in Telecommunications Services: The Current Institutional Framework and the Potential for Change". Paris: OECD, ICCP(85)12, September, 1985.

[7] These internationally accepted terms are derived from French; *informatique* refers to computers and their social environments, *telematique* to the their integration via telecommunications.

[8] Transborder data flows are digitally-encoded, machine-readable units of information in which such functions as transmission, storage, or processing take place in more than one country.

The rise of telematics had critical effects on technologies, markets and politics. Technical change took on the revolutionary attributes of the computer industry: equipment and services evolved rapidly, became technically indistinguishable from each other, and diversified both within categories and across national territories. Markets became competitive and conflictual, as the balance of industrial power shifted away from the governments and state-led equipment producers that had historically dominated communications, and toward American-based multinational enterprises (MNEs). Politics became divisive, as the U.S. government unilaterally altered its pattern of interest organization and ideology by moving toward a market-based approach to telecommunications regulation; and as the private use of telematics for transborder data flow transformed information flow from an innocuous technical issue into a highly charged global problem.[9]

As a result, regime cooperation in the 1970s and 1980s has become difficult because of the increasing divergence in state-society relations between liberal America and its foreign counterparts. Whereas in the past cooperation was possible because all states agreed on *ends*, if not fully on *means* (the U.S. preferring a private monopoly carrier to a public PTT), today fundamental discord exists as to what *social purposes* should be promoted by communications regimes. The United States has internationalized turbulent and divisive patterns of technical change, and has pursued diplomatically nothing less than the complete restructuring of global communications markets and their governing institutions, as well as the establishment of American hegemonic leadership to ensure those outcomes.[10]

The third thesis is that the United States has been unable to translate its preponderant power capabilities into control over regime outcomes. The non-

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[9] MNEs use TDF for a wide variety of global operations, including corporate planning and development (market analysis, host country macro-economic assessment, and strategic investment), financial management and accounting (budgeting, forecasting, cash-flow analysis and global asset transfers), marketing and sales (pricing, advertising, forecasting), manufacturing and production control (inventory control, coordinated processing, materials planning), administrative management (personnel deployment, evaluation and contract negotiations), and so forth. For a description of such practices, see United Nations Centre on Transnational Corporations, *Transnational Corporations and Transborder Data Flows: A Technical Paper*, (New York: UNIPUB, 1981).Critical discussions of such MNE activities can be found in Alain Madec, *les flux transfrontieres de donnees: vers une economie internationale de l'information?*, (Paris: La Documentation Francaise, 1982); and Herbert I. Schiller, *Who Knows: Information in the Age of the Fortune 500*, (Norwood, NJ: Ablex Publishing Co., 1982.

[10] In the vision of the *nouvelle defi americaine*, telecommunication and related equipment markets, long fragmented by extensive tariff and non-tariff barriers, would be integrated; telecommunications services, historically the exclusive province of the PTTs, would be subject to competitive provision; and the widening range of new computer-enhanced information processing and transfer services would flow freely over transmission networks. These changes would be codified by restructuring extant institutions, such as the telecommunications services regimes of the ITU and the International Satellite Organization (INTELSAT), and by creating new arrangements for equipment trade and information transfer under the auspices of the OECD and the GATT. Interestingly, the U.S. has endeavored to insulate the negotiations from one of the major institutions involved in the flow of mass media information: the UNESCO.

fungibility of American hegemony from other issue-areas into communications is explained firstly by this divergence on social purpose between the U.S. and Europe, and only secondly by the structural distribution of power in the field.[11] The institutional legacy of 120 years of international communications is that foreign PTTs and their societal supporters (the "postal industrial complex") have become firmly entrenched in their national policy processes.[12] These agencies have mustered all the material resources at their disposal to resist American-sponsored MNE incursions into their jurisdictions, and have adamantly defended the continuing utility of the traditional regulatory ideology. Further, they have successfully coordinated their negotiating positions on bilateral and regional bases. Particularly important in this regard has been the Conference of European Posts and Telecommunications Administrations (CEPT). And they have operated as an effective bloc in international fora, placing the normative burden of unilateral defection from the traditional consensus squarely on American shoulders.

The fourth thesis is that while the above discussion presents a somewhat bleak picture, the practical impact of these centrifugal pressures has been partially mitigated by strong centripetal forces. Despite divergent interests and a turbulent organizational environment, regime cooperation has been sustained, albeit at a collectively-suboptimal level. The technical requirements of interoperability in the international telecommunications network, and the effects of state reputation and fears of reciprocal action by other governments, have attenuated the possible incentives to completely "defect" from the arrangements. All states remain committed to sustaining the search for order in the new "worldeconomy" under the aegis of extant

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[11] While structural modes of explanation are predominant in post-behavioralist political science, they too frequently are employed in a deterministic fashion. Human will is often capable of overcoming structural constraints, depending on the availability of room to maneuver and the artfulness of statecraft. Thus, another impediment to the realization of American objectives has been the managerial style of U.S. foreign policy. The fragmentation of liberal American society is roughly paralleled within the government. International communications policy has always involved several different bureaucracies, but the complexity and breadth of telematics has greatly expanded the number of players. Today over twenty federal agencies are active, all of whom have advanced their particularistic and sometimes incompatible objectives in communications policy. Among these are the Departments of State, Commerce and Defense, the National Security Council, the Central Intelligence Agency, the U.S. Trade Representative and the Federal Communications Commission. As a result, the U.S. government frequently enters international negotiations with over-sized delegations that advance internally inconsistent positions. This incoherence has made it easier for foreign opponents to play those positions off of each other, challenge the intellectual justifications of the liberalization agenda, and generally outmaneuver the United States at key junctures.

[12] The felicitous term is used in Noam, 1986.

institutions.[13] As a result, collective action continues, though the regimes have undergone a process of deformalization and downgrading to lower levels of institutionalization that may give greater sway to techno-market forces in the future.

The fifth and final thesis concerns the differential capacities of the principle international regimes to manage the divergence between the United States and its European counterparts. My contention is that the INTELSAT regime for satellite communications has fared better than has the telecommunications regime of the ITU, which in turn has fared better than the informal agreements that once pertained to information transfer. Three factors in particular are isolated to explain these different patterns of regime adaptation: the costs, diplomatic as well as economic, of non-cooperation; the nature of the issues at stake; and the institutional attributes of the three arrangements.

I. INTERNATIONAL REGIMES AND WORLD ORDER.

The term, "international regimes" has become such a common part of the lexicon of international politics that one might assume its usages and meanings to be completely consensual and non-problematic. Unfortunately, like the terms "power", "interdependence", and "imperialism", this general consensus on intuitive meanings quickly erodes when we ask more specific and refined questions. If one asesses the various international regimes in operation today, one is struck by their variety in terms of their forms, functions, origins and other key attributes. So to systematically assess the current and future prospects for world order in the field of international communications and information, it is necessary to explicate the precise meanings of "international regimes". In this section, I will attempt to put some flesh on the bones of the concept by listing some of the key institutional attributes according to which regimes may be compared and contrasted.

International regimes may be defined *as sets of implicit or explicit principles, norms, rules, and decision-making procedures around which actors' expectations*

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[13] For the view that technological and market changes are producing a more fully integrated, transnational economy that complicates but necessitates international cooperation, see, Albert Bressand, "Mastering the 'worldeconomy'", *Foreign Affairs*, v. 61, n. 4, (Spring, 1983): pp. 745-772; and Juan F. Rada, "Advanced technologies and development: Are conventional ideas about comparative advantage obsolete?", *Trade and Development: An UNCTAD Review*, n. 5, (1984): pp. 275-296.

converge in a given issue-area of international relations.[14] Elaborating on this definition, Stephen Krasner points out that, "Principles are beliefs of fact, causation, and rectitude. Norms are standards of behavior defined in terms of rights and obligations. Rules are specific prescriptions or proscriptions for action. Decision-making procedures are prevailing practices for making and implementing collective choice."[15] In other words, principles are the basic assumptions about the nature of the problem to be addressed; norms are the broad guiding goals a regime is to promote; rules are the detailed injunctions according to which states must act to comply with the norms; and decision-making procedures are the specific policy-making steps required to enact the rules.

What is the place of regimes in the *hierarchy of international ordering mechanisms?* John Gerard Ruggie has proposed a taxonomy of three types of international institutionalization, ranging along a continuum of ascending levels of behavioral centralization. At the lowest level of institutionalization are what could be called "epistemic communities", or convergent action orientations based upon a shared definition of the international situation to be addressed. Borrowing from the works of Michel Foucault, Ruggie defines epistemes as "a dominant way of looking at social reality, a set of shared symbols and references, mutual expectations and a mutual predictability of intention." Epistemic communities, then, "consist of interrelated roles which grow up around an episteme; they delimit, for their members, *the* proper construction of social reality."[16] The next level, international regimes, goes beyond shared ways of understanding and acting in a global issue-area, in that they comprise sets of specific prescriptions and proscriptions that govern national action in a decentralized fashion. At the highest level of institutionalization are formal intergovernmental organizations, which employ centralized and hierarchical procedures for decision-making and action toward some specified goal.

In many cases, these three levels of institutionalization are integrally related:

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14 This is the consensus definition used by the contributors to an influential volume that institutionalized the analysis of international regimes in American political science. See, Stephen D. Krasner, ed., *International Regimes*, a special issue of *International Organization*, v. 36, n. 2 (Spring, 1982). An expanded version of this volume was in 1983 by Cornell University Press; page citations in this paper will be to the earlier text. The first explicit discussion of regimes in the discipline was, John Gerard Ruggie, "International responses to technology: Concepts and trends", in Ruggie and Ernst B. Haas, eds., *International Responses to Technology*, a special issue of *International Organization*, v. 29, n. 3 (Summer, 1975), pp. 557-584. Ruggie defined international regimes as, "a set of mutual expectations, rules and regulations, plans, organizational energies and financial commitments, which have been accepted by a group of states." Ruggie, 1975, p. 570. A later definition was offered in an influential book by Robert O. Keohane and Joseph S. Nye, *Power and Interdependence: World Politics in Transition* (Boston: Little, Brown, Inc., 1977). Keohane and Nye define regimes as, "sets of governing arrangements" that include "networks of rules, norms, and procedures that regularize behavior and control its effects." Keohane and Nye, 1977, p. 19.

15 Stephen D. Krasner, "Structural causes and regime consequences: regimes as intervening variables", in Krasner, ed., 1982, p. 186.

16 Ruggie goes on to say that epistemic communities are defined by, "bureaucratic position, technical training, similarities in scientific outlook and shared disciplinary paradigms". John Gerard Ruggie, 1975, pp. 569-570.

the international telecommunication regime, for example, has been based on shared technical and regulatory concepts and roles, comprises a convention and a multitude of regulations and recommendations specifically detailing appropriate national actions, and employs an intergovernmental Secretariat to perform administrative tasks. On the other hand, there is no logically necessary reason for these levels to be so coupled. Certainly there are areas of international life where shared understandings and action frameworks are not concretized via an accepted set of behavioral rules, or where regimes are in no sense administered by a formal organization, or where formal organizations exist but are not accompanied by regime constraints on national action.[17]

Similarly, many regimes do not operate in isolation, but are instead *nested* with or within other functionally-related regimes. Nesting with other regimes occurs when two or more instruments designed for separate purposes nonetheless impinge on each other's domains. Bringing telecommunications and information services under the aegis of the GATT would clearly have implications for the ITU, as do the IMF's new lending programs for the World Bank. As these examples suggest, such inter-regime nesting may be complementary and thus enhance each arrangement, or it may be substantively contradictory and detract from one or the other. Nesting with other regimes occurs when highly-specific instruments derive (and sometimes differ) from broader arrangements. For example, the sectoral Multifiber Agreement is informed by, but contains exceptions from, the logic of the cross-sectoral GATT. Again, such intra-regime nesting may be stable or unstable, depending on the extent to which the specific and general agreements are substantively coherent. Too many exceptions in the former from the logic of the latter leaves the door open to periodic political challenges.

The most obvious and important dimension according to which regimes can be differentiated is their substantive nature, or the national *purposes* they serve. In international economic affairs, the major distinction is between regimes designed to govern competition in world markets, and regimes designed to directly allocate some set of values through administrative procedures.[18] Of course, these are ideal types, and many regimes employ a mixture of both types of norms and rules. To the extent that the ITU has historically been based on shared national commitments to the monopoly provision of services, the telecommunications regime has been allocative; yet, to the extent that CCITT rules and technical standards favor some technologies and producers over others, they can be viewed as mechanisms of (cartellized) market governance. And as the debate over radio frequency and geostationary orbit allocations demonstrates, the precise mix between market and allocative governance can be subject to acute political contention when some nations feel more or less favored by one or the other principle. Within these two broad categories, one may further trichotomize regime purposes to include those designed to acquire new capabilities, as in the development of INTELSAT; to effectively using extant capabilities, as with the

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17 For discussion, see, Oran R. Young, "Patterns of International Cooperation: Institutions and Organizations", paper presented at the Annual Convention of the American Political Science Association, Washington, D.C., August 28-31, 1986.

18 For a discussion of liberal vs. allocative regimes, and an application to North-South negotiations, see, Stephen D. Krasner, Structural Conflict: The Third World Against Global Liberalism, (Berkeley, CA: The University of California Press, 1985).

CCIRR rules; and to cope with the untintended externalites attendant the use of capabilities, as in the OECD's efforts to establish rules for transborder data flow.[19]

Far from being neutral mechanisms for the adjustment of competing claims, international regimes have distinct *distributional biases*. All intergovernmental arrangements, including international law, are constituted by the interests of their participants. In that process, it is usually the most powerful governments that shape the norms and rules, both through direct (advocacy) and indirect (threats of non-participation) influence. In turn, those norms and rules delimit terrains of action in which barriers to entry preserve the prerogitives of some actors while excluding others.

The *general functions* of regimes in the international system are twofold. First, regimes constrain states by obligating them to behave in ways they might not otherwise choose. In an anarchical world order, the basic compulsion of states is to practice self-help; that is, to seek to maintain autonomous control over their operational environments by unilaterally promoting their individual interests. When national actions are not coordinated, problems may arise from the over-use of resources, non-identical preferences regarding the terms of market competition, or through political market failure, such as the underprovision of mutually beneficial collective goods. Like domestic institutions, international regimes provide procedures for the aggregation of diverse interests, the reconciliation of competing claims, and the resolution of collective action problems. Perhaps more importantly, they can lead states to internalize normative injunctions into their domestic policy-making calculus in such a way as to preclude national actions that might later require conflict resolution.

Second, regimes empower states by providing them with communally recognized rights to pursue courses of action that might otherwise be viewed as contrary to the comity of international practice.[20] Such entitlements may be exclusive, as are property rights over radio frequencies and territoriality rights to interrupt transborder data flows; or inclusive, as are use and access rights to ocean and space navigation. Regimes also empower states by providing resources and economies that would be difficult to attain on an *ad hoc* basis. The utility of a national telecommunication network is obviously greatly ehhanced by interconnecting correspondent relationships, just as the construction of national satellite systems has been greatly facilitated by the INTELSAT consortium.

More *specific functions* of international regimes comprise the reduction of costs and and uncertainty.[21] First, multilateral regimes greatly reduce the transaction costs that would inhere in setting up a multiplicity of operational relationships on an *ad hoc*, bilateral basis. They provide network economies and returns to scale by facilitating side payments and trade-offs through the linking of discrete issues of

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19 This trichotomy is used in Ruggie, 1975.

20 For one of the few studies to pay as much attention to regime empowerment as it does regime constraint, see, Friedrich Kratochwil, *Rules, Norms and Decisions: On the Conditions of Practical and Legal Reasoning in International Relations*. (forthcoming)

21 The reduction of transaction and information costs via. international regimes is stressed most forcefully in, Robert O. Keohane, "The demand for international regimes", in Krasner, ed., 1982, pp. 325-355.

interest to member states. Second, joint anticipatory action can preclude potential negative externalities ensuing from the uncoordinated actions of large numbers of states. Third, regimes reduce the informational costs of monitoring processes in the multitude of international issue-area that impinge on the attainment of state goals. Transgovernmental contacts develop through such specialized mechanisms as the CCITT or the OECD's ICCP committee that provide information essential to the formulation of national policies, information that would be too costly to attain and manage unilaterally. Forth, and relatedly, regimes greatly enhance the learning processes through which states comprehend global issues and define and re-define their national objectives and strategies on a continuing basis.

Fifth, regimes reduce governments' uncertainties about each others' present and future behavior by providing mechanisms of mutual surveillance. On-going, institutionalized interaction enhances the binding power of present reputation because each state wants to preserve the moral authority with which to enter into future agreements of particular interest. The sunk costs of developing one's reputation can obviate for others the risks and vulnerabilities attendant interdependence, i.e. predation and unilateral defection from agreements. And regimes institutionalize the threat of legitimate reciprocity by setting forth specific circumstances in which a member or members of the international community may retaliate against a state which shirks its obligations.[22] In sum, regimes create a predictability of intent that allows each state to better plan its own activities. This function is particularly crucial in the case of telecommunications because of the high costs and long lead times involved in investing in national network development.

Regarding the *structure* of international regimes, institutional *scope* varies widely, and carries with it both benefits and liabilities. Regimes that cover a broad array of problems facilitate the linking together of disparate issues. Issue-linkages can promote cooperation if they are substantively coherent (the resolution of one necessarily implies the resolution of another), or if they simply allow the tactical trading of promises and side payments to bring hold-outs on board (mutual backscratching). On the other hand, the aggregation of difficult problems can retard cooperation, particularly if states are uncertain about the issues, the consequences of certain courses of action, and their own preference orderings.[23] This has clearly been the case in the OECD's negotiations on transborder data flow. Further, broad regimes may invite opportunistic states to make threats by imposing extraneous issue-linkages as the price for their agreement (blackmail). Both dynamics are frequently found in the ITU. Limited, issue-specific regimes need not endure these laborious dynamics, although their utility for states may be correspondingly smaller.

Parallel problems arise regarding the *domain* of regimes. Obviously, the larger the number of states involved, the greater the number of disparate policies and preference ordering that have to be reconciled to reach initial agreement. In principle, small "coalitions of the like-minded" should enjoy greater success than large

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[22] For a discussion of the constraining roles of reputation and reciprocity in international regimes, see, Robert O. Keohane "Reciprocity in international relations", *International Organization*, v. 40, n. 1, (Winter, 1986): pp. 1-27.

[23] The best discussion in the literature of the causes and consequences of issue-linkage in international regimes is, Ernst B. Haas, "Why collaborate? Issue linkage and international regimes", *World Politics*, v. 32, n. 3, (April, 1980): pp. 357-405.

memberships prone to bloc voting. Presumably this was one rationale for the decision of most advanced statesto discuss TDF in the OECD rather than the IBI; but the example shows that in practice, like-mindedness can be more apparent than real. Larger numbers also make it more difficult for members to monitor and sanction each others' compliance with and violations of regime rules. There is frequently the possibility that states will be tempted to engage in "free riding", reaping the benefits of the arrangement without paying the attendant costs. This is particularly problematic in the GATT. [24]And large numbers may make it difficult for a regime to flexibly adapt to changes in its operational environment, since there are more players with sunk investments in extant arrangements who must finesse the requisite adjustment costs.

In considering their impact on state behavior, probably the key dimension of international regimes is their *strength*. By strength we mean the extent cooperation is stable, in the sense of actual state compliance with the regime's injunctions. Regimes in which most states comply most of the time are strong; those marked by consistent violations are not.[25] Strength is frequently assumed to depend on the firmness of sanctioning mechanisms, although this is not logically necessary. States may remain largely in compliance even where there are no mechanisms for retaliation or other sanctions, if the regime is simply well-suited to their interests. Here the question of legitimacy is also crucial: regimes viewed as serving primarily the interests of a small number of states are more open to challenges as to what does and does not constitute a violation of the rules, and whether those rules are acceptable in any case.

A related issue is the *clarity and coherence* of regime injunctions. Regarding clarity, an agreement whose normative constraints and entitlements are vaguely defined is going to be subject to constant controversy, since members may then creatively interpret their latitude in undertaking certain courses of action. This problem is particularly acute with non-binding "gentlemen's agreements". The detailed contractual codification of rules in some document can help, but even then, semantic and interpretive problems may arise. Regarding coherence, stability requires consistency among and within a regime's principles, norms, rules and decision-making procedures. Contradictory ordering mechanisms will eat at the robustness of the regime, since states may violate one aspect of the agreement while remaining true to another. And difficult negotiation processes can lead to the "watering down" of key strictures, or their coupling with inconsistent claims. The OECD's Data Declaration is an unhappy example of insufficient clarity and coherence: seemingly any two parties to the agreement have different views of what it does and does not allow under various circumstances.

The *procedural* aspects of regimes also vary greatly, with important consequences. A key issue is which sorts of entities have what level of input. CCITT rules limiting full voting Plenary priviliges to the administrations of ITU members, and excluding user groups, arguably has had a substantial impact on the substance of the Committee's Recommendations. Similarly, the principle of, "one nation, one vote" is

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[24] Sanctioning problems in n-person cooperation are discussed in, Robert Axelrod and Robert O. Keohane, "Achieving cooperation under anarchy: strategies and institutions", in, Kenneth A. Oye, ed. *Cooperation Under Anarchy*, a special issue of *World Politics*, v. XXXVIII, n. 1, (October, 1985): pp. 226-254.

[25] As regime conditions such as strength are rather difficult to operationalize, defining thresholds along a continuum of regime states is a serious problem for analysts and policy-makers alike.

normatively preferable to weighted voting, but the cost of representativeness is often deadlock. The strength and legitimacy of dispute settlement mechanisms is also important to regime maintenance and adaptation. Formalized decision-making channels and implementation procedures can be a blessing when numerous, complex issues are at stake, but also a hinderance if sensitivities require non-commital, "off the record" consensus building.

A final structural dimension is the *degree of centralization* in state commitments to the performance of regime tasks. These commitments can take at least four institutional forms of increasingly integrated national behavior.[26] At the lowest level of centralization is a common framework that groups national behaviors together for the purpose of cross-reference and mutual surveillance, but which does actively harmonize policies. One could view the OECD Data Declaration as such an instrument. Second is a joint facility that actually coordinates policies to ensure conformity with broad standards of behavior, so as to realize network economies and minimize any negative externalities resulting from independent national actions. The ITU-based telecommunication regimes fit into this category. Third is a common policy that actively integrates, but does not replace, national actions in pursuit of a common goal. Significant Secretariat functions are common in such cases, and for the advanced states, INTELSAT is clearly of this variety. Fourth is a common policy that actually substitutes for national behavior. In issue-areas where sovereign territorial control is a paramount concern, such as in international communications, powerful states are unlikely to be reliant on such a mechanism. However, for much of the Third World, the INTELSAT regime does play such a role.

The *creation* of international regimes can follow a number of paths. First, they may be negotiated by states under the aegis of some intergovernmental organization. This explicit, formalized type is the one we are most used to thinking of, perhaps because it is the most empirically observable, perhaps because we like to believe that outcomes must be due to rational, purposive action. In any event, the telecommunications and satellite arrangements are obvious examples. In the language of game theorists, one might call these "regimes via contract", in which rights and duties are exchanged among governments in order to bind each other to a set of rules and exercise voice in each other's policy-making processes.

Depending on how narrowly one defines the concept, there may be other modes of regime creation. A second category could be called spontaneously organized regimes.[27] These would be implicit, non-formalized arrangements that emerge in a decentralized fashion during the course of international interactions. Unlike negotiated regimes, they do not involve detailed sets of rules and sanctions, but instead simply a routinized focal point for around which expectations form. As Oran Young puts it, such institutions, "are distinguished by the facts that they do not involve conscious coordination among participants, do not require explicit consent on the part of subjects or prospective subjects, and are highly resistant to efforts at social engineering".[28] One might call these "regimes via convention". Those (primarily

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26 The four levels are discussed in Ruggie, 1975.

27 To put the matter mildly, not all scholars are confortable with the conceptual elasticity of "spontaneously organized" regimes. Still, the notion has a long pedigree in international law, and has its influential proponents in political science.

28 Oran R. Young, "Regime dynamics: the rise and fall of international regimes, in Krasner, ed., 1982, p. 282.

American) observers who believe there to be an emerging regime for transborder data flow presumably must characterize it as being of this type. Third, regimes may be imposed by one or more powerful states. Some have argued that this may involve the use of force, as in the establishment of colonialism, although this may be a case of undue concept stretching.[29] A better example might be regimes consolidated via the international community's grudging acceptance of a dominant player's modus operandi; the role of IBM in computer technical standards comes to mind.

It should be noted that these means of regime creation are not necessarily mutually-exclusive in either a logical or temporal sense. Some international issue-areas may be governed by a mixture of negotiated and spontaneously emergent rules; this would seem to be the case with information transfer. And many non-Americans would be hard pressed to say that there is not an element of imposition in negotiated arrangements. Finally, some spontaneous regimes may later be codified as negotiated regimes.

For the present discussion, a key problem is the *adaptation* of international regimes to changes in their operational environments. In principle, as Robert Keohane points out, "regimes are easier to maintain than they are to create".[30] But in reality, regime adaptation can itself be very difficult, for at least two reasons. First, regimes are intergovernmental arrangements which, under conditions of international anarchy, can be torturous to construct. Before they can arrive at a compromise among their competing interests, complex negotiations with domestic constituencies, internal bargaining among state agencies, and a detailed evaluation of the global environment must take place within each member state. When that environment shifts, and particularly if there is widespread uncertainty about its new meaning, it can be costly for governments to re-evaluate and firm up their policies toward international cooperation. Hence, inertial attachments to extant institutions and carefully constructed compromises can be slow to be discarded. Second, in many cases, environmental change is the product of occurrences in private global markets that are difficult to monitor, much less control. There is often a mismatch between the rate and scale of such changes and the capacity of states to evaluate their significance, so that the design of new regulations lags well behind the processes to which they are to apply.

What then determines the capacities of regime commitments to be successfully redeployed? Three variables stand out in particular. The first is whether, and with what intensity, governments continue to believe that their goals can only be realized multilaterally under the new environmental circumstances. If the costs of exit or defection are judged to be greater than the gains of cooperation, states will be forced to stick out the search for a new focal point. Second, the nature of the issues is important. Some issues can be easily defined as logical extensions of matters already under the aegis of the regime; others present entirely new problems for which the extension of current solutions is clearly inoperable. Third, the nature of the regime instruments themselves is critical. Here we return to the above four level typology of behavioral centralization. Centralized institutions marked by extensive national commitments should, in principle, be most able to adjust at lower transactional and informational costs to member states. Accordingly, a common policy replacing national behavior

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[29] For a discussion of colonialism as a regime, see, Donald J. Puchala and Raymond F. Hopkins, "International regimes: lessons from inductive analysis", in Krasner, 1982, pp. 245-275.

[30] Robert O. Keohane, *After Hegemony: Cooperation and Discord in the World Political Economy*, (Princeton: Princeton University Press, 1984), p. 100.

should have greater success than one integrating member policies, which in turn should be more flexible than a joint facility and a common framework.

A final matter is that of regime *change*. Under what circumstances can we say that a regime has either evolved into a qualitatively new arrangement, or decayed to the point where one no longer exists. In the literature, distinction is commonly made between such a change *of* regime, and change *within* a regime. Change or a regime takes place when the broad principle and norms of a regime have been altered, so that cooperation is now geared toward the services of entirely new purposes. Change within a regime, or adaptation, occurs when those higher order principles and norms remain essentially unaltered, but the rules and decision-making procedures required to operationalize them have changed.

[* Note: when revising this first draft, I intend to include here a short review of the major theoretical approaches to the study of regime creation, adaptation and change, and to develop more systematically my own argument about the domestic sources of collaborative patterns in communications.]

II. TRANS-ATLANTIC DIVERGENCE AND ENVIRONMENTAL CHANGE.

1. The Pre-Divergence Era.

During the 100 years of its pre-liberalization existence, the international telecommunications regime experienced a stable pattern of evolutionary adaptation and growth. Its formal institutional context was the International Telecommunication Union, the world's oldest multilateral organization. Born the International Telegraph Union in 1865, it became the Telecommunication Union in 1932, and acquired its present structure in 1947.[31] A treaty organization, the ITU's Convention is periodically revised at the Plenipotentiary conferences, and the Consultative Committees perform the specific technical functions necessary to expedite its mandate.

Substantively, the regime's guiding principles and norms were (and are) set in the Plenipotentiaries. The overarching consensus was for a globally interconnected and high quality telecommunication system which provided acceptable end-to-end transmission on a non-discriminatory basis. The Consultative Committees' technical rules established standards specifying appropriate national practices. Decision-making procedures operationalized these injunctions; recognized national representatives, i.e. the PTTs and their private American counterparts, voted in Plenipotentiaries and

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[31] The ITU organization comprises the Plenipotentiary meetings, which are the ultimate authority; the General Secretariat, which performs essentially managerial functions; the Administrative Council, which performs house-keeping duties between Plenipotentiaries; the International Frequency Registration Board, which records nationally-announced frequency assignments; the International Radio Consultative Committee(CCIR), which attempts to set rules for frequency assignments and the allocation of the satellite geostationary orbit; and the International Telegraph and Telephone Consultative Committee (CCITT), which sets technical standards for equipment and services. For a description of the ITU's organs and functions, see, George A. Codding Jr. and Anthony M. Rutkowski, *The International Telecommunication Union in a Changing World*, (Dedham, MA: Artech House, 1982).

complied with the Committees' regulations in constructing and governing their domestic systems.

Unlike the regime for telecommunications (carriage), a regime for information transfer (content) was never codified in a single formal instrument. The conception of the ITU as a "technical" organ concerning carriage precluded the inclusion of detailed provisions in its Convention on the "political" issue of content. The absence of an institutional focus meant that the international status of information evolved in a variety of functional institutions of related concern. Of particular importance in this regard were the Convention of the Universal Postal Union (periodically amended by Plenipotentiaries, as with the ITU) and the Declaration on Human Rights adopted by the General Assembly of the United Nations in 1948.[32] Both instruments designated communications an issue of individual liberties, and sought to preclude its suppression. By inference and cross-reference in interpretation, a custom or loose quasi-regime of broad norms without specific rules and decision-making procedures evolved and gained the recognition of states.[33]

The central substantive issue was the rights and obligations of states in regulating the telephone and telegraph communications of private and public users. The ITU Conventions consistently reaffirmed the rights of governments to interrupt or monitor transmissions when deemed necessary for "National Security", a privilege invoked by all states in wartime. While authoritarian regimes interpreted this norm broadly in peacetime as well, the democratic states generally observed a policy of non-interference.

Both "regimes" (if the term can be used in the case of information) adapted to new technical circumstances and uses fairly easily. In telecommunications, new technologies required new rules or technical standards, which were cooperatively designed in relation to stable principles and norms. Information transfer, in contrast, was relatively unaffected by technical advance, since quantitative improvements in telephony and telegraphy techniques did not qualitatively alter the substantive nature of voice and record transmissions. Above all, the absence of market competition made both regimes politically non-divisive and functionally "successful".

This stability and success at the international level was due to institutional convergences at the (trans)national level. In the pre-telematics era, all nations agreed as to the ends or social purpose of communications and its global governance. The extension and consolidation of networks was deemed essential to national security and modernization, so state monopoly control seemed appropriate. The provision of services to the public was deemed a mechanism of social integration, so governments worked to ensure universal connections at affordable rates via cross-subsidization. States structured social interests directly to effect these ends: PTTs defined markets and organized business/labor coalitions to ensure stability. The justificatory ideology or regulatory doctrine was that the new technologies were scarce resources and "natural monopolies" in which only states could realize economies of scale and system unity.

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[32] These and other relevant international instruments are contained in, Edward Ploman, ed., *International Law Governing Communications and Information*, (London: Frances Pinter, 1982).

[33] The concept of a quasi-regime is developed in, Hayward R. Alker, Jr., "A methodology for design research on interdependence alternatives", International Organization, v. 31, n. 1, (Winter, 1977): pp. 29-64.

The convergence of domestic institutions and social purposes defined a pattern of technological advance that facilitated cooperation. Monopoly governance led to the incremental development of telephony and telegraphy equipment and services that were substantively distinguishable, homogeneous, and the same in each country. This may have been unfortunate from a purely technical point of view: the rate of change was paced by constraints on public sector capital and the necessity of amortizing extant investments across a broad range of network elements; the direction of change was skewed toward compatibility with entrenched domestic systems and levels of technical standards with which all international correspondents could comply; and the diffusion of change was limited by the nationalistic equipment procurement policies of the large countries, which fragmented the potential global market into mutually-exclusive domains. However, this pattern of technical change and diffusion facilitated non-competitive functionalist cooperation at the global level.

2. American Divergence and Environmental Change.

The position of the U.S. in the consensus was always awkward. While the U.S. shared the goals and regulatory doctrine of its foreign correspondents, it differed from them substantially regarding means. American telecommunications was made the exclusive province of the regulated private monopoly ATT in the voice market, and regulated private oligopolies such as Western Union in the record or telex market. As a result, American policy-makers were from the start suspicious of the foreign PTTs, particularly the Europeans, which they fealt mistreated the American firms in correspondent relationships.

U.S. participation in the ITU was therefore somewhat problematic. From the outset, the U.S. suspected the PTTs of wanting to impose excessive tariffs on telecommunications and restrictions on information flow, while slowing American technical advance with least-common-denominator standards. The government proclaimed its inability by law to require American carriers to comply with ITU recommendations, and consistently refused to adhere to the Conventions. Foreign governments, desirous of full U.S. participation, offered multiple concessions to the Americans, including the creation of a special regulatory "zone" of limited obligations. But nevertheless, even after the Communications Act of 1934 empowered the state to do so, the U.S. never signed the telegraph agreements, and only signed portions of the telephone and radio arrangements (with special waivers of key duties) in the 1970s. The net effect of American foreign policy in this early period, then, was to restrict the scope and strength of the telecommunications regime and the organizational powers of the ITU, without substantively altering the status of information.[34] In light of this regime role, it is logical yet somewhat ironic that techno-market changes originating in the U.S. would soon revolutionize global communications.

In the early 1970s, the stability of the first 100 years was progressively undermined by pressures unleashed in the American information revolution. The process is too complex to disentangle here, but the inter-institutional relationships of the post-war "military industrial complex" (for lack of a better phrase) and the

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[34] For an assessment of the impact of America's selective approach to ITU commitments, see, Anthony M. Rutkowski, "Deformalizing the international radio arrangements", *Telecommunications Policy*, v. 7, n. 4, (December, 1983): pp. 309-316.

American system of property rights ensured that the benefits of large-scale research and development devolved to the private sector. Particularly in the fields of computers and electronics, large businesses were able to benefit from the commercialization of innovations spurred on by public research and development subsidies.

Initially, this was not the case in the regulated field of telecommunications. However, as U.S.-based multinational enterprises (MNEs) expanded into unfamiliar and dispersed foreign domains, they developed new needs for a differentiated range of sophisticated information processing and transfer equipment and services. Further, geographically-dispersed and information-intensive firms in such fields as banking, insurance and petroleum were quick to see the potential benefits of hooking their autonomous computer facilities together via telecommunications, as the Department of Defense had already done.

To realize these possibilities, U.S. firms that were users of such systems organized themselves into an extremely effective lobby to pressure the federal government to open the communications markets. They argued that without relaxation of ATT's monopoly and greater leeway to attach and control private components in the public network, "the consumer" would be unable to achieve a higher level of efficiency that would be beneficial for the economy as a whole. Over a twenty year period beginning in 1956, the Federal Communications Commission complied with their wishes and liberalized the markets for supply and the restrictions on the private use of telematics systems.[35]

The twin forces of the internationalization of capital and the deregulation of the American system revolutionized the pattern of technical change. Supply markets underwent rapid change, as the *locus of dynamic demand shifted* from the traditional monopsony purchaser, ATT, toward a multitude of large users with specialized design requirements. The overarching phenomenon was the birth of telematics. Subsidiary changes included the digitalization of networks to carry a vastly expanded range of information types with greater speed and accuracy; the development of microelectronics, which radically reduced the size and cost of equipment attached to networks; and the growth of satellite systems, which competed with and superseded many terrestrial networks. The rate of technical change now accelerated continuously: each innovation set off a new and dynamic cycle of development in related components and services, the direction of change became skewed toward MNE

35 An examination of FCC dockets reveals the extraordinary lobbying efforts of user firms in the deregulatory process, and and the consistant manner in which the Commission justified its actions in terms of their needs. While members of the FCC and the business community would undoubtedly dispute the conclusion, the interplay of ideology and interests in the deregulatory process seems rather tight. For a radical analysis that makes a similar point more sharply, see, Dan Schiller, *Telematics and Government*, (Norwood, NJ: Ablex Publishing Co., 1982).

users' specialized needs, and the diffusion of change became governed by a heterogeneous and volatile market structure.[36]

The new markets developing in the U.S. were internationalized in an historically unique three-stage process.[37] First, American-based MNE users in various information-intensive industries led the way in the global diffusion of the new systems via their internal operations. Previously they had convinced foreign PTTs that the insufficiencies of public telephony networks for their large-volume purposes required them to construct independent and customized networks built on lines leased at flat rates. With the development of telematics, these private networks were transformed into elaborate information production and transfer systems that allowed MNEs to organize their dispersed operations systematically on a distance-insensitive basis.

The extension of these new internal networks created fresh demand for related components and services not provided by the PTTs and regulated domestic firms. Soon a second stage began, in which specialized computer services and communications firms were established and sought market entry. As the PTTs typically lacked the technology and expertise to compete, there were limits to how far they could justifiably go in squelching these developments. Witnessing the erosion of their once exclusive positions, they lobbied their governments for hundreds of millions of dollars with which to establish their own new equipment and services offerings. After numerous setbacks, they responded in the 1970s by upgrading the public networks in a losing battle to stem the migration and "cream skimming" of lucrative traffic. However, the die was cast: comparatively static national public entities and markets were now increasingly enveloped in dynamic international private markets that would set the tone for technical advance and the extension of new services in the years to come.

The third and final stage was also rather unique, and reflects the increasingly interconnected nature of the markets. In the early 1970s, many user firms began to convert their heavily capitalized internal leased lines into external networks. The process began with MNEs claiming the need for new *inter*-corporate communications possibilities with which to compete in their various markets. These systems were then easily altered to provide new services to smaller and less information-intensive firms that did not have the means to satisfy their telematics needs internally. Soon, such users as General Motors, American Express and Mobil Oil had become "information businesses", providing advanced services in competition with the PTTs and their protected domestic producers. And cross-entry did not stop there; many users later began to move into the production of equipment, data bases and the like.

What is particularly interesting about these changes in supply markets is the relative shift in power that drives them. In the past, the existence of a shared "natural

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[36] The phenomenon of "bunched" innovations is particularly important in the field of telematics. Never before has technical change in one set of components and services translated so rapidly into technical changes and market dynamism in related components. This has obvious consequences for governments that would seek to channel the direction of change into controllable directions so as to protect extant investments; the market may make such strategies inoperable. For a discussion of bunching, see Christopher Freeman, John Clark, and Luc Soete, *Unemployment and Innovation: A Study of Long Waves and Economic Development*, (London: Francis Pinter, 1982).

[37] It should be noted that while the three-stage depiction is a useful heuristic device, the actual process was not as clean and sequential as I suggest.

monopoly" regulatory system among all the major states gave large producers and monopsony PTT purchasers virtually complete control over the rate and direction of techno-market change, since innovations had to be incorporated into heavily capitalized extant public networks. But in the past two decades, the internationalization of American deregulation has made large corporate *users* an increasingly potent source of demand for new systems. Indeed, it is their changing needs that today seem to be shaping the evolution of supply markets.

The importance of telematics to corporate users can be briefly illustrated by examining its impact on corporate functions and structures. Regarding the former, strategic planning is facilitated by the new capacity to systematically monitor and match external market and internal operational information. Companies with branches around the globe can now receive, process and transfer information on a 24 hour, distance insensitive basis with an eye toward current developments requiring rapid responses. Financial management too has become infinitely more effective, as the cash flows and currency exposures of firms and their branches can be instantly adjusted. And once products are selected, research and development can be rationalized across the entire global operation, blending a more rigorously defined internal division of labor with on-line external inputs.

Efficiency gains are also visible in the production and marketing stages. Telematics makes it easier to reintegrate production around a common technological base, so that a wider variety of specialized outputs can be assembled with minimal re-tooling and both economies of scope and scale. Complex packages of interrelated goods and services can be quickly assembled, and product life cycles can be reduced. Marketing, distribution and maintenance are similarly enhanced, as orders can be filled and tracked on a continuous, communicative basis. No wonder that one prominent corporate spokesperson has called global telematics the "lifeblood of virtually every major economic activity."[38]

Regarding corporate structures, the opportunities presented by telematics have made feasible a variety of institutional innovations designed to facilitate strategic repositioning in increasingly competitive global markets. Most major firms have dramatically increased the resources and intra-organizational status of their communications and information departments in recent years. Telematics planning has moved squarely into the purview of top management, and has become an essential competitive tool. Budgetary outlays have escalated proportionately; to take one particularly sharp example, Citicorp, the owner of the world's largest intra-corporate network, spent $3.3 billion between 1979 and 1984 to upgrade its systems and services.[39]

Obviously, the major efficiency gains associated with telematics involve the radical reduction of transactions costs. In particular, the capacity to globally coordinate the above activities has increased management discretion in choosing

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38 Joan Spero of American Express, quoted in William J. Drake, "Canada-US: Free data services zone?", special report in, *Transnational Data Report*, v. VII, n. 5 & 6, August-September, 1984: p. 304.

39 Figures cited in, Karl P. Sauvant, *Services and Data Services: The International Politics of Transborder Data Flows* (Boulder: Westview Press, 1986), pp. 110.

between markets and hierarchies as organizational forms.[40] On the one hand, hierachy becomes an increasingly effective strategy for very large firms that have built up extensive internal communications systems and diverse goods and services capabilities, since these can be rationalized according to a company-wide logic.

On the other hand, telematics also makes reliance on markets a good deal less problematic than in the past. Many firms are finding that the contractual uncertainties associated with dependence on outside suppliers for inputs can be offset by inter-corporate telematics, since firmer and more transparent linkages can be now be formed. There is a growing body of evidence that many companies are pursuing strategies of externalization and de-verticalization, whereby numerous specialized functions once performed internally can be effectively farmed out to remote suppliers.[41] Outsourcing reduces redundancy, risk and costs across diverse corporate branches, while providing access to customized inputs that benefit from economies of scale. A related trend is the growth of the so-called New International Corporate Arrangements, such as inter-corporate alliances and joint ventures, as a method of sharing risks, product development costs and markets. These arrangements can now provide almost the same levels of certainty once associated only with internal hierarchy.

The result is that the lucrative and dynamic global markets in telecommunications and information transfer services and equipment lack all the clarity and definition regarding players and activities which has historically been required for regulation The complexity of their interrelationships therefore poses important analytical and policy challenges. Telecommunications is an essential infrastructure; information is increasingly the critical factor of production. As such, their importance must be assessed in light of their n-order multiplier effects across *all* economic sectors.

Adding force to the opening of the global markets were two key political shifts. First, emboldened by their successes in the United States, the American user community formed transnational business alliances with foreign firms in order to convince the latter to lobby their governments for liberalization. During the 1970s, the International Telecommunications Users Group, the Telecommunications and Transborder Data Flow Committee of the International Chamber of Commerce, the Association of Data Processing Service Organizations and other organizations became dominant forces on the communications policy scene. By providing information, technical studies and logistical support, they made their presence felt through two channels. Direct influence involved supporting individual companies in disputes with PTTs, and also presenting the latter with unified policy statements and collective

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40 For the seminal discussions of markets vs. hierarchies, see, Oliver Williamson, *The Economic Institutions of Capitalism: Firms, Markets, Relational Contracting,* (New York: The Free Press, 1986), and Williamson, *Markets and Hierarchies: Analysis and Anti-trust Implications,* (New York: The Free Press, 1975). For an applications to telecommunications and information technology, see, Thomas W. Malone, JoAnne Yates, and Robert I. Benjamin, "Electronic Markets and Electronic Hierarchies", Cambridge, MA: Sloan School of Management, M.I.T., November, 1986.

41 For discussions of these trends, see Henry Ergas, "Corporate strategies in transition", Alexis Jacquemin, ed., *European Industry: Public Policy and Corporate Strategy,* Oxford: Oxford University Press, 1984), pp. 327-342; and Albert Bressand, "International Division of Labor in the Emerging Global Information Economy: The Need for a New Paradigm", Paris: Project Promethee, May 1986.

lobbying in national and multilateral fora.[42] Indirect influence was equally important: by encouraging users to purchase from competitive suppliers where possible, and to locate their facilities in comparatively liberal climates, these organizations helped move the markets away from PTT control.

The second shift of the 1970s was the new resolve of the U.S. government to promote the liberalization of international markets and the transformation of their governing regimes. The involvement of the American state in international communications comprises three interrelated roles: as a regulator, a user, and a maker of foreign policy. We have already mentioned above the first dimension of FCC deregulatory efforts. Another way in which the United States has promoted change is in its capacity as a user of communications goods and services. Responding to the limitations of its systems in conducting routine and crisis diplomacy, the government too developed global telematics networks based on its domestic and foreign leased lines. Of particular note is the State Department's Diplomatic Telecommunications System, initiated in 1963 as a response to the transmission failures of the Cuban Missile Crisis. The DTS is now the communicative core of the government's global operations, carrying thousands of voice and record (data, facsimile, etc.) messages daily among various agencies world-wide. The military services also operate a number of similar systems in performing their national and inter-allied command, control, communications and information (C3 I) functions.

While the significance of these systems for America's strategic posture and diplomatic functions is well known, their impact on global communications policy is less often recognized.[43] Historically, the foreign service and military had developed comfortable working relationships with European and other PTTs in an effort to ensure secure and reliable telecommunications. But in the 1970s, new technical, budgetary and ideological forces converged, and the government began to utilize many of the same options now preferred by the MNEs. While still reliant on the PTTs for basic terrestrial transmissions, the "internationalized state" has employed systems and services such as on-house earth stations and specialized satellites that bypass public networks, privately-provided computer-enhanced information processing and transfer services, switching and terminal equipment purchased outside the postal industrial complex, etc. Arguably, this public sector behavior reinforces trends underway in private markets.

Also important is the third role, the government as maker of foreign policy. The U.S. has adamantly supported the new corporate objectives. One might be tempted to

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[42] For an influential sample of these multinational lobbies' efforts to shape global opinion, see International Chamber of Commerce, *The Liberalization of Telecommunications Services: Needs and Limits*, ICC Policy Statements on Telecommunications and Transborder Data Flows, n. 1, (Paris: ICC, June 1982).

[43] For more on these networks, see Bruce Blair, *Strategic Command and Control: Redefining the Nuclear Threat*, (Washington, D.C.: The Brookings Institution, 1985); Paul J. Bracken, *The Command and Control of Nuclear Forces*, (New Haven: Yale University Press, 1983); an Robert P. Richardson, "The U.S. Diplomatic Telecommunications System: Its Role in U.S. National Security, War Prevention, and War Termination", (Cambridge: Program on Information Resources Policy, Harvard University, November, 1984). Unfortunately, these sources are exclusively concerned with national military security issues. I have yet to locate any published sources that address their impact on the global communications environment.

attribute the policy shift purely to particularistic private pressures.[44] But such a singularly instrumental explanation fails to recognize that corporate success promotes broad state goals as well. Given the infrastructural centrality of telematics to all major economic activities, the injection of competitive dynamism into user industries would seem to promise aggregate national benefits. Further, American equipment producers and service providers have carved out commanding positions in global "high technology" markets at a time when traditional industries contribute less and less to the balance of payments. There were also ideological components: a broad shift away from industrial regulation was underway by the Carter years, and the assertion of a new leadership in communications regimes would clearly reinforce America's (declining?) hegemonic status in world affairs.

When the global struggle first intensified in the mid-1970s, there was intense bureaucratic in-fighting as to which agency should lead in policy formulation and articulation. The State Department felt that the issues were primarily diplomatic; the U.S. Trade Representative viewed them as part of its emerging agenda of liberalizing world trade in services; the FCC believed that they were largely technical matters in which it had a long history of expertise; the National Telecommunications and Information Administration of the Department of Commerce saw them as precisely the problems for which it was created; the Department of Defense was concerned that liberalization might undermine the stability of both ATT and the PTTs, upon which it had grown dependent; and so on with other agencies. Frequently, the result had been a great deal of substantive and tactical incoherence in dealing with bilateral and multilateral conflicts.

The new challenges clearly required the reorganization of the government's foreign policy mechanisms. Legislation was introduced in the House of Representatives in 1981 to create an inter-agency decision-making council wherein each bureaucracy would lead on specific issues in which its interests were dominant, but the bill aroused the turf battlers and was killed.[45] The State Department appeared to have won two years later, when an Executive Order blessed it with an Office of the Coordinator for International Communications. The Coordinator is appointed at the ambassadorial level, and is supposed to have the final word in unifying and presenting American positions in international discussions. Unfortunately, a multitude of critics in Washington, D.C. and abroad assert that the political appointees in command do not understand the issues, lack management skills, and are unable to forge an effective consensus among the agencies.

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[44] It is clear that the administrative fragmentation of the state provides more access points for social forces than are found in most other countries. The Congress has notoriously few incentives to resist domestic demands for support in foreign commerce; the contemporary FCC is an excellent example of "regulatory capture" by the private interests it is supposed to regulate; the Department of Commerce and the Office of the Special Trade Representative are by mandate committed to promote American firms abroad; and even the State Department, once known for its ability to balance diplomatic and commercial objectives, has formed an industry Advisory Committee on Telecommunications and TDF from which officials admit to taking their cues. This interpretation is based on interviews and research at the relevant agencies, and on secondary sources.

[45] See, U.S. Congress, House. *International Communications Reorganization Act,* Hearing and Markup of H.R. 1957 before the Committee on Foreign Affairs. 97th Congress, 1st Session, July 8, 13 and 14, 1981, (Washington, D.C.: Government Printing Office).

Two other efforts to grasp the reins deserve mention here. In 1975, the State Department created a Working Group on Transborder Data Flows, which took on the full range of telematics issues, and an Industry Advisory Committee on Telecommunications and TDF, which represented businesses in the Working Group. Due both to the new market-oriented ideology and the paralysis and apparent lack of expertise in the government, the private sector Committee is widely recognized to have taken the lead in U.S. policy-making.

In addition, an Inter-Agency Task Force on Transborder Data Flows was created in 1983 under the Coordinator's auspices to develop a unified national position as to the substantive principles that should guide the regimes. Its first major policy goal was to take over the drafting of a strong position paper on TDF in the U.S. that would demonstrate the benefits of liberalism to the international community. The paper was to be published in a series of national TDF policy studies organized by the U.N. Centre on Transnational Corporations, an organization regarded as too radical and too influential by the U.S. But this effort proved unsuccessful as well; agencies again could not agree on principles, tactics, or their respective responsibilities in the project. The paper that was eventually produced (after four years of effort) was never approved for external circulation, much to the entertainment of many foreign governments.[46]

This brief discussion of recent U.S. policy-making serves to underline an important point about the shifting power relations in global communications. Influenced by the theoretical reign of neo-realism, most recent studies of regime change have focussed on the foreign policies of the U.S. and other major states.[47] In the case of international communications, the major pressures for transformation come from techno-market change, corporate assertiveness, and domestic regulatory decisions taken by an agency historically independent of the foreign policy establishment. American diplomacy has played a largely secondary role, in part because foreign governments often regard official U.S. pronouncements as somewhat inept, hopelessly biased and insensitive to different national perspectives. It has, however, helped to crystallize foreign fears about the trends underway.

3. National Policies, International Politics.

Unfortunately for the U.S., its positive vision of technical change is not always shared by other governments. The Europeans, for example, often view the revolution in communications and information in the context of decaying "sunset" industries and severe difficulties in establishing globally competitive "sunrise" or "high technology" industries. These macro-economic fears are compounded by the unique position of the "postal industrial complex" in their domestic polities. *Historically viewed as a utility exempt from the market forces accepted in other sectors,* telecommunications is governed by a state-societal coalition of PTTs, protected producers, trade union, and public interest groups that would necessarily be disrupted by computer-based dynamism. This interest configuration is reinforced by strong faith in the continuing

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[46] See, U.S. Department of State. "Communications and Transborder Data Flows in the United States: A Background Paper". (Washington, D.C: Interagency Task Force on Transborder Data Flow, 1985).

[47] For one of the few studies to take seriously the role of MNEs in the formation and evolution of international regimes, see, Charles Lipson, *Standing Guard: Protecting Foreign Capital in the Nineteenth and Twentieth Centuries,* (Berkeley: University of California Press, 1985).

applicability of "natural monopoly" regulations to such medium and small-sized markets. The pace, direction and diffusion of technical change has created user demands for a diverse range of new systems and services that the slow-moving PTTs and their protected producers cannot easily provide. However, opening the markets to competitive supply could significantly erode their control. And while the potential negative effects of liberalizing telecommunications *supply* pose clear challenges abroad, the consequences of the *use* of the new information transfer systems and TDF raise a variety of unfamiliar problems for which traditional policy instruments may not suffice.

Again, one of the problems that makes the politics of telematics truly distinctive is its complexity. As technologies converge and markets and activities interpenetrate, pressures unleashed in one domain spill into the next. For example, if the PTTs were to agree to limit carriage-based restrictions on TDF, this would invite user demands for upgraded equipment and telecommunications services, and vice versa. To budge an inch, then, may open the floodgates to liberalization pressures across a whole range of relevant activities. In addition to these intra-sectoral linkages are the inter-sectoral linkages characteristic of infrastructural industries. Foreign governments worry that the competitive positions of their user firms could erode across a broad range of secondary markets. Were American banks and automobile firms to prove better at integrating and applying the new systems, they could strengthen their position vis. foreign counterparts.

This tendency to see the threat to the part as a threat to the whole has at least three relevant consequences. First, conceptual distinctions and definitions matter. If, as the FCC argues, no valid technical distinction is possible between computer-based information services and telecommunications, or computers and certain types of equipment, then liberalizing norms established in one market arguably should be extended to other interpenetrated markets. Europe and its Third World supporters have therefore struggled to defend such distinctions.[48] Second, the cross-sectoral connections imply that the extant vulnerabilities of interdependence will be aggravated, and that new ones will emerge. States therefore fear that misguided actions in any given case will have multiplier effects across related domains. *Thus, as we move to an information/service-based world economy, the possible erosion of domestic control over telematics is viewed as one of the greatest threats to national economic sovereignty and security.* Third, policy-making is complicated by the transversing of diverse state agencies' domains. PTTs now frequently find themselves at odds with other bureaucracies that have different constituencies and interests, particularly those involved in competition and anti-trust policies. How broadly issues are defined therefore determines who will be involved in making policy, and how quickly national and inter-governmental adaptation strategies may be implemented.

To reassert their control, European and other governments have employed an almost ingenious array of measures deemed protectionist by the American government. Some use traditional trade and industrial policies, such as national criteria in governmental procurement, tax breaks and subsidies for "infant" industries, export financing, etc. But what is more interesting is the adoption of domestic regulatory policies to slow and/or channel the rate of change in world markets. Governments

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[48] The problems of delineating between categories of services and of equipment, and the regulatory/industrial policy implications of such definitions, are discussed in Robert R. Bruce, Jeffrey P. Cunnard and Mark D. Director, *From Telecommunications to Electronic Services: A Global Spectrum of Definitions, Boundary Lines and Structures*, (London: Butterworths, 1986).

have strictly enforced their rights under the traditional telecommunications regime and have creatively interpreted their latitude in extending/revising pre-telematics norms for information transfer.

Among these measures are: data protection laws and requirements that users purchase local information processing or retain certain categories of information within national borders; requirements that data be sent abroad through a single network gateway (the "Poitiers solution"); limitations on leased-line connections and the use of certain services; prohibition of the re-sale to or shared use with other firms of intra-corporate transmission capacity; efforts to monitor or tax certain types of information; deliberately poor transmission quality; imposition of prohibitive telematics tariffs, parochial technical standards and complicated equipment attachment procedures; etc. However, many observers believe that the proliferation of private transmission routes, the technical capacity to bypass public networks, and the secrecy of internal corporate practices will increasingly make such measures difficult to enforce in the near future. If so, techno-market change will make obsolete the efficacy of the new protectionism, and national policies and international regimes will be forced to change to accommodate the new realities.[49]

In the meantime, there are high risks involved in pursuing such national policies in such an inherently transnational field. If a given nation attempts to limit the incursions of MNEs into its policy domain, it runs the risk that companies will locate their physical plant elsewhere and remotely service the national market anyway. For example, in a celebrated 1985 case, the Bundespost attempted to exact numerous restrictive concessions from Citibank, which had proposed to build a multimillion dollar communications and data processing center in West Germany. Citibank balked at the restrictions, established the plant in Belgium, and provided the same services to the German market without generating any local tax revenues or employment. Thus, with the new possibilities for service transport, direct foreign investment in physical plant is no longer a prerequisite for "presence" in a given national market. Further, individual PTTs may lack the bargaining power to sustain defensive strategies. If their policies come under attack from service providers seeking market entry, users seeking liberalization, or the American government, the legitimation and support of other countries is essential. For these two reasons, regional collaboration with like-minded governments is important. Particularly influential in this regard has been the Conference of European Posts and Telecommunications Administrations (CEPT).

4. Regional Institutions: The CEPT.

Founded in 1959, CEPT includes 26 national PTTs, including Turkey and all of Western Europe. It is a strictly intergovernmental coordinating agency: the desire of the individual PTTs to retain complete control of their jurisdictions has produced an institution without a powerful Secretariat. Instead, the supreme organ is the Plenary Assembly, which meets periodically in different nations to set overall policy. Voting requires unanimity, thereby ensuring that policy change will be incremental. There are a number of Committees, Commissions and Working Parties which execute the

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[49] For an assessment of these policies, see, William J. Drake, "Territoriality and intangibility: State sovereignty in the information age", in John MacLean and Roger Tooze, eds., *The International Political Economy of Knowledge and Information: Problems of Theory and Practice*, (London: George Allen and Unwin, forthcoming).

Assembly's decisions, of which the Telecommunications Commission is the central organ in this field. The Presidency and location of the Commission floats among the national members on the basis of highly-politicized votes; throughout the recent years of international turbulence, France has served as the assertive host of the organization.[50]

Collaboration in CEPT presents an interesting and little studied example of the politics of inter-independence. The basic thrust of CEPT action is to preserve the complete autonomy of national PTTs by simply coordinating certain portions of the telecommunications agenda. Of primary importance are the setting of technical standards and the arranging of gateways and correspondent relationships within the broader ITU framework. In both cases, the organization makes no effort to get members to adopt truly harmonized policies which could open national markets to competitive supply. Indeed, one of the most striking aspects of the European system is that, after 27 years of cooperation, almost all nations have maintained separate technical standards, equipment approval and attachment procedures, etc. CEPT simply seeks to minimalize the friction between these non-tariff barriers by ensuring least-common-denominator performance requirements for inter-operability.

Despite this nominally "technical" orientation, CEPT has emerged in recent years as a dominant players in the world politics of telematics. This is so for at least four reasons. First, the organization has played a critical role through its informational functions in helping members elaborate their domestic programs. By maintaining and sharing extensive and highly confidential data on European and global developments in such areas as members' technical standards and the market demand for certain services, CEPT facilitates national policy-making.

Second, CEPT adamantly supports individual PTTs in their struggles with the forces of liberalization. This may involve presenting a common front vis. the U.S. government in bilateral conflicts, or vis. corporations seeking competitive market entry. Members are then able to justify restrictive policies on the basis of regional norms, and can have greater confidence that other Europeans will not undercut their positions by offering "excessively" liberal alternatives to attract business. For example, much of CEPT's recent efforts have involved lobbying the U.K. to limit the extent of Mrs. Thatcher's pro-market policies. Arguably the British would have moved much further in their efforts to become the communication hub for trans-Atlantic traffic had not CEPT devoted itself so assiduously to making them feel isolated from their traditional partners.

Third, CEPT has become the dominant force in challenging the American agenda in the ITU. In the CCITT and CCIR organs, CEPT has firmly opposed U.S. attempts to move the global organization toward market-based norms and rules. Spokespersons from member administrations constantly seek to underlinine the uniqueness of America's domestic experiences and international preferences. Further, CEPT has

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[50] CEPT is arguably the most secretive intergovernmental organization involved in a critical sector of the world economy. Accordingly, there is almost no publicly-available literature on its internal workings. For one of the few, if purely descriptive exceptions, see, C. Labarrere, C., *L'Europe des Postes et des Telecommunications*, (Paris: Masson, 1985).

lobbied heavily to restrict the growing power of private firms in the ITU policy process, a development the U.S. has spent much political capital to encourage.

Probably the most significant CEPT initiative, though, has been its influence in the development of the global Integrated Services Digital Network (ISDN).[51] The concept is that by digitalizing all national networks on the basis of broadly concordant standards and procedures, the entire globe will be covered by a single high-quality intelligent network capable of carrying all transmission forms. The ISDN would theoretically obviate the present need for elaborate gateways between various national public voice and data networks, private networks, terrestrial and space segments, etc. This is a truly massive effort, involving billions of dollars of outlays over the next decade to upgrade national systems to appropriate levels. The effect would be to totally revolutionize the world economy by making all disembodied services equally transportable across the globe with extremely high levels of security, accuracy and speed, thereby accentuating many of the trends discussed above.[52]

The ISDN has been the subject of intense political controversy since it was first proposed in the late 1970s. How exactly the network is configured will have extensive implications for the various parties in the global telematics markets. For example, if, as the Americans propose, intelligence functions are located in privately-owned terminals, rather than in the network itself, the system will simply serve as an interface for an expanding range of diverse private actors and components. Computer and communications service providers could design highly-specialized offerings for MNE users and transfer them with ease; equipment manufacturers would be encouraged to produce a multitude of customized terminals and attachments to suit particularistic needs; and users would have complete freedom to buy whatever they want from whomever they want in a robust competitive environment.

CEPT has a very different vision of ISDN's potential. The European PTTs strongly prefer to locate the intelligence functions in the underlying network itself, because doing so would allow them to expand their operations into all new market niches. Indeed, an ISDN based on this conception completely obviates the rationale for all private systems--leased lines, VANs, resale and shared use networks, computer service bureaux--which has been that PTTs cannot adequately serve specialized needs. In fact, some PTT spokespersons have been quite forthright in proclaiming their intention to use ISDN to slowly force corporate users to migrate to public networks, effectively abolishing any competition. This would also limit the range of equipment to that which the PTTs deemed compatible with the network, and would break the growth of the MNE use community's political power. Thus, the fundamental conflict between the American and European visions of ISDN goes to the heart of the divergence over the future of the international communications regimes and the structure and power relationships of the evolving world information economy.

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[51] The most systematic (albeit apolitical) description of the ISDN is, Anthony M. Rutkowski, *Integrated Services Digital Networks*, (Dedham: Artech House, 1985).

[52] On the concept of "disembodied" or immaterial services, see Jagdish N. Bhagwati, "Splintering and disembodiment of services and developing countries", *The World Economy*, 1984: pp. 133-143.

Also of importance has been the Commission of the European Communities. The Commission has been quite concerned about telematics issues since the early 1970s, and has initiated a number of programs of sufficient merit to be discussed in the dissertation. The majority of these have been in the area of industrial support for European firms, which is of only indirect importance to the subject of international communication regimes.[53] However, since the early 1980s, the Commission has entered into extensive negotiations with CEPT in an effort to encourage the latter to move toward fuller European harmonization of standards and procedures and the liberalization of markets. While it is too early to make a definitive judgement of these efforts, it would seem likely that any progress on reaching true European standards will be slow in coming. The CEPT's entrenched domestic support bases, larger national membership, extremely conservative approach to sharing technical information and traditional monopoly on communications issues may limit the practical impact of the Commission's incursions onto its turf. In any event, the Commission's efforts had not substantially altered CEPT behavior during the period up to the mid-1980s, which is the focus of this paper.

III. COMMUNICATION REGIMES IN A DIVIDING WORLD.

1. Theoretical Reprise.

The costly construction of institutions presumes a degree of fixity in their operational environments. How institutions adapt to radically changed circumstances depends on a number of endogenous constitutional and exogenous environmental attributes. MNEs' limited objectives and formal hierarchical structures allowed them to adapt readily to the age of telematics, and this flexibility has increased their power and control over communications policy. National public institutions such as the PTTs are also formal hierarchies, but are heavily constrained by financial limitations and diverse constitutional social objectives. It is presently more difficult for them to expand their service offerings and regulatory procedures to encompass markets that are rapidly changing according to user tastes, increasingly differentiated, and complexly interdependent. And when the interests (utilities) and policies of national members are in flux and diverging, the game of collaboration in non-hierarchical international institutions is transformed. *Evolutionary functionalism is superseded by conflictual bargaining over uncertain relative gains, and the transaction costs and political difficulties of regime adaptation escalate rapidly.*[54]

How has the increasing divergence in domestic organization and international objectives affected the regimes? Realist theorists might expect that in the face of competing interests and in the absence of a hegemon, cooperation would break down completely. Nevertheless, there has been strong "demand" in recent years for regime adaptation. The compulsion to collaborate can be attributed to a number of forces.

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[53] Obviously, the connection is that, to the extent national capabilities are enhanced by industrial policies, opposition to regime liberalization becomes less salient.

[54] On the importance of uncertain relative gains in collaborative efforts, see Joseph Grieco, "Distributional Uncertainty and the Realist Problem of International Cooperation". Paper presented at the Annual Convention of the American Political Science Association, Washington, D.C., August 28-31, 1986.

Technically, the international telecommunication system is the world's largest machine, and one run by over 160 states. Due to the requirements of inter-operability, it is almost impossible to imagine how potential defectors could adequately replace this essential infrastructure with bilateral and regional arrangements. Economically, the failure to establish clear rules and expectations increases uncertainty for all organizations and could lead to new forms of reciprocally-escalating trade wars. And politically, one need not be an idealist to note the unique importance of over 100 years of successful collaboration. The normative incentive to sustain a cooperative reputation, particularly on the part of the democracies, makes exit from the global dialogue distinctly unappealing.

Yet if there is "no exit" from regime participation, members continue to speak in very different voices.[55] At the root of the problem is a fundamental divergence between the domestic institutions and ideology of the U.S. and the rest of the world. The American government's vision is that technological progress is always beneficial, and that *laissez faire* regimes should be devised to let the market take its course. Other governments, and particularly the Europeans, seem to view technical change as a mixed bag of progress, dislocation and vulnerability, and prefer regimes that *anticipate and channel* change in controllable directions. And this structural conflict is aggravated by the unilateralist style of American policy, which frequently takes abrupt turns without consulting the other nations.

Liberalizing pressures from a country the size of the U.S. create turbulent techno-market conditions at the global level. The "supply" of regimes is therefore compounded not only by divergent visions, but by the nature of the field to be regulated. *The American-inspired institutional shifts of the past twenty years have virtually reversed the technical and market conditions that facilitated cooperation in the past.* Technological change is now revolutionary. Computerized and digitalized equipment and service categories are becoming technically indistinguishable from each other, increasingly specialized and heterogeneous, and their availability varies widely across national polities. Supply markets are extremely dynamic and increasingly skewed toward private preferences and control, and the effects of system use are for the first time controversial. At the level of intergovernmental relations, power disparities and difficult bargaining are prevalent, and consensual technical knowlege about the field and its appropriate regulation is in short supply.

As a result, the cumbersome process of intergovernmental collaboration can barely keep pace. The lag-time, for example, between the diffusion of innovations and the ITU's ability to revise technical standards has radically increased. Indeed, one could argue that most of the relevant bodies--the ITU, INTELSAT, the OECD, the International Standards Organization, the World Intellectual Property Organization, etc.--are continuously solving yesterday's problems, and that awareness of this fact has in itself petrified and politicized the policy process. Similarly, the complexity problem that confounds national decision-making is aggravated in the international aggregate. OECD and Intergovernmental Bureau of Informatics efforts during 1975-85 to develop regimes for TDF were extremely ponderous because governments could neither define, measure or concretely assess the scope of the phenomena, much less select appropriate

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55 On the concepts of "exit and voice", see Albert O. Hirschman, *Exit, Voice and Loyalty* (Cambridge, MA: Harvard University Press, 1970); and "Exit, voice and the state", *World Politics*, v. 31, n. 1, October, 1978: 90-107.

norms and rules. In sum, when the subject is a rapidly-moving target, collaboration is increasingly difficult.

While a detailed examination of regime negotiations is beyond the scope of the present draft paper, it may be useful to briefly highlight some of the specific issues that have made problematic institutional adaptation during the 1970s and 1980s.

2. The International Telcommunications Regimes.

a) Carriage: The Control of Networks.

The first set of divisive issues concerns the physical organization and regulation of national communications facilities. While all states continue to have the exclusive right to configure and regulate these as they please, two fundamental forces now limit the actuality of sovereign autonomy. First, networks must be of sufficient quality to be interworked via "gateways" with other national systems, so as to maintain the unity of of the global transmission lines. Second, the increasing range of differentiated services, which can be offered remotely to users from any point on the globe, means that states must strive to maintain national conditions that attract business on a competitive basis. These and other pressures show up in the growing conflict over a variety of main components of the global markets and regimes.

Radio Spectrum Allocation. The global radio spectrum is allocated on the basis of "first come, first serve" national claims, which are coordinated through the International Radio Frequency Board of the ITU. Before its rise to global power, the United States challenged this system, and argued for the equity of a priori allocations based on projected future needs. Today it is quite comfortable with the "market based" approach, and it is the Third World which clamors for assignments based on planning. The problem has been compounded by telematics-based information transfer services, such as datacommunications, videotext and fascimile, as the U.S. seeks to reserve the best parts of the spectrum for these specialized, predominantly corporate-oriented offerings. The conflict is really between the U.S. and the developing countries, although Europe does not appear to be of one mind on the issue.

Satellite Orbital Slot Allocations. The issues here are analogous to spectrum allocation, although the Europeans arguably have a bigger stake. As the U.S. government continues to sanction the launching of private satellites, the number of prime parking spots available to foreign public systems decreases correspondingly. The U.S. maintains that "technological abundance" due to recent innovations obviate the problem, as quality transmissions can be provided from formerly less desirable spots in the geosynchronous orbit. Foreign governments and their PTTs maintain that such undertakings require expensive technologies that their public service mandate and increasingly contested capital base may not allow them to procure.

Facilities Planning and Correspondent Relationships. For the global system to function, a key element of the telecommunications regime has been the coordinated implementation of design changes and gateways among national PTTs, or correspondents. In the pre-telematics era, routinized ITU and bilateral procedures were easily maintained because all parties had essentially similar goals and technologies at their disposal. In recent years these arrangements have become highly politicized by two U.S.-based factors. First, many MNEs now seek to establish their own private communications systems on foreign government's turf through direct facilities investment, and the U.S. has backed their "right to invest". Second, American

deregulation has, as mentioned above, led to a proliferation of U.S. based international record carriers catering to the lucrative corporate information transfer market. These IRCs are now demanding the "right to interconnect" with European and Third World public systems, so that users based abroad can access the continental market. However, the PTTs maintain that to connect a multitude of firms, rather than simply AT&T and Western Union, as in the old days, complicates their facilities planning and raises domestic costs while facilitating cream-skimming. In response, the Americans claim, European and other governments have attempted to "wipsaw" or play the IRCs against each other in contract negotiations, so as to secure discriminatory and monopolistic arrangements with the chosen firms.

Systems Vulnerability. The expanding range of new services designed for the corporate market has put new strains on the extant public infrastructures. Many national networks simply were not designed to handle this sort of traffic with the speed and security that MNE users require, and the comparatively new public data networks generally have not satisfied corporate users in this regard. Problems arise then as to which parties are liable in the case of system failures that wipe out critical and expensive transmissions. For example, a breakdown in the course of an electronic fund transfer among financial institutions could potentially cost tens of millions of dollars to a firm engaged in a hot currency speculation. Also, societies increasingly dependent on computers and communications are vulnerable not only to the computer crimes of "hackers", but potentially to terrorist or other political disruptions as well. The American answers are high-cost private networks and system configurations designed to U.S. specifications; some Europeans appear to favor slowing the rate and channeling the direction of change so as to facilitate state control.

Integrated Services Digital Networks. (See the discussion in Section II.)

b) The Provision of Services.

The second set of issues relate to the conditions for the supply of the services that flow over networks. Here a number of conceptual problems arise, since it is increasingly difficult to delineate between those services that simply move signals, and those that also enhance them. If this is problematic for the narrative, it is even more so for the making of regulatory policies, since where one draws lines between interpenetrated and rapidly changing services determines which social actors may provide and use them.

Monopoly vs. Competition. As discussed above, the problem that shapes all of the items below is the tension between the traditional monopoly tradition of supply practiced in Europe and elsewhere, and the competitive market orientation adopted by the United States. European and Third World PTTs are struggling not only to defend their control over traditional service markets, such as telephony and telegraphy, but also to extend it (sometimes in mildly attenuated form) to new telematics offerings. The U.S. is actively pressing for the liberalization and integration of "global" (foreign domestic) markets, particularly regarding new services where "natural monopoly" conditions technically may not exist. The U.S. has, in "off the record" interactions, even gone as far as to press European corporations to lobby for privitization of the PTTs as well. Naturally feeling their very survival at stake, PTT managers have adopted diametrically opposed positions from those of the U.S. on a wide variety of fronts.

Leased Lines and Tariffs. The growth of private leased line voice systems in the 1960s and their conversion to specialized information transfer systems in the 1970s have been an essential pre-requisite for the consolidation of MNE positions in various

sectoral markets. The U.S. and the transnational business community maintain that these must be available for companies to use as they please, and at low flat-rate tariffs. European PTTs are convinced that literally billions of dollars of lucrative traffic are being channeled off public routes, and that corporate users may employ them in ways that affect the geographical location of economic activities, the efficacy of banking and other regulations, etc. Consequently, they favor restricting and even phasing out leased lines, and shifting to expensive volume-based tariffs that would effectively make the public networks the only viable operations.

Value-Added Networks. As terminals, transmission lines and switching equipment become more computerized and intelligent, it is possible to process or enhance information at many points in the network. In the 1970s, private American MNEs such as TYMNET, TELENET and GRAPHNET leased lines and integrated advanced computer functions to provide specialized services to other user firms. Hence, a user can punch data into a terminal, send it through the system to the VANs' computer for processing, and receive it back in an updated form. Here the "cream-skimming" problem extends beyond the traditional ambit of the PTTs, since indigenous computer services and related hardware and software companies may lose business to remote foreign providers. Some countries, like the U.K., support the continued expansion of private VANS; most others see them as a threat.

Resale and Shared Use. It is now possible for large users that lease lines in bulk to "re-sell" their unused or excess capacity to other firms, effectively acting as direct competitors with the PTTs on their own turf. Since resale often includes voice as well as advanced communications, such competition strikes at the very core of the traditional revenue base and regulatory system. Alternatively, smaller user that have more incidental needs can collectively lease lines and established timesharing arrangements for inter-organizational transmissions. In exemplary form, both of these international arbitrage arrangements have been unilaterally approved by the U.S. FCC without consulting the European PTTs, leading to violent objections by the latter.

Cryptography. The growth of telematics raises new problems regarding the encoding of messages transmitted over international circuits. In the past, governments retained the right under the ITU Convention to retain access to codes used for private transmissions, in case such voice or telegraphic transmissions had national military or economic security implications. However, today's computer-enhanced transmissions employ a dizzying array of new cryptographic technics designed to preserve the security of corporate (and state) transactions, the disclosure or interception of which could have extensive consequences for market positions, diplomatic missions, etc. Some Europeans appear to be concerned that the increasing difficulty of monitoring makes it impossible to enforce national laws pertaining to taxation, financial disclosure, bank secrecy, personal privacy, etc. Further, as we shall see below, concerns about the effects of information transfer lead them to desire transparency so as to be able to treat various categories of TDF differently. The U.S. views the monitoring of transmissions as an infringement on "free speech", and is pressuring foreign governments to refrain from any such attempts.

c) Equipment.

Monopoly vs. Competition, II. The main thrust of the ITU arrangements concerns the provision of telecommunications services. The precise conditions under which equipment is to be supplied has been left entirely to the discretion of national governments, although the exlicit recognition of monopoly in services supported

monopsony in equipment. In recent years, the U.S. has devoted much energy to liberalizing global equipment markets, particularly since the breakup of AT&T. The Regional Bell Operating Companies (RBOCS) have all begun to purchase from diversified suppliers, unilaterally opening the U.S. market to a flood of European, Canadian, Japanese and other foreign goods. The U.S. has therefore sought to offset its multi-billion dollar deficit in equipment by seeking to open foreign markets to its own manufacturers. To do so, it wants to extend free trade principles to these markets through bilateral reciprocity legislation and new codes in the ITU, OECD and the GATT. Needless to say, many foreign governments have been quite active in combatting this effort on all fronts.

Customer Premise Equipment. The growth of telematics has revolutionized equipment markets and raised a vexing problem for the PTTs. MNE users are not satisfied to procure from protected local producers equipment that does not incorporate the most advanced computerized functions and service options. Even if such materials comprise the public networks, the firms' capacities are greatly enhanced if their in-house equipment has greater capacities. And as the boundary lines between computers and telecommunications equipment blur, it becomes more difficult on technical grounds for PTTs to justify why a particular system cannot be installed. For example, if a terminal can perform communications functions, but is primarily an information processor, should its sale be governed by the rules for the unregulated computer market or the regulated telecommunications market? Further, failure to allow firms the right to purchase what they please has, in some cases, led to the installation of data processing and communications centers abroad. The U.S. is vigorously pressing the claim that there is no reason for PTT control of network materials to continue to extend into customer premises under current economic conditions.

Type Approval and Interconnection. Related to the above, users are now seeking to attach an expanding range of equipment to public and private leased line transmission systems. The U.S. seeks the liberalization of the approval procedures by which PTTs determine which systems can be interconnected. The Europeans fear that to do so may result in overloading and damage to the public network by equipment they have not tested, and that loosening these reigns adds momentum to the drive to open markets to foreign goods.

Technical Standards. One of the main functions of the ITU regime has been to devise technical standards for equipment to maintain the overall integrity and interoperability of the global network. In the era of absolute monopoly control, these standards could be set by governments in the CCITT so as to channel the rate and direction of technical change. By collectively determining *de jure* standards in anticipation of innovations, PTTs were able to determine precisely which systems manufacturers would invest in developing. However, once again, telematics has changed all that. With computer functions increasingly integrated into equipment, and with computer firms, particularly IBM, increasingly important in telecommunications markets, the PTTs are witnessing the rapid spread of *de facto* private standards to which they often must comply. The impact at the national level and on the ITU process has been profound: private goods are becoming public goods, and the official governmental standardization process increasingly follows the lead of exogenous corporate preferences. Concomitantly, formerly protected markets are being incrementally opened, as an growing number of foreign firms produce goods to the new global specifications.

3. The International Satellite Regime. [This section to be expanded and re-worked completely.]

INTELSAT, the International Telecommunications Satellite Organization, was established in 1964 and attained its current formal structure in 1971. The system is a consortium of 106 governments represented by PTTs or other state agencies and, in the American case, the private Communications Satellite Corporation (COMSAT). Historically, the INTELSAT has functioned as a sort of "meta-PTT" or global monopoly, using revenues from "thick" routes among advanced countries to subsidize "thin" routes to and among the LDCs, much as domestic PTTs have cross-subsidized residences and rural areas with corporate and urban traffic revenues. The only real exceptions to INTELSAT's complete control have been strictly national satellite systems, the terrain of which is out of its jurisdiction, and certain regional systems, which have deprived it of a mere 3% of its potential revenues. Until recently, the system enjoyed universal support, and is regarded as having been an essential cog in the expansion and intermeshing of national telecommunications systems across the globe.

However, the developments of the past decade have now put the system into jeapordy. Much of the pressure stems from MNE demands for specialized and advanced systems and services that INTELSAT cannot provide. For example, high speed datacommunications, or TDF, can sometimes be provided more cheaply and with greater security by more specialized private transmission routes that need not subsidize public services. Optical fiber links are now being deployed that can be dedicated to the particular demands of instantaneous corporate communications. Corporate users can also purchase their own earth stations to receive signals, bypassing the public system entirely. And the Reagan Administration, in a series of regulatory decisions, has unilaterally enacted an "open skys" policy of allowing private American firms to send up specialized satellites to cater to such corporate needs, potentially "cream skimming" much of the lucrative information transfer traffic. European and all other governments fear that these American and MNE actions will, over time, progressively undermine the revenue base and attractiveness of the INTELSAT system, resulting in its competitive technological obsolescence. If these fears prove well founded, the global network may become more fragmented and underdeveloped: foreign PTTs will lose money, and Third World routes will have to shift to non-subsidized and potentially prohibitive cost-based pricing.

4. International Information Transfer (Transborder Data Flow).

The third set of issues is more difficult to quickly summarize because it involves the multidimensional *expected* effects of system use in the primary information and secondary utilizing sectors. Despite ten years of policy debate, few concrete conclusions have been reached about the nature of TDF and its possible impacts. This results in part from the ubiquitous and intangible nature of information flow, but also from the fact that information about these private transactions is proprietary and technically almost impossible to monitor. However, that the issue has become highly institutionalized on the international agenda, and that states have in fact formulated policies despite great uncertainties, are interesting phenomena from a political science perspective.

"Free vs. Balanced" Flow of Information. The overarching issue dividing the U.S. and most of the world's governments concerns the basic principles applicable to transnational telematics. The U.S. argues that corporate datacommunications, videotext, electronic fund transfers and the like are conceptually no different, and no less

innocuous, than voice transmissions. The main thrust of its diplomatic activities in this field has been to convince the Europeans and the Third World that TDF should therefore be governed by the pre-telematics norms of the old information transfer quasi-regime. In this view, TDF should not be restricted in any way unless some national security value can be concretely shown to be in jeapordy. Many foreign governments, on the other hand, sees the call for "free flow" as an effort to extend both American dominance of the telematics-related industries, and American hegemony to the information transfer regime. Since the majority of TDF involves communications between American corporate headquarters and foreign branches, opposing states have responded with a call for "balanced" flows. This means, in the short term, restricting such American transmissions, and in the long-term, building up national capacities to be on par. Foreign worries can be categorized as follows:

Economic Issues

Location and Division of Labor. If an American plant in Europe sends its data home for processing at the head office, the purhasing of data processing goods and services and the training of workers at the plant locale are correspondingly reduced. Similarly, as telematics systems are deployed to control automated factories abroad, key functions once performed in host countries may be repatriated to home countries. This makes one of the chief advantages of the LDCs--cheap and plentiful labor--less of an attraction for potential investors. Over time, the lack of stimulation to local information and related industries makes them less desirable to potential future purchasers, and indigenous user industries either become less competitive with their American counterparts, or become dependent on U.S. information firms. As the effects of inbalances in the communications and information industries ramify throughout the world economy, foreign financial, manufacturing and other firms may suffer in their respective markets.

Economic Control. On the other hand, TDF may involve the home office planning the entirety of its global operations on a coordinated basis. Branch plants formerly responsive to local laws and concerns may become less autonomous from the headquarters and more difficult to regulate. In the service sector, efforts to extend regulations to preclude this outcome can lead to plant closures, since transportability has made physical presence through direct foreign investment less essential in some cases. Important decisions affecting employment, production and so forth may now be taken abroad on the basis of short-term market fluctuations and enacted more rapidly than before. Critics believe that such TDF accelerates the centralization of decision-making over key aspects of their economies within the United States, and reduces the possibility for local inputs into the corporate calculus. Third World governments, in particular, see TDF as accentuating old and creating new forms of dependency on and national penetration by American MNEs.

Information Sovereignty. Strategic information pertaining to the activities of foreign governments and corporations, natural resources, macro-economic trends, etc., can now be gathered and instantaneously transmitted across the globe without regard to local laws. Foreign critics worry that in many important domains, American firms may have better information about their economies and capacity to utilize it rapidly than they do. Particularly controversial in this regard has been remote sensing by satellite of Third World countries. For example, the Brazilians believe that American agricultural importers were able to reap a multi-million dollar windfall several years ago at their expense by detecting climactic problems affecting the national coffee crop and bargaining down the price. Hence, TDF may affect bargaining and contractual relationships between firms, and with governments. As a result, critics are trying to

develop concepts of "data territoriality" and "information sovereignty" that would be applied to key types of information. The U.S. finds this legally absurd; independent observors believe it to be technically impossible.

Macro-economic Policy. The increasing volume and velocity of electronic fund transfers among banks and financial institutions, instantaneous currency speculations involving hundreds of billions of dollars daily, rapid stock market transactions, computerized commodity speculation --all these are believed to be undermining national monetary policies. Similarly, fiscal policies may be affected to the extent that local economic activities become unnecessary for firms remotely present in markets, balance of trade effects result from the importation of U.S. information services, etc.

Employment. Critics maintain that TDF constitutes a new form of "brain drain", as highly-skilled information jobs are performed in the home countries of MNEs, relegating host country labor forces to less-skilled positions. The U.S. contends that there is no empirical evidence to support the existence of such trends, and that any job losses are compensated for by new employment possibilities. For example, many U.S. service firms are now locating such operations as phone answering banks overseas, particularly in the Carribean, where labor costs are lower. Foreign governments often reply that the difficulties of evaluating employment effects are due largely to corporate secrecy, and that "de-skilling" is a valid concern requiring pre-emptive regulations.

Valuation and Taxation. Technically, it is very difficult to accurately assess the value of information, since its utility for users is obviously much greater than the mere development costs. However, if one could arrive at some basis for assigning values to informational imputs as is done with material factors of production, it might be possible to categorize different information flows according to the functions involved (eg. scientific and technical information, electronic fund transfers, administrative practices, trade documentation and support) and to tax them accordingly. The U.S. is opposed to any efforts to value and tax information; many governments, the French and Germans in particular, remain quite interested in the possibility.

Trade in Services. The growth of telematics has sparked a debate about the definitional nature of telecommunications and information services and their role in the international trade system. Telematics is said to comprise two trade dimensions: First, as industries in their own right, data processing services, on-line data base services and the like are among the most rapidly growing areas of the world economy. Second, as infrastructures for the expidition of most large scale economic processes, the conditions of their availability greatly affect trade in goods, such as manufacturing and agricultural products and a wide variety of information-based services (tourism, movies and other cultural outputs, advertising, accounting, banking and finance, insurance, shipping, construction, consulting, etc.) Should telematics-based services be traded freely over telecommunications circuits, the efficiency of the companies operating in these sector might be greatly enhanced. However, it is also possible that their broad-cross sectoral effects could contribute to the increasing concentration of corporate power in the world economy, and the increasing irrelevance of national industrial and trade policies in the affected industries.

Much debate and conflict have therefore taken place in the past five years over the precise terms upon which such trade should be conducted. In almost all countries of the world, service industries are highly protected by national governments, and indeed, many such industries are controlled by public firms. Further, trade in services has been left out of the GATT in large part because of European and Third World

concerns that liberalization would mean dominance by American firms from locales in the U.S. The American government, on the other hand, has devoted an incredible amount of energy in trying to drag the Europeans into accepting liberalizing commitments, first in the OECD, and secondly in the GATT.

An important part of the current debates center on whether services are so qualitatively different from goods as to require totally new principles, or whether those pertaining to physical goods (market access, transparency of legislation, national treatment, non-descrimination, the right of [geographically remote] establishment, and so on) can be transferred to the movement of intangibles. Thus the telecommunications and information transfer regimes are increasingly becoming "nested" in a broad set of negotiations taking place in fora with no historical role in communications policy. An interesting analytical question is precisely whether the expansion of the telecommunications agenda and its dense interpenetration into other nominally-distinct domains results in issue-linkage and spillover effects of a liberalizing or regulatory nature.

Legal Issues

Privacy Protection. Personal information about foreign employees of American (or other foreign) firms can now be gathered and transmitted for use abroad, where the same laws on privacy may not apply. This is a particularly sensitive issue in Europe, given memories of the Hitler years. Workers may be fired, not promoted or otherwise affected without any recourse in local courts. Most continental countries have therefore developed laws on TDF and privacy that establish Data Protection Directorates for the oversight of personal files. The U.S. believes these laws to be non-tariff barriers. Particularly problematic has been the extension of such protection to information to legal persons, or corporations, by several continental countries. Such laws mandate that, for example, General Motors must disclose certain types of information it might have about Audi or Volvo to a governmental agency to which the latter firms may have access. The U.S. is very actively challenging the status of such restriction through diplomatic channels, and may attempt to seek recourse through international law.

Intellectual Property. What protection should be accorded to software and other information forms that can be purchased from computer service firms on-line? The U.S. seeks strict guidelines protecting innovators, many of whom are Americans, while European governments remain somewhat ambivilent and uncommited on the problem. As is well known, Third World governments are generally quite adament about having easy access to on-line and other information forms that they contend to be "in the public domain", and have lobbied extensively in the World Intellectual Property Organization against American-supported property rights. They believe that such proprietary rules might be extended to sensitive information about their economies which is held abroad, and that regardless of the issue's merits, the U.S. is focusing on it to divert discussions away from regulatory solutions to larger TDF issues.

Liability. When information is in constant global motion, at what point in the system are which actors liable for system failure? This puts pressure on the PTTs to undertake expensive upgrading of their systems in order to avoid being dragged into American courts.

Extraterritoriality. Despite its rhetoric, some of the most obvious restrictions on TDF have been enacted by the U.S. government. For example, American distaste for the Soviet gas pipeline in 1982 led the government to prevent an American firm from

transferring crucial data to a French firm, in violation of a contract. As a result, the latter was unable to conclude a multi-million dollar transaction already underway, and the sale was lost to a competitor. Similarly, during the hostage crisis of 1979-1980, the U.S. effectively shut down almost all of Iran's communications links to the outside world, disrupting the latter's trade relations in petroleum and other markets. To American chagrin, Europeans have focused much attention on the problem of extraterritorial legal incursions into this new transnational activity.

Social and Cultural Issues

National Identity. Since the overwhelming portion of on-line data bases and other information services are of American origins, some foreign governments fear the growing dominance of the english language. As these systems spread in use, the dominance of the American market may stifle the development elsewhere of data bases and services formulated in local languages. The larger fear is that management strategies and institutional styles will come to reflect the priorities of a hegemonic culture with very different values. Concomitantly, because of the comparative sophistication of the American services, it becomes more difficult to finance the development of indigenous language services on a competitive basis.

Social Integrity. In addition to the increasing collection of personal data, the effects on job patterns and criteria and personal skills, European and Third World critics fear the macro-social effects of becoming American. They see a growing disparity between the "information rich" and the "information poor" at every level of their societies, as more and more decisions are made by those with access to certain information forms about those who lack it.

6. Impact.

What are the empirical effects of this turbulence on the global governance of communications? Clearly, the telecommunications regime is alive but not well. Techno-market changes and political divisions as to their control have sharply reduced the institution's capacity to adapt. Indeed, the past two decades have witnessed its transition from a pattern of steady growth to one of incremental decay.

[*section to re-worked to include an assessment of INTELSAT.]

This decay can be measured according to three key institutional attributes. First,the regime has declined in *scope*. In the pre-telematics era, norms and rules were easily extended to incorporate new technologies and services as these arose. Today, there are a multitude of new systems that have yet to even be considered; indeed, neither the category of "telematics services", nor many of its diverse elements, have been defined and standardized under the ITU procedures. Other operational necessities have been deemed politically off-limits; it is no longer enough to define rules for network interfaces without standardizing terminal attachments, but the latter effort would be extremely divisive.

The ITU as a formal organization has also been diminished in the process. Whereas the International Telegraph Union was expanded to become the Telecommunication Union, no "International Telematics Union" is in the offing. Instead, the ITU must now share its turf with a number of other regional and multilateral organizations whose realms are affected, and its arrangements are

uneasily "nested" with other regimes. To the extent that many of the relevant instruments operate on fundamentally different principles, this interplay may prove unsettling. The extension of GATT norms to information and communication services contradicts the ITU consensus; the European Communities' anti-trust and competition laws challenge the CEPT's assumptions, and so on. Thus, different instruments may now be invoked by the competing sides in any given negotiation, and this pattern of issue-linkage worsens the turf battles between the intergovernmental organizations.

Second, the regime has declined in *strength*. The pre-telematics consensus comprised a mixture of obligatory and recommended practices, both of which were generally followed. On this dimension, the pattern of devolution is particularly clear. Since the early 1970s, the ITU has been undergoing a process of "deformalization", whereby Consultative Committee regulations (specific rules) have been converted to recommendations (diffuse norms) without compliance mechanisms. In effect, the regime has been downgraded to conform with the realities of rapid change and divided interests. This leaves greater room for national divergences from agreements: some governments now appear to introduce new systems without much thought as to their effects on the global system, and to interpret permissively past injunctions regarding, for example, obligatory interconnection of new networks.

Finally, the regime has declined in *clarity and coherence*. Divergent policies have converted it into a patchwork of autonomously-defined rules and procedures. Techno-market changes make laboriously-arrived-at standards and frequency allocations irrelevant on a seemingly monthly basis, replacing *de jure* public goods with *de facto* private goods.

The net effects of these trends are twofold. The major functions of international regimes--facilitating agreements, providing information and stable expectations, reducing collaborative transaction costs, etc.--are no longer being adequately served. But of greater interest is the overall status of the regime. Again, it is important to distinguish between changes *of* a regime, and changes *within* a regime. The former involves the transformation of the essential principles and norms definitive of regime purpose, while the latter comprises the alteration of rules and decision-making procedures within a stable normative framework. Though the U.S. has sought a change of regime, this has not occurred; there is simply too much division to formulate a radically new consensus on objectives. However, if the basic goals remain formally in place, the mechanisms for their realization have steadily deteriorated. If the telecommunications environment continues to evolve as unpredictably as in recent years, incremental changes within may compel a change of the regime. The status of the regime would seem to hinge on what will be decided at the upcoming WATTCC 1988 conference.

The situation regarding the information transfer regime is less easily defined. The historical lack of a formal organizational focal point and of clear rules has always allowed varying interpretations of rights and obligations. Nevertheless, some tentative observations are possible.

The *scope* of the quasi-regime has clearly declined. When information took the innocuous forms of voice and telex transmission, its appropriate treatment was clear. Particularly in the western system of values, interruptions for reasons of "National Security" required solid justifications. But telematics has qualitatively altered the nature of the information transferred, raising numerous issues having little to do with "free speech". International instruments that reflect this fact have yet to be devised, so the extension of pre-existing norms remains a matter of national preference.

The regime has declined in *strength*. This may seem an odd claim, since it never contained formal compliance mechanisms. Yet the principles of comity and reputation limited past infringements on speech among the democracies. The national adoption of restrictions on TDF would appear to contradict pre-existing practices, but today violate only the American interpretation of applicable custom. Efforts to codify new norms and rules under the auspices of the OECD have been inconclusive in this regard. The 1980 Guidelines on TDF and the Protection of Privacy, and the 1985 Declaration on TDF, are uneasy compromises between competing visions, and have not established consensually acceptable sanctions.

And the regime has declined in *clarity and coherence*. This is perhaps the most empirically obvious trend, in that extensive negotiations have provided little guidance as to how the phenomena should be understood. Is information transfer a trade issue? A human rights issue? Which regimes are most applicable to its governance? None of these matters appear likely to be resolved in the near future.

It would seem that these conditions constitute a change *of* regime. While no new institution is in place, the past conception of basic goals enjoys no broad acceptance today. In the field of information transfer, the forces of anarchy appear limited only by the desire to retain a cooperative reputation, and the fear of reciprocal reprisal. Obviously, these are rather soft institutional foundations for an issue-area of such magnitude. Thus, governments remain firmly committed to sustaining the dialogue in order to arrive at a more clearly delineated regime for information transfer. The eventual outcome will be intimately linked to the broader negotiations in the GATT on the global governance of trade in services.

IV. CONCLUSION.

In sum, trans-atlantic divergence has made the adaptation of international communications regimes difficult during the 1970s and 1980s. This is particularly true in the case of information transfer, where the broad informal agreement of the pre-telematics era has given way to the total absence of a regime. But because of the lack of strong defection possibilities, the comparative clarity of the issues, and the strength of the existing institutions, the telecommunications regime has fared better, and INTELSAT (as I will show in the second draft) better still.

It is not clear what the future holds. Beginning in the mid-1980s, a number of important continental countries have shown signs of moving toward more expansive forms of selective market liberalization. While none of them is likely to go as far as the United Kingdom has, these changes at the domestic level may, in time, result in significantly more harmonious collaboration at the intergovernmental level. Perhaps we will have to wait until after the WATTCC meeting to judge the future direction of international order in telecommunications. But if the negotiations proceed along the lines that now seem apparent, the rather pessimistic picture of the recent past painted here will remain all too timely.