The International Context for Spectrum Policy

Telecommunication has acquired strategic importance. With globalization and increasing information intensity of economic activity, the importance of telecommunication now transcends the established organizations responsible for providing basic services. It now reaches all fields of economic and social endeavor.[1]

Introduction

Since the 1979 World Administrative Radio Conference **(WARC),** the world economic and political scene has changed dramatically. The 1980s witnessed the rise of Japan as a major economic power and the industrialization of countries such as Brazil and Korea. The influence of the Soviet Union has declined dramatically as the Eastern bloc has dissolved and the U.S.S.R. itself is beset with internal turmoil. Moving into the 1990s, the world is seeing the emergence of a unified Europe and a realignment of the Eastern European nations. Accompanying these changes, the historic tension between the developing and developed countries that characterized the 1970s and early 1980s has lessened. There is now a more flexible and conciliatory tone to international telecommunications policymaking.

The larger shifts in economic and political power in the world have altered the context within which international telecommunication issues are addressed. Rapidly advancing technology is linking more systems in networks that are increasingly regional and global. Competitive pressures have forced many governments to liberalize or privatize their telecommunication industries. In the past, the main telecommunication (radiocommunication) actors were well-known, and alliances were stable. Today, new players have become prominent as others have faded, and firm alliances have given way to rapidly shifting factions. East-West and North-South confrontations have been replaced by regional divisions. Recognizing these changes, the International Telecommunication Union (ITU) established a High Level Committee to examine ways to improve the structure and processes of the ITU to more effectively respond to the challenges of changing technol-ogy and members' development needs. This is the environment within which the United States must negotiate new international radio allocations at WARC-92—a world in which the actors are more numerous, their views more diverse, and relations more complex. This chapter examines the present structure of the ITU, discusses the proposed changes in the ITU, and identifies some of the larger trends that are altering the world's telecommunications policy order.

International Spectrum Administration: The ITU

Description

The International Telecommunication Union was formed in 1932 through the merger of the International Telegraph Union and the members of the International Radiotelegraph Convention. It is the principal international organization responsible for allocating and regulating the use of the radio frequency spectrum on an international basis. The ITU provides a forum for the development of global standards and procedures aimed at assuring compatibility of telecommunications facilities and services. It also acts to reduce interference between nations and among services in order to maintain harmony in the international use of the radio frequency spectrum and the provision of wireless communications services. The ITU sets equipment and systems operating standards, coordinates and disseminates information required for the planning and operation of telecommunication services, and promotes the development of global telecommunication systems and services.[2]

Since 1947, the ITU has been a United Nation's specialized agency, and is governed according to an International Convention, which is periodically

---

[1] International Telecommunication Union, ' 'The Changing Telecommunication Environment,' Report of the Advisory Group on Telecommunication Policy, February 1989, p. 33.

[2] For a discussion of the history, structure and functions of the ITU, see George A. Codding, Jr. and Anthony M. Rutkowski, *The International Telecommunication Union in a Changing World* (Dedham, MA: Artech House, Inc., 1982); and James G. Savage, *The Politics of International Telecommunications Regulation* (Boulder, CO: Westview Press, 1989).

reviewed and revised at Plenipotentiary Confer-
ences.[3] The ITU currently has 164 member coun-
tries, and operates according to a one-nation, one-
vote process.[4]

Although the mission of the **ITU** is primarily
technical, because of the voting process and the fact
that the ITU is the principal international forum for
allocating the world's radiocommunication resources,
the activities of the Union are also strongly affected
by economic and political concerns. In some cases,
clashes in the ITU are based on different philoso-
phies of public policy as much as on technical
considerations. For example, one of the consistent
battles fought in the ITU over the past decade centers
on the necessity and desirability of planning the
radio frequency bands. This issue has traditionally
divided the developing and developed countries.
Developing countries favor a priori planning to
ensure that, as they develop more advanced radio-
communication technologies and services, spectrum
resources will be available. This can mean that bands
of frequencies are reserved for future use and
development. Developed countries, however, favor
a continuation of the ITU's traditional system of
"first-come, first-served," which allows them to
develop and use frequencies as needed. Developed
countries believe that planning leads to inefficient
use of frequencies as some lie unused. Developing
countries maintain that planning is necessary in
order to guarantee them access to spectrum they may
need in the future.

Over the past 20 years the Plenipotentiary and
Administrative Radio Conferences of the ITU have
been characterized as increasingly "politicized."[5]
In the last several years, however, this trend seems
to have been interrupted. As a result of new
economic realities and shifting geopolitical alli-
ances, the overt politics and polemics of past ITU
meetings have subsided—political concerns have

been pushed aside by the increasingly vexing
economic problems facing many countries.[6] Unfor-
tunately, there is no way to judge how long-lasting
this trend may be. It maybe that the world is only in
a transition period that will eventually give way to
some of the old politicking (albeit in different forms
from different countries), as new alliances solidify.
For the near future, it is possible that the shifting
nature of radiocommunication alliances could con-
tribute to more cooperation as actors search out new
partners. This break in overt hostilities presents the
United States with a unique window of opportunity
to establish new relationships, develop new policy
partnerships, and make significant gains at WARC-
92.

Structure of ITU Spectrum Activities

The ITU pursues its mission of allocating, regulat-
ing, and managing the spectrum resource through a
number of different bodies (see figure 3-l). The
structure for spectrum activities within the ITU
consists of five different parts:[7]

Plenipotentiary Conference

The Plenipotentiary Conference is the supreme
governing body of the ITU, and has ultimate control
over the direction and work of the Union. This power
derives from the plenipotentiary's position as the
only ITU body able to review and revise the
International Telecommunication Convention, the
document that established the ITU and sets out its
basic functions and regulations. The Plenipotentiary
Conferences, which are held on a somewhat irregu-
lar basis, bring together high-level representatives of
member governments to elect the major officers of
the ITU (including the Administrative Council),[8]
establish the future schedule of WARCs, and recom-
mend items to be included on WARC agendas (as
recommended by previous WARCs). The last Pleni-
potentiary (Nice, France) was held in 1989. Future

---

[3] Changes in the International Convention are approved in the form of a treaty among ITU members. The last such revision Of the Convention occured at the 1989 Plenipotentiary Conference in Nice, France. The Nice Plenipotentiary proposed to divide the Convention into two separate pieces. The first part, called the Constitution would contain the organizational setup, functions, and mandates of the ITU, and would not be subject to change at each Plenipotentiary unless enough members agreed. The second part, still called the Convention, would define the operational principles the ITU would follow in pursuing the mandates defined in the Constitution. This document could be changed by a majority vote at the Plenipotentiary. The decisions of the Nice Plenipotentiary have not yet entered into force, and the governing document of the ITU is still the Nairobi Convertion from 1982.

[4] Recently reduced from 166 due to the consolidation of the Yemens and the reunification of East and West Germany.
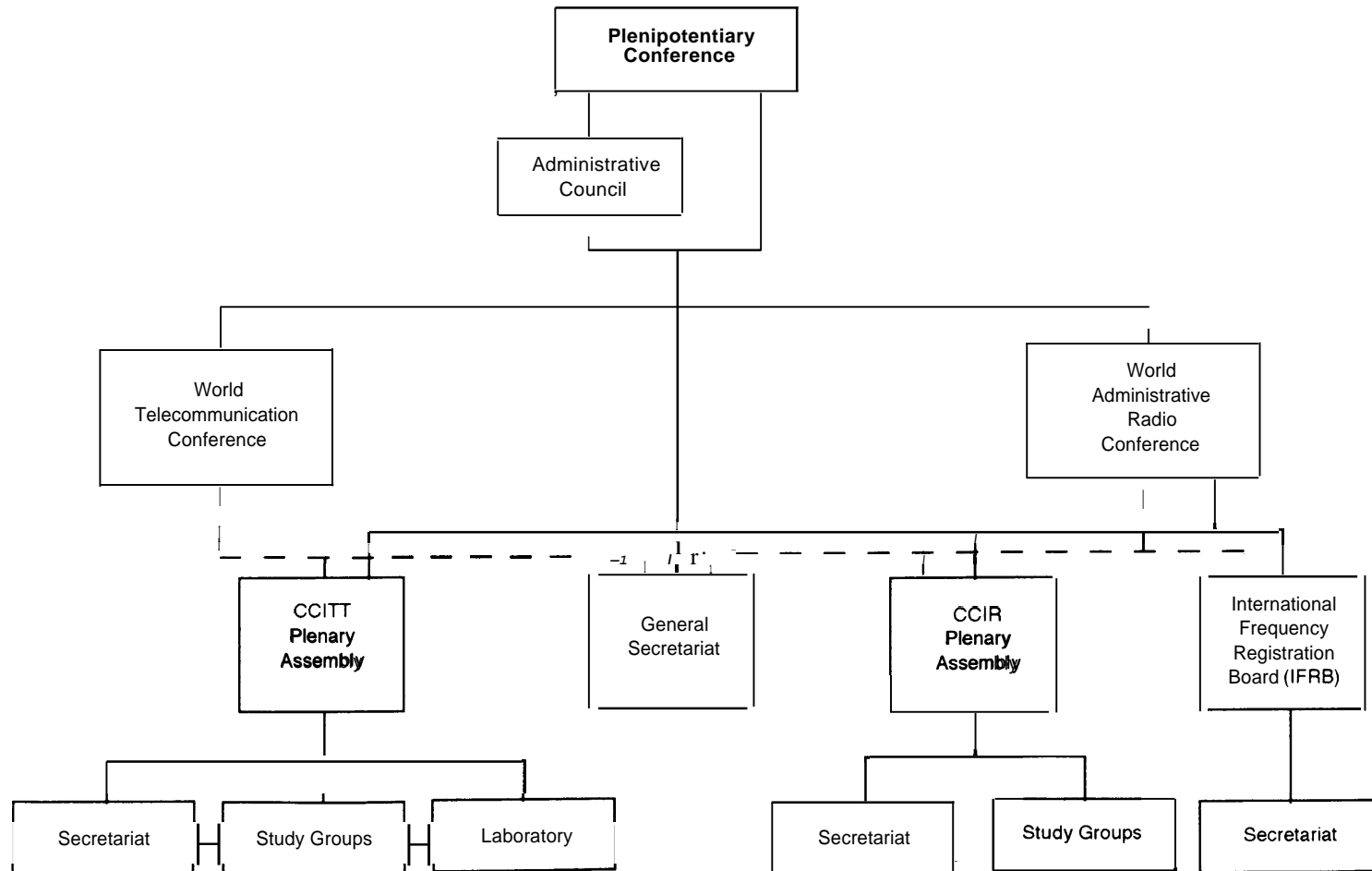
[5] For a discussion of this period of time and the implications of "politicization," see Savage, op. cit., footnote 2, pp. 52-55.

[6] It may also be that the highly technical nature and limited scope of recent conferences has stifled more visible political concerns and rhetoric.

[7] The material in this section is based on Codding and Rutkowski and Savage, Op. Cit., footnote 2.

[8] The Secretary-General, Deputy Secretary-General, five IFRB members, and the Directors of the CCIR and CCITT (and soon the Director of the Bureau for Telecommunications Development-BDT).

Figure 3-l-Current Structure of the International Telecommunication Union

KEY: CCITT=International Telegraph and Telephone Consultative Committee; CCIR-International Radio Consultative Committee
SOURCE: Richard G. Gould, "Allocation of the Radio Frequency Spectrum," OTA contractor report, Aug. 10, 1990, p. 40.

plenipotentiaries are scheduled for December 1992 (a special plenipotentiary to consider the changes proposed by the High Level Committee, see below) in Geneva and 1994 in Japan. Because of the enormous importance of the Plenipotentiary Conferences to the functioning of the ITU, they are generally the most political and polemical of the ITU's bodies.

Administrative Council

The Administrative Council of the ITU consists of 42 members and serves as the governing body of the ITU between Plenipotentiary Conferences? It meets annually to implement the decisions of the plenipotentiaries, oversee the ITU's annual budget, complete other tasks as directed by the Plenipotentiary Conferences, and set the agendas for future WARCs in consultation with the members of the ITU. In this role, the Administrative Council has substantial influence on the nature of the topics the ITU will consider through the WARC process. The United States has been a member of the Council since its inception.

World Administrative Radio Conferences

These conferences bring together radiocommunications engineers and policy experts from ITU member nations who prepare for years to make proposals on radio technologies and services that will guide world development of radiocommunications. The WARCs are the primary instrument of the ITU through which changes to the International Table of Allocations are made and by which the Radio Regulations are revised (see ch. 1).[10] WARCs provide an opportunity to make broad changes in the ways the spectrum is used. Thus, a WARC really represents the beginning of the actual work of the ITU-frequency allocations are made to different radio services, and regulations are set to encourage the most efficient and interference-free use of the spectrum. The more technical of these activities, including frequency planning, establishing technical standards and regulations for use, and developing assignment and coordination procedures, are continued after the WARC in the ongoing work of the International Radio Consultative Committee (CCIR) (see below).

International Frequency Registration Board

The International Frequency Registration Board (IFRB) is a five-member board responsible for recording, registering, publishing, and assessing the legality of every radio frequency used in the spectrum. The IFRB also advises individual countries on technical matters and does larger technical studies recommended by the WARCs. Since the 1979 WARC, the work of the IFRB has shifted in focus from high frequency issues to a broader range of topics, including satellite communications, where the Board has conducted planning exercises for the geostationary orbit.

The influx of developing countries in the ITU over the past 20 years has had a substantial impact on the IFRB. Developing countries have come to rely on the Board for technical advice and for development assistance in planning their domestic telecommunication systems. This shift in the IFRB's role reflects the larger shift of the ITU into more development-related activities. The developing countries have come to see the IFRB as an important ally in the ITU to counter the technical dominance the developed countries enjoy in the CCR.

Almost since its inception, the IFRB has been criticized, primarily by the developed countries, for being political, too closed, and too interpretive in its activities. Many criticisms center on the (actions of) board members themselves, more than on their mandated role. There is concern about the quality of the members elected to this technical board-some are viewed as highly expert, but some are not. In addition, board members have become increasingly uncooperative with each other over time, sometimes replacing cooperative decisionmaking with (political) squabbling. Some representatives of the developed countries believe that the IFRB has outlived its usefulness. Developing countries, while still committed to the IFRB, have recently become disillusioned by the loss of some key advocates who were voted off the Board. These concerns on the part of both developed and developing countries have led to recommendations for a substantial reworking of the Board's role and structure (see below).

---

[9] Forty-three countries are technically part of the Council, but the merging of East and West Germany ended separate East German participation.

[10] The ITU also holds infrequent World Administrative Telecommunication Conferences (formerly World Administrative Telegraph-Telephone Conferences—WATTCs), which address wire-based telecommunication technologies. The last such conference was held in 1988.

International Radio Consultative Committee

The CCIR, originally established in 1927, studies technical questions related to radiocommunications and recommends global standards of use for all types of radio systems and equipment.[11] The CCIR is directed in its work by a Plenary Assembly that meets approximately ever-y 4 years-the last being held in 1990.[12] The substantive, technical work of the CCIR is conducted in small study groups and working parties, which meet often between the Plenaries. There are currently 10 study groups covering a wide range of topics. Most of the participants in the CCIR study groups for the United States are members of the private sector. They have the extensive technical expertise the government often has in only short supply. Government policymakers in the Federal Communications Commission (FCC), the National Telecommunications and Information Administration (NTIA) and the Department of State closely follow the activities of the CCIR and a limited number of government representatives participate actively in CCIR meetings and deliberations.

Participation in CCIR activities is open to all members of the ITU and to nongovernment agencies and companies that have been approved by their respective governments.[13] Private sector participation depends on what business the company is involved in. Recognized Private Operating Agencies (RPOAs) are private-sector telecommunication service providers such as AT&T and COMSAT. Scientific or Industrial Organizations (SI0s), which design or manufacture telecommunications equipment or study telecommunications issues, such as Rockwell and Hughes Aircraft, also participate quite extensively in the substantive work of the CCIR. The increasing numbers of telecommunications companies around the world may lead to increased involvement and important new roles for private companies in the ITU (see below).

In addition to its general technical work, the CCIR also develops the technical bases for Administrative Radio Conferences. Before every WARC, the CCIR holds a joint meeting of all the study groups involved in preparations for the conference. The objective of this meeting, called a Joint Interim Working Party (JIWP), is to prepare a technical report for the guidance of the countries whose delegates will participate in the conference. The extensive preparatory mechanism for WARC-92 is shown in figure 3-2. Each study group concerned with WARC-92 issues first met in Interim Working Parties (IWPs) and in JIWPs of several related study groups. In March 1991 an overall JIWP was held bringing together IWPs and JIWPs that met previously. The product of this meeting was a voluminous report containing all the technical advice to the conference concerning suitable frequencies for the services to which allocations may be made, sharing and interference criteria and other technical conclusions and recommendations relating to use of the orbit and spectrum by those services.[14]

Because of the essentially technical nature of its work, the CCIR has generally been seen as less political than the WARCs or the Plenipotentiary Conferences.[15] However, CCIR proceedings and, especially, the JIWP before the WARCs have gained in importance in recent years as governments have realized the importance of the technical underpinnings to the WARC. The JIWP meetings have evolved beyond merely technical meetings and are now widely regarded as "mini-WARCs," that provide countries an important opportunity to exchange ideas, float trial proposals, and do some initial discussion and negotiation in preparation for the WARC itself. The result is that CCIR activities and the work of the study groups has become

---

[11] The International Telegraph and Telephone Consultative Committee (CCITT) studies technical issues relating to wire-based communications, including such topics as standardization computer communications, and fiber optics.
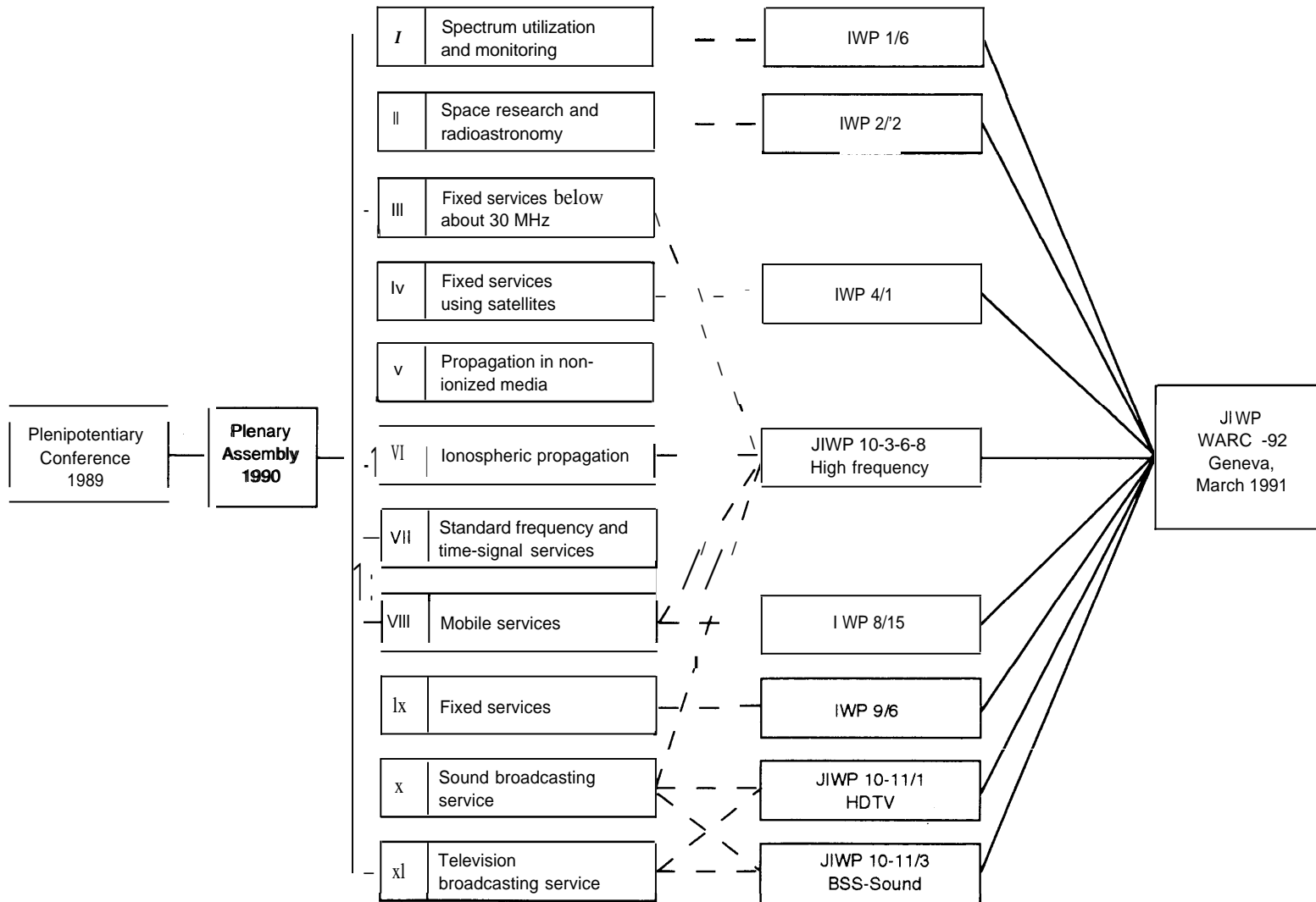
[12] Questions for CCIR study may also be proposed by the Plenipotentiary or World Administrative Radio Conferences, the Administrative Council, the CcIT"I', or the IFRB.

[13] Participation in most other activities of the ITU is restricted to member countries and their delegates only; private sector companies cannot be members of the ITU. Representatives of the private sector, however, may become members of CCIR and CCITT if they have been appointed as an official delegate by their government.

[14] International Telecommunication Union, *CCIR REPORT: Technical and Operational Bases for the World Administrative Radio conference* 1992 *(WARC-92)* (Geneva: March 1991).

[15] Most participants in the work of the CCIR study groups are technical staff, not high-level government officials. In the United States, fOr example, most CCIR participants come from private industry, with only limited participation and direction by the Federal Government. This is in part a function of the shortage of technical staff in the government, and also due to industry recognition that the study groups provide a good way to introduce proposals for new technologies and refine technical ideas and systems.

Figure 3-2—International Radio Consultative Committee (CCIR) Study Groups Preparing for WARC-92

I	Spectrum utilization and monitoring	IWP 1/6
II	Space research and radioastronomy	IWP 2/'2
III	Fixed services below about 30 MHz	
Iv	Fixed services using satellites	IWP 4/1
v	Propagation in non-ionized media	
VI	Ionospheric propagation	JIWP 10-3-6-8 High frequency
VII	Standard frequency and time-signal services	
VIII	Mobile services	I WP 8/15
lx	Fixed services	IWP 9/6
x	Sound broadcasting service	JIWP 10-11/1 HDTV
xl	Television broadcasting service	JIWP 10-11/3 BSS-Sound

Plenipotentiary Conference 1989 → **Plenary Assembly 1990**

JIWP WARC -92 Geneva, March 1991

KEY: BSS-Sound=broadcasting satellite service-sound; HDTV=high-definition television; IWP=Interim Working Party; JIWP=Joint Interim Working Party.

SOURCE: Office of Technology Assessment, 1991, based on Richard G. Gould, "Allocation of the Radio Frequency Spectrum," OTAcontractor report, Aug. 10, **1990, p. 41,54.**

increasingly "politicized," especially at meetings such as the JIWP.

CCIR activities have become more important in recent years due to the tremendous growth of telecommunications in general and the rapid development of new radio technologies. Because of this growth, and increasing workloads, the work of the CCIR (and the International Telegraph and Telephone Consultative Committee (CCITT)) has slowed, prompting calls for reform (see below). The ITU's High Level Committee has proposed changes in the structure and functioning of the ITU that would combine the functions of the CCIR's Plenary Sessions with the more general activities of the administrative conferences. Despite such criticisms, however, the work of the CCIR is praised for its businesslike approach and high quality.

The CCJR has been dominated by the developed countries for many years, due to their substantial expertise, personnel, and financial resources. Historically, the developing countries have played a minor role in the work of the CCIR study groups due to a shortage of qualified personnel and a lack of funds for preparation activities and travel to the meetings. Smaller countries face a number of unique problems participating in the CCIR and the ITU in general. First, governments in smaller or developing countries often change rapidly. Telecommunication staffs are often changed just as quickly. This prevents many countries from developing the base of expertise and international contacts that would enable them to participate effectively in international meetings. Second, developing country telecommunications staffs are often small, consisting of between one and six people. In this country, there are hundreds of people in government and industry working on WARC preparations. At conferences, the problem becomes more severe, because one delegate cannot cover all the various meetings and drafting/working groups his or her country has an interest in. Finally, smaller countries often do not have the funds to adequately prepare their delegates. They do not have sufficient travel money to send their delegates to all the meetings that would help them understand and prepare for the WARC. Lack of funds also prevents many countries from beginning their preparations until the last minute, when it is too late. It is reported that some delegates get to the WARC before they even see other countries' pro-

posals. The industrialized countries, by contrast, begin preparing for WARCs years in advance.

Importance

The work of the ITU in spectrum management and effective U.S. participation in it is important for several reasons. Most broadly, the work of the ITU extends beyond radiocommunication services and encompasses virtually all aspects of international telecommunications. The agreements reached at the ITU form the basis for most of the world's use of radio services and contributes to an industry vital to economic, political and social interests.

Effective U.S. participation in the ITU is crucial for several reasons. Without international standards and procedures for sharing the spectrum, global radio communication and services would be impossible. Although international interference problems are not as much of a problem for the United States as for other countries, the United States must nevertheless coordinate services that are worldwide, such as safety services for aeronautical and maritime services.

> Leaving these matters to bilateral negotiations or regional associations is unlikely to produce satisfactory solutions given the large number of countries involved and the growing significance of global telecommunication networks.[16]

Participation in the ITU is also crucial to the international political and technical stature of the United States. Were the United States to pull out of or fail to ratify ITU documents on a regular basis, a poor precedent would be set that could jeopardize U.S. participation and negotiations in other international bodies. Finally, the ITU offers the United States an important opportunity to advance U.S. views on technical standards and regulations, promoting global standards that allow U.S. firms to take advantage of economies of scale in manufacturing and the provision of services. Such input is critical in maintainingg the technological and policy leadership of the United States in international radiocommunications.

Activities Outside the ITU

In addition to the international spectrum activities conducted under the aegis of the ITU, nations also engage in bilateral and multilateral discussions and

---

16"The Changing Telecommunication Environment,''op. cit., footnote 1, p. 11.

negotiations. Often these discussions involve neighboring countries trying to resolve specific interference problems. Bilateral discussions can also form the basis of more regional planning as in the case of the United States, Canada, and Mexico, which have agreements in many broadcasting areas. Multilateral negotiation takes place under the auspices of regional organizations such as the Conference of European Postal and Telecommunications (CEPT) administrations or the Inter-American Telecommunications Conference (CITEL), and in many international organizations with specific concerns, such as the International Civil Aviation Organization. Some advocate a more ongoing and more formal process or mechanism that would allow the United States to develop and coordinate U.S. positions with regard to these other organizations and countries.[17]

Changes in the ITU

The more intensified globalization of telecommunication networks, including increasing complexity of telecommunication technology and a growing diversity of actors in the telecommunication field, has created additional pressures. There are now more pressing demands on ITU for accelerated handling of information and closer coordination of the activities of members. With increasing network interdependence, more effective harmonization of actions is necessary to ensure optimal connectivity and operability of networks and services. These changes in the international telecommunication environment call for an urgent review of the role and activities of ITU, if it is to fulfill its historic mandate of facilitating global telecommunication development.[18]

Recognizing the pressing nature of these changes and the importance of aggressively meeting new challenges, and to keep up with the rapid pace of radiocommunication technology development, the ITU has embarked on a broad and vital revision of its structure and processes. There was special concern that the work of the ITU was becoming increasingly bogged down and ineffective, and that if changes were not made, ITU member countries could begin bypassing the ITU in international

standards and coordination activities. overall, there was a desire to make the workings of the ITU more businesslike, more regular, and less subject to political and emotional whims. The proposed changes in the ITU (if accepted) will substantially alter the way international spectrum policy is decided, and will have important consequential impacts on how the United States pursues its international spectrum policies. While many of the changes discussed below will not directly affect the proceedings of WARC-92, they will have important, if still uncertain, impacts on future radiocommunication conferences.

High Level Committee (HLC)

Background—Responding to the increasing complexity of the international telecommunications environment, the 1989 Plenipotentiary Conference (Nice) decided that:

a High Level Committee (H.L.C.) should be established to recommend, on the basis of an in-depth review of the structure and functioning of the Union, measures to enable the ITU to respond effectively to the challenges of the changing telecommunication environment.[19]

Accordingly, the Administrative Council at an Extraordinary Session in November 1989 established the HLC to examine current ITU structure and conferences and recommend changes to improve the functioning and efficiency of the organization and its activities in light of rapid telecommunications changes.[20]

Membership in the HLC consisted of representatives from 21 countries elected in 1989 by the Administrative Council. Each elected country then designated individual representatives. The U.S. representative to the HLC was Ambassador Gerald Helman, Senior Advisor to the Under Secretary of State for Political Affairs, who was assisted by staff from the Department of State's Bureaus of International Communications and Information Policy and International Organization Affairs, FCC, and NTIA.

---

[17]Hans J. Weiss and Raymond B. Crowell, ' 'Comments of Communication Satellite Corporation,'' presented before the National Telecommunications and Information Administration in the matter of a Comprehensive Policy Review of the Use and Management of the Radio Frequency Spectrum, Washington DC, Feb. 27, 1990.

[18]"The Changing Telecommunication Environment" Op. Cit., footnote 1, p. 2.

[19]Final Report of the ~@ Level Committee (H.L.C.) to Review the Structure and Functioning of the International Telecommunication Union, "Tomorrow' sITU: The Challenges of Change,' Document 145-E (Geneva: International Telecommunication Union, April 1991), pp. 12-15. (Hereafter: HLC Final Report).

[20]Administrative Council Resolution No. 990 defined the tasks of the group and selected 21 member states to send representatives.

Box 3-A-Summary of Changes Proposed by the High Level Committee (HLC)

1. The world of telecommunications is undergoing **rapid change in technology, in the creative and** worldwide application of that technology, and in its immensely varied commercial applications. The information and telecommunications revolution+-almost a cliche in the hands of writers and analysts-is a daily practical reality in the work of the ITU. The ITU remains unique and irreplaceable as an intergovermental organization, both in its leading role in the global information economy and society and in the manner in which it addresses the needs of developing countries and engages the private sector in its work as part of the wider ITU family.

2. Our [HLC] Recommendations aim to help the ITU to meet the challenges of change and to continue to play its leading role in world telecommunications. Our principal recommendations areas follows.

3. The ITU should not seek to broaden or change its overall mandate, but should play a stronger and more catalytic role in stimulating and coordinating cooperation between the increasing number of bodies concerned with telecommunications. It should also recognize the growth of regional bodies and develop with them relationships which retain the ITU's primary role but allow for necessary, complementary activities.

4. The supreme body should remain the Plenipotentiary Conference, meeting every four years. It should be supported by the Administrative Council, to be renamed ITU Council, playing a broader and more strategic role.

5. The substantive work of the ITU should be organized in three Sectors: Development, Standardization and Radioconmmunication. The Standardization Sector should include the current work of the International Telegraph and Telephone Consultative Committee (CCITT) and some standardization work currently done by the International Radio Consultative Committee CCIR). The Radiocommunication Sector should include most of the current CCIR work and that of the International Frequency Registration Board (IFRB) and its specialized secretariat. The division of responsibilities between the Standardization and Radiocommunication Sectors will be kept under review and adjusted when necessary to meet changing needs and to ensure efficiency. The Development Sector should encompass the current work of the Telecommunications Development Bureau (BDT). The distinct functions originally envisaged for the Center for TelecommunicationsDevelopment should be integrated into the BDT

6. The current full-time five-member IFRB should be replaced by a part-time nine-member Radio Regulations Board.

7. For each Sector, the supreme body should be aWorld Conference, supported by Study/Working Groups. World Conferences should be held between Plenipotentiary Conferences, in a regular cycle, to promote more effective planning.

8. For each Sector, elected Directors should head Bureaus at ITU headquarters. They should also chair Advisory bodies which, according to the needs of the Sector, should review its strategies, priorities and activities and help ensure coordination of work and adaptation between conferences to changing needs and circumstances.

(continued on next page)

The private sector also had input to the process through the CCIR and CCITT National Committees.

Changes—The changes recommended by the HLC could have a profound impact on the structure and functioning of the ITU, including the WARCs, although the timing of such changes is uncertain. And while the changes proposed by the HLC will have no direct impact on WARC-92, the potential ramifications of the changes for future conferences are significant, and add another element of change that U.S. spectrum policymakers must address (see box 3-A for a summary of proposed changes) .21 The HLC has recommended that the ITU be restructured into three equal sectors: Development, Standardization, and Radiocommunication (see figure 3-3). Each sector would be governed by its own conference and headed by an elected director. The technical work of the sectors would be conducted in study groups.

The new Radiocommunication Sector would combine the work of the CCIR and the IFRB, which would be changed to a part-time 9-member board.

21The HLC Final Report considers many issues affecting the future of the ITU. This section will concentrate only on those changes with a direct impact on radiocommunications and the spectrum management process. For a complete discussion of the changes proposed by the HLC, see HLC Final Report, op. cit., footnote 19.

Box 3-A—Summary of Changes Proposed by the High Level Committee (HLC)-Continued

9. **Each Sector should have** its own budget, with all costs and revenues clearly identified, to ensure that all costs are assigned to the appropriate "end user" Sector.

10. The Secretary-General is the chief officer of the Union, with a key role in strategic planning, management and coordination. This role should be strengthened. He should be supported by a new Strategic Policy and Planning Unit, reporting to him but serving the needs of all Sectors. He is also encouraged to set up a Business Advisory Forum through which he can conduct a dialogue with business leaders.

11. At the same time, and supported by improved management systems, he should delegate responsibility to Directors for the management of their budgets and staff, within agreed parameters. The Coordination Committee should play a stronger collegial role in conducting and managing activities.

12. Specific improvements should be made in the internal management of ITU headquarters, in the fields of finance, personnel and information systems. The primary aims are to: improve strategic planning and provide more effective financial, personnel and information management; promote, within this improved framework, delegation of responsibility, greater cooperation between staff and greater exercise of initiative; and, importantly, enable the staff more fully to realize their potential within a well managed organization.

13. Our [HCL] Recommendations seek to encourage greater participation by all those who have important interests in ITU activities. The ITU is an intergovernmental organization and Members are States represented by Administrations. But it exists to meet a wide range of interests: to facilitate provision of services to end users by operators, service providers and equipment manufacturers; and to assure effective use of the radio-frequency spectrum by all users. Non-Member participants also make a great contribution to its work Their even greater participation should be encouraged.

14. Our [HCL] Recommendations will increase some costs, but also lead to savings. With effective implementation, changes in the culture of the organization and the goodwill and support of the staff, we believe that the cumulative impact will have a positive effect on the finances of the ITU and will enhance performance. We have no doubt that the quality and dedication of all who work in the Union will ensure that the ITU does respond to the challenges of change.

15. Our [HLC] proposals for implementing our Recommendations are in Chapter VII. It is vital that the ITU not lose momentum in taking action on this report and in implementing its recommendations. Any delay will weaken the ITU's capacity to respond to the rapidly changing telecommunication environment.
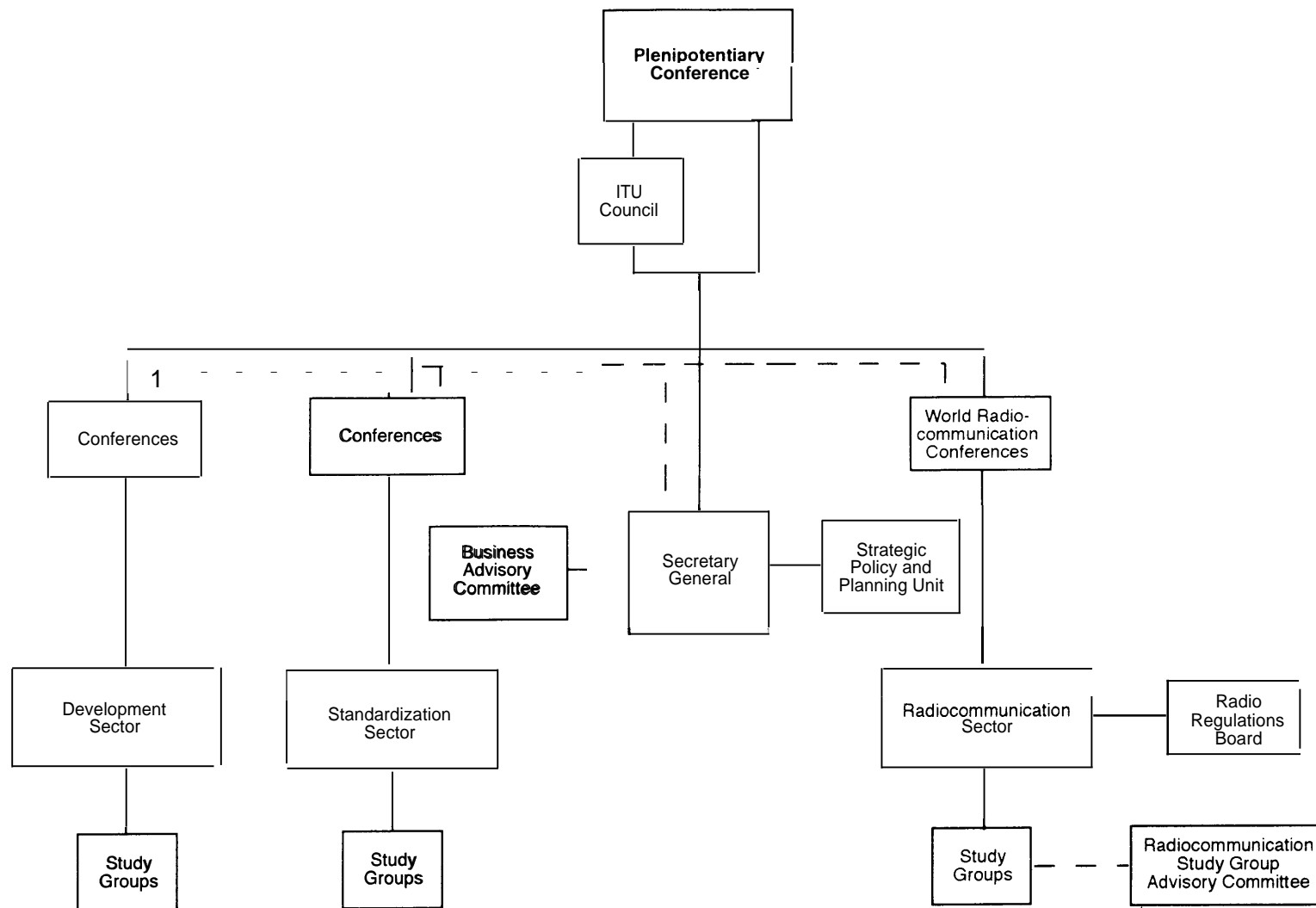
SOURCE: Final Report of the High Level Committee (_H.L.C.) to Review the Structure and Functioning of the International Telecommunication Union "'Tomorrow's ITU: The Challenges of Change," Document 145-E (Geneva: International Telecommunication Union, April 1991).

The radio activities of the ITU would be directed by World Radiocommunication Conferences, which would combine the work of the CCIR Plenary Assemblies and the WARCs. The Committee also recommended that the new conferences should include a coremittee open to nongovernmental bodies in order to increase the amount and quality of RPOA, SI0, and other interested organizations' participation. The current work of the CCIR study groups would continue, but some work related to standards would be transferred to the Standardization Sector, and a Radiocommunication Study Group Advisory Committee would be established to guide the work of the groups.

In addition to structural changes, the HLC has recommended a regular schedule of Plenipotentiary Conferences and administrative conferences for each of the new sectors. Meetings of World Radiocommunication Conferences would take place every 2 years. This regular schedule of world radio conferences may have several effects. First, a regular schedule should make it easier for countries to plan for conferences in terms of budgets and personnel, and gives the United States an opportunity to formalize and institutionalize WARC preparation processes, both in the government and industry. Private sector involvement in WARC preparation activities could become more integrated and continuous. Rather than the uncertain budget demands of irregular WARCs, including salaries, temporary staff, and wildly fluctuating travel demands, a regular cycle allows administrations (and the private sector) to get into a rhythm that promotes more efficient and rational planning for the WARCs. Personnel requirements could also be rationalized

Figure 3-3—International Telecommunication Union Structure:
Changes Recommended by the High Level Committee

because a regular schedule would allow managers to apportion time and hire staff according to needs. This should serve more broadly to regularize the domestic preparation process itself and presents an opportunity for the United States to build a core group of international staff with continuing responsibility for WARC preparations. Such changes could potentially enhance the efficiency of the U.S. preparation process and improve U.S. effectiveness at international conferences.

The HLC recommended a number of ways to increase the formal and active participation of members of the private sector in the work of the ITU. As countries have liberalized and privatized their telecommunications industries, more new companies have come into existence. They are playing an increasingly important role in the ITU process, especially through the work of CCITT/CCIR study groups. The HLC recognized this greater role and has recommended that the Administrative Council begin a review of the participation of nonmember representatives. It also recommended that intergovernmental satellite organizations be given greater status and access to ITU meetings and that a Business Advisory Forum be created to advise the Secretary-General on private sector interests and concerns.

Impacts—The impact of these changes on the functioning of the ITU and its work in spectrum management has yet to be felt. The timeline on which these changes will take place if adopted is still unclear, but changes are likely to be phased in over a period of years. Some alterations, such as those to the IFRB, will require the approval of a Plenipotentiary Conference, while others may require only Administrative Council or Secretary-General approval. Still other changes reflect and reinforce improvements that have been underway for several years, especially in the CCIR./CCIIT The final impacts of the proposed changes (which are passed and which are not) will depend on where the decisions are made, what changes are finally approved, and how long it takes to implement them.

The major effect of regular radio conferences is to make the ITU WARC process more orderly and predictable, yet flexible. The future schedule of conferences is now uncertain. Hence, great importance has been attached to WARC-92, since no one knows when the next opportunity to address current issues will be. With future radio conferences occur-

ring every 2 years, and planning for conferences going on almost continuously, it should be easier and faster for each country and the ITU overall to address rapidly changing technological issues. These changes could also make it easier to schedule issues to allow for longer, more thorough consideration and preparation time if needed—since the time to the next conference would not be so long and would be known. This would have the effect of lessening the uncertainty associated with today's conferences because unresolved issues could be more easily scheduled for upcoming conferences. It is uncertain whether regular world radio conferences will be broad, taking up a variety of topics every 2 years, or more specialized, dealing with specific topics. It seems likely, however, that future WARCs will deal with a more limited set of issues, even if they are not completely specialized.

The benefits of regular conferences do not come without costs, however, and will not solve all the problems with ITU spectrum allocation and management procedures. The main disadvantage is that regular conferences will require additional finding on the part of the private sector and government. Instead of sporadic preparation, the preparation process will become continuous, requiring the commitment of additional staff and funding resources. The increased resource requirements also represent a strong barrier to developing countries, who have limited personnel available for WARC activities and are already short on funds. Regularizing the conference schedule will probably not improve developing country participation in WARC activities.

Overall, the changes proposed by the HLC may prove to be far-reaching, but not dramatic. Many of the recommended changes reinforce and legitimize changes that were already underway or had previously been proposed. The work of the CCIR study groups, for example, may not be affected much beyond the streamliningalready put into place. In any case, changes in the structure and functioning of the ITU will require changes in the ways in which the United States prepares for future conferences. Regular conferences may require the establishment of permanent offices to handle conference preparatory activities. The greater involvement of the private sector in the activities of the ITU should greatly benefit the United States with its already extensive industry involvement, but closer coordination between government and industry may be necessary to coherently promote U.S. radiocommu-

nication policies abroad. These shifts offer both challenges and opportunities that must be planned for if the United States is to continue to be effective in world radiocommunication policy.

Voluntary Group of Experts

In addition to (complementary with) the work of the HLC, the ITU has also begun a study of the Radio Regulations that govern the use of the radio frequency spectrum internationally. This study is being conducted by a Voluntary Group of Experts (VGE) in an effort to simplify the Radio Regulations and improve use of the spectrum worldwide. The VGE was established by the 1990 Administrative Council based on the recommendation of the 1989 Plenipotentiary Conference (Resolution PL-B/3). Membership is open to all member countries. At the first meeting of the VGE, which took place in late January 1991, experts from 22 countries and four international organizations participated. The VGE plans to complete its work by mid-1993. A WARC will then be needed to implement its recommendations since they directly concern the Radio Regulations.

The VGE is pursuing several objectives. Simplification of the international Radio Regulations is its primary goal. Over the years, as successive conferences have added to and modified the Radio Regulations, complaints have been raised that the regulations are too complex, very time-consuming, administratively burdensome, and not able to keep pace with the rapid changes in technology .[22] There are over 700 footnotes in the international Table of Allocations that make specific modifications to the allocations to accommodate specific country or service requirements. Many of these are now considered obsolete. By simplifying the Radio Regulations, the VGE hopes to increase the flexibility of spectrum use and management. This is a much broader and long-term task that will affect how spectrum is allocated at WARCs.

To accomplish its objectives, the VGE has divided its work into three tasks: Task 1 considers the allocation process, including definitions of radio services, alternative approaches to spectrum allocation, and the use of footnotes in allocation tables. Task 2 addresses the problems of frequency assign-

ment, including procedures for coordinating and recording assignments and preventing interference. Task *3* encompasses operational and administrative provisions. Since most of the work of the VGE is highly technical, the CCIR established Task Group 1/1 to provide the VGE with expert support.[23] The United States has representatives on both the VGE and Task Group 1/1.

Because VGE's work began only recently, its possible impacts on the functioning of the ITU and its effects on the spectrum allocation and management process are unclear. The work of the VGE is closely tied to that of the HLC and is, in part, dependent on the implementation of proposed HLC changes. If these changes are not approved or implemented, the work of the VGE may be undermined.

The fact that the work of the VGE is so technical may have limited its appeal to high-level policymakers in the United States. Little attention is being paid to the work of the VGE outside of those actually involved. It may also be that HLC activities have overshadowed the work of the VGE (which was established after the HLC) and diverted the attention of top policymakers. Reportedly, there was initially little high-level thought or planning being given to the work of the VGE, and no concrete goals have yet been established for the U.S. representatives to the VGE to follow. A private sector task force under the national CCIR's Strategic Planning Committee provides advice to the U.S. VGE representative on possible U.S. objectives in the VGE.

CCIR

Much of the impetus for change in the ITU originally came from the international consultative committees. Several years ago both the CCIR and CCITT were having increasing difficulty keeping up with the rapid pace of technological change. Technical issues must be quickly and effectively decided if the ITU is to maintain its leadership role in international telecommunications, and ITU officials feared that, if the ITU could not act quickly enough in setting standards and rules of operation, member countries and the private sector would resort to institutions outside the ITU, including the emerging regional standards organizations, to get things done.

---

[22]G.C. Brooks, "Possible Evolution of the International Regulation of the Space Services, " *Telecommunications Journal,* vol. 58, No. II, February 1991, p. 88.
[23]The membership of the VGE overlaps with lhsk Group 1/1 as well as with the HLC.

It was felt that this could hurt the development of global networks and services.

In an effort to speed up their processes and improve their responsiveness, first the CCITT and then the CCIR adopted reforms to improve their work and streamline their processes. CCIR's Resolution 24, adopted in 1990, was designed to accelerate the approval of recommendations on radio standards by streamlining the work of the study groups and adopting faster working procedures. These changes have taken place independently of the HLC study and are being folded into the HLC proposals. Many of them are already being implemented.

CCIR has convened a new Study Group 12 to examine ways to accommodate the growing demand for mobile services and spectrum. In the long-term, if the study group proves successful in its mission, the way is opened to consider whether a much broader array of spectrum management issues, normally dealt with at Administrative Radio Conferences, might be handled by more dynamic Consultative Committee mechanisms.[24] In the absence of possible changes to ITU structure and procedures (discussed below), this shift to the CCIR groups could benefit the United States in that the CCIR activities have long been dominated by United States and developed country contributions. A strengthening and streamlining of the CCIR process/ procedures could translate into a stronger U.S. presence in the ITU generally, and represents an opportunity for the United States to both push technology advancements more rapidly and lay the groundwork for U.S. proposals at future WARCs.

Under the changes proposed by the HLC, the work of the CCIR would be subsumed under the Radiocommunication Sector and the CCIR as an separate body would be eliminated.[25] The work of the CCIR study groups, however, would continue largely intact. Many of the administrative functions of the CCIR would be merged with the WARCs into World Radiocommunication Conferences.

Development

With the rising numbers and political power of the developing countries, development—specifically telecommunications facilities and systems development—has become an increasingly important concern of the ITU. Over the last decade, the ITU has made telecommunication development and technical assistance to developing countries a more integral part of its mission. In 1985, for example, the ITU established the Center for Telecommunications Development, and in 1989 the Nice Plenipotentiary created a new Bureau for Telecommunications Development. The trend continues in the HLC proposal to create a separate Development Sector equal in status with the Standardization and Radiocommunication Sectors.

The issue of development, and the potential broadening of the mandate and activities of the ITU indicates a major shift in the purpose of the ITU and could have a major impact on international telecommunications policymaking. Although its direct impacts on spectrum policymaking are unclear (since the changes have not yet been implemented), two scenarios appear possible. First, the increasing concentration on development activities and the high status of the Development Sector may result in a shifting of resources away from radiocommunication activities.[26] Given the concurrent regularization of the WARC schedule, it will be important for the United States to monitor the situation very closely to ensure that the important activities of the WARCs and the (CCIR) study groups are not given short shrift. Second, a focus on development may affect the work programs the study groups undertake-moving them away from allocation, sharing, and standards work and toward more operational or design issues.

Major Trends Shaping International Telecommunication Policymaking

As the world moves toward a society and economy based on information and knowledge, telecommunications, including the new radio-based technologies, will assume an increasingly important role in all aspects of life.

---

[24]Pekka Tarjanne, "An Unusual Event," *Telecommunications Journal,* vol. 58, No. III, March 1991, p. 123.

[25]Most CCIR functions will continue under the Radiocommunication Sector, but some activities dealing with radio and public network interface standards will be transferred to the Standards Sector.

[26]Comments of COMSAT before NTIA, op. cit., footnote 17.

Historically there has been a tendency to view telecommunication as a service by itself. Consideration of telecommunication as a facilitator of economic development, as a source of global competitive advantage, as a provider of social and welfare benefits, as a contribution to reducing regional disparities, and as a provider of information for the general elevation of the population, have not been dominant considerations in the formulation of national telecommunication policies. However, for the future, with information and knowledge becoming strategic resources, and telecommunication becoming the primary means determining their availability, a policy framework for making telecommunication a truly universal resource will need to emerge. With more people engaged in the service economy in post-industrial societies, including certain sections of developing countries, telecommunication matters are becoming increasingly important for national, economic and social policy in all countries.[27]

Broad changes in the economic, social, and political landscape will shape the future of radiocommunications policymaking.[28] These changes will substantially affect the arena for international radiocommunication policy, and present U.S. policymakers with a number of important challenges that must be forcefully and coherently addressed if the United States is to continue to play a leading role in international spectrum policymaking. The following sections summarize some of the most important trends shaping the international telecommunication environment.

Pace of Technological Change

The pace of technology development in radio-based services has accelerated dramatically in recent years (see ch. 2). This acceleration, coupled with increasing congestion in many parts of the radio frequency spectrum, has put substantial pressure on both domestic and international radiocommunication policy processes. Spectrum managers are struggling to accommodate increasing demands for frequencies for new services and the expansion of existing services, while at the same time ensuring minimal interference and enhanced efficiency. Current structures and processes are increasingly unable to keep up with the rapid pace. The inclusion of

many completely new services on the agenda for WARC-92 is evidence of the rapid pace of technology development, and the ITU's efforts to respond.

These pressures put a premium on rapid and flexible approaches to spectrum policy, and present a challenge and an opportunity to make aggressive changes to policy structures and processes. Policymakers must respond rapidly and flexibly in order to take maximum advantage of technology advances. In the United States, NTIA recently completed a comprehensive report on U.S. spectrum management policy, and the FCC has initiated several proceedings on new services and is studying the creation of a spectrum reserve for new technologies. Internationally, the ITU is in the midst of efforts to streamline its processes and adapt its structure to better address emerging telecommunications needs (see above). If conferences were scheduled every 2 years, technology developments would be rapidly addressed and planning for future conferences could flexibly adapt to members' concerns and priorities in a more timely manner. For the United States to adequately respond to the accelerated development of new technology, adequate resources must be part of a coherent plan that links domestic and international spectrum policy goals.

Globalization

Telecommunication and radiocommunication systems are interconnecting on a larger and larger scale, giving rise to telecommunication networks and services that are increasingly global in scope. New international satellite systems are being planned and the connection of continents with fiber optic cables continues. Services are becoming increasingly internationalized as new information, computer, and communication services merge and extend their reach to all countries of the world. At WARC-92, for example, the main issue in future public land mobile services (see ch. 1) is how and in what band to establish a common core of frequencies that users can access from any location on Earth. Major new services, such as Broadcasting-Satellite Service-Sound and personal communication services (PCS)

---

[27]"The Changing Telecommunications Environment, " op. cit., footnote 1, p. 3.

[28]In its Final Report t. the ITU, the High Level Committee identified six major trends affecting the international telecommunication environment. They include: globalization, pace of technological change, information economy and society, rising importance of regional organizations, the development gap, and new players and alliances. See HLC Final Report, op. cit., footnote 19; these ideas are also reflected in Government of Canada, Department of Communications, Telecommunications Policy Branch, Spectrum and Orbit Policy Directorate, ''Towards a Spectrum Policy Framework for the Twenty-First Century, ' Discussion Paper, September 1990.

are being developed not only for domestic use, but with global markets in mind.

As a result of the worldwide expansion of technologies and services, telecommunications markets and competition in those markets are becoming increasingly global.

> Telecommunication has become increasingly important to industry in most countries as a basis for improving on organization's internal efficiency in expanding global markets. For many firms in both manufacturing and service sectors, it also has become a tool to enhance competitiveness by providing instant communication and information exchange among the many different locations of translational corporations around the world, and between major fins, their suppliers, their customers, and other intitites that together makeup a firm's network of business relations.[29]

Because of the large potential markets for international services such as satellite broadcasting and mobile satellite services, the spectrum is increasingly being viewed as a strategic resource for the future development of radio services and products for the consumer.[30]

Tempering this trend is the reality that negotiating agreements on international standards and allocations is becoming increasingly difficult. As the number of manufacturers and vendors increases and users become more sophisticated, positions diverge. International consensus is often undermined by numerous exceptions to the Radio Regulations. At the same time, for services that have clear worldwide applications and effects, such as safety and distress services, opinion is still strong that worldwide allocations and protections are desirable.

For U.S. spectrum policy, globalization means comprehensive planning and management of domestic requirements in the context of policy changes taking place at the international level.

> The expansion of telecommunication networks and services has pushed many issues of national policy to the international level. Global information and communication networks require much more than compatible technical standards. A higher degree

of compatible telecommunication policies and regulations is needed in respect of service offerings, tariff structures and other matters. . . there is no longer a clear demarcation between many national and international networks.[31]

This trend makes the effective functioning of the ITU, as the primary international body for addressing telecommunication matters, critical, and effective U.S. participation in the process even more important.

Rising Importance of Regionalism

At the same time that telecommunication systems and services are becoming increasingly global, regional networks, services, and organizations are becoming more widespread. The ITU notes that:

> Telecommunication systems are becoming translational, and subregional in many areas of the world. Pan-European, Andean, Central American, African, South Pacific Islands, Nordic systems, are all at various stages of design and development. Physical networks are interconnected regionally; services are crossing borders; tariffs are being coordinated; regional standards institutes and organizations are being established; and the planning of regional satellite systems continues. All geographical areas have one or more regional telecommunication bodies, with differing mandates and missions but collectively addressing operations, planning, financing, training, and policy .[32]

The rise of regional cooperation and coordination has been driven by several converging trends. Advances and proliferation of many new technologies have given regions a variety of ways to address telecommunications needs, and what technologies a region chooses depends on what types of systems and services the countries want to develop and how. As users become more sophisticated, technical choices will further diversify, creating more regional and subregional networks. The creation and interconnection of such networks requires regional arrangements for fostering harmony and cooperation between telecommunication operating entities and for improving administrative and technical services across regions.[33] Economic and political forces are also leading countries with common interests to join

---

[29]"The Changing Telecommunication Environment," op. cit., footnote 1, p. 11.

[30]Government of Canada, Discussion Paper, op. cit., footnote 28, p.10.

[31]"The Changing Telecommunication Environment," op. cit., footnote 1, pp. 11, 29.

[32]Ibid., p. 18.

[33]1bid., p. 31.

forces as they seek to integrate efforts on many policy fronts in order to expand their economies and better compete in world markets.[34]

These pressures have resulted in many different forms of regional cooperation and collaboration, including the formation of free trade zones (United States, Canada, and possibly Mexico) and common markets (European Community (EC)). They have also led to the establishment or strengthening of different regional organizations such as the Pan African Telecommunication Union, Asia Pacific Telecommunity, and the Arab Telecommunication Union.

The foremost example of the rise of regionalism is the EC.[35] In international telecommunications negotiations, the countries of Europe have taken bold steps to coordinate their policies and the presentation of positions. CEPT, established in 1959, currently consists of31 European telecommunications administrations. It synchronizes individual national telecommunications positions into an integrated regional telecommunications policy. In 1988 the European Telecommunications Standards Institute was spun out of CEPT in order to harmonize and strengthen the standards-setting process in Europe.[36] The power of the European countries in international forums such as the ITU has increased as their political and economic ties have become closer, and could increase further with the proposed merger of the EC countries and the countries comprising the European Free Trade Association.[37] This merger would create a trade zone encompassing 19 countries and more than 350 million people, significantly larger than the U.S. market.

In addition to the new regional arrangements and organizations, existing regional bodies are also showing a resurgence. They are being modified and substantially strengthened to adapt to the new world environment. These organizations will require effective organization and adequate resources to meet increasing demands.[38] Policymakers at NTIA and the FCC, for example, are mounting strong efforts to invigorate the Inter-American Telecommunications Conference (CITEL), the regional telecommunications organization of the Western Hemisphere, to bring increased coordination to Western Hemisphere policymaking and as a partial counter to the strength of the CEPT voting bloc (see box 3-B). The private sector, which sees CITEL as a potentially effective forum for addressing regional telecommunications issues and has recently begun to recognize the potential of Latin American and Caribbean markets, has been actively involved in these efforts. As a result, CITEL preparations for WARC-92 have been an important focus for both government and private sector interests (see box 3-C).

Increases in regional power and coordination will have significant impacts on the ways in which world telecommunications policy is decided—impacts that could be either positive or negative. On the negative side, regionalism could increase and strengthen bloc voting within the ITU-with negative impacts on U.S. interests. U.S. negotiators, for example, have noted increased difficulty at recent WARCs (and at recent meetings of the CCITT) negotiating with individual European countries. There is concern that tight European coordination and a corresponding increase in bloc voting will lead to a strengthening of the European positions and a diminishing of U.S. interests and power.

The rise of regional organizations and voting blocs could also lessen the importance of international bodies such as the ITU and the work of the CCITT and CCIR. Some analysts have expressed concern that participation and resources devoted to new regional activities will detract from the resources, time, and commitment devoted to the ITU, and more global concerns.[39] For example, many believe that regional standards organizations could be the driving force in world standards-setting activities, superseding the ITU. Regional standards

---

[34]Comments of COMSAT before NTIA, op. Cit., footnote 17, p. 14.

[35]European Community currently has 12 members: Belgium, Denmark, France, Germany, Great Britain, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, and Spain.

[36] Significantly, approximately one-half of the new members joining the European Telecommunications Standards Institute in the first half of 1991 were wireless communication companies. Similar regionat standards-setting bodies also exist in North America (T- 1) and Japan (the Telecommunication Technical Council-TTC). For a broader discussion of the issues of standards-setting, see forthcoming OTA study on International Standards.

[37]EFTA members include: Austria, Finland, Iceland, Liechtenstein, Norway, Sweden, and Switzerland. See Patrick Oster, "Treaty Maps Out a Unified Europe," *The Washington Post*, June 16, 1991, p. H1.

[38]"The Changing Telecommunication Environment" Op. cit., footnote 1, p. 40.

[39]See the comments of COMSAT before NTIA in the matter of its comprehensive spectrum review, op. cit., footnote 17.
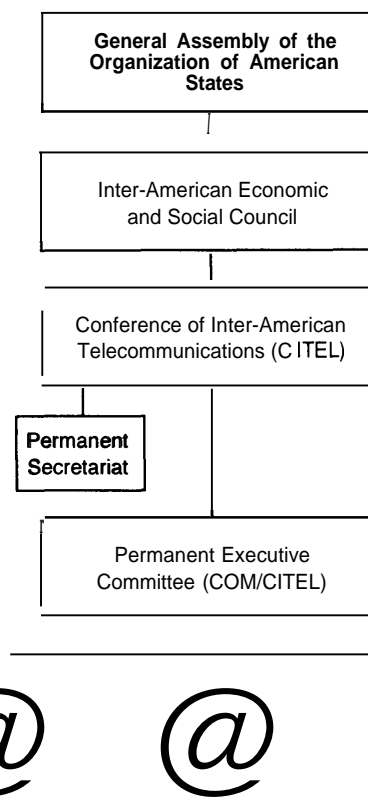
Box 3-B—Inter-American Telecommunications Conference-CITEL

The Inter-American Telecommunications Conference (CITEL), established in 1963, is a Specialized Conference of the Organization of American States (OAS).[1] CITEL'S primary mission is to promote the development and coordination of telecommunication policies and systems in the Americas by conducting studies of technologies, standards, and legal issues; convening meetings to address these issues; and maintaining contact with other regional telecommunication organizations and the ITU.. In the last several years, one of CITEL's primary functions has been to serve as a regional forum for the development of members' positions for WARC-92. Thirty-four countries in South, Central, and North America and the Caribbean are members.[2]

CITEL is not a separate institution within the OAS-it has no permanent staff, officers or a headquarters. Rather, CITEL is an ongoing series of conferences that meet periodically (the next conference, CITEL-VI, is scheduled for the fall of 1991) to establish priorities and direct the work of CITEL's four permanent committees. The Permanent Executive Committee (COM/CITEL), which serves as the executive organ of the Conference, deals primarily with administrative matters. Three Permanent Technical Committees (PTC) are concerned with substantive technical issues (see figure 3-B-l). PTC-I addresses matters involving public telecommunications systems, PTC-II addresses broadcasting issues, and PTC-III is concerned with radiocommunication issues other than broadcasting. The work of COM/CITEL and the PTCs is supported and overseen by a Permanent Secretary, a position that is, ironically, not permanent.

Historically, CITEL has played a minor role in the region's telecommunication activities, reflecting the low priority traditionally given telecommunications by the countries of the OAS.[3] CITEL budgets have been underfunded (generally less than $100,000 per year), and the lack of domestic funds has substantially

Figure 3-B-l—Organization of the Conference of Inter-American Telecommunications Within the Organization of American States

KEY: PTC-Permanent technical committee

SOURCE: U.S. Department of Commerce, National Telecommunications and Information Administration, Frequency Management Advisory Council, United *States* Preparations *for the 1991 Inter-American Telecommunication Conference (CITEL)* (Washington, DC: Apr. **1, 1991), p. 6.**

---

[1] The material in this section is based on U.S. Department of Commerce, National Telecommunications and Information Administration, "United States Preparations for the 1991 Inter-American Telecommunications Conference (CITEL)," Report of the Frequency Management Advisory Subcommittee, April 1991. In addition to background information on CITEL, the report contains specific recommendations on improving the effectiveness of CITEL and U.S. positions regarding CITEL activities. For more extensive discussion of the history and efforts to restructure CITEL, see Brian Segal, "Report on the Importance of CITEL and Options for Restructuring,' Report prepared for the Fourth Conference of CITEL, March 1983; and John J. O'Neill, Jr., "Commentary on Report on the Importance of CITEL and Options for Restructuring," unpublished document, March/April, 1984.

[2] CITEL member states: Antigua and Barbuda, Argentina, the Bahamas, Barbados, Belize, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Dominica, Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, St. Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, United States, Uruguay, and Venezuela.

[3] Historically, the benefits of telecommunications for economic development have not been well understood or appreciated. Consequently, it has been difficult to convince OAS/CITEL members that telecommunications activities are important enough to warrant significant funding. The current interest in CITEL activities via-a-via WARC-92 indicate that these attitudes may be changing. See O'Neill, op. cit., footnote 1.

reduced the ability of member countries to participate in the work of ClTEL. As a result, CITEL does not have the status and importance necessary to achieve its stated goals, and is generally viewed as lacking substance and ineffective. This view has translated broadly into a lack of commitment from member states, and a consequent reluctance to provide additional funding. An additional problem identified by U.S. delegates to international conferences is that some Latin American delegations lack continuity. Changes in governments and telecommunications ministries bring new delegates to the conferences that have never attended before. This has made it very hard to develop lasting relationships with some governments. Consequently, until recently, CITEL has attracted little attention from U.S. policymakers and the private sector.[4]

Changes implemented in the past 5 years may make CITEL more effective. Driven by the changes in world politics and a newly competitive world telecommunications environment, CITEL is seeking to broaden its activities and is encouraging greater private sector participation. Mandates and agendas of the PTCs have been expanded to include more items of regional interest and of interest to the private sector. Steps have also been taken to improve work processes that would allow the PTCs to become more effective and responsive to the needs of ClTEL's members. More such changes may result from the sixth quadrennial meeting of CITEL (VI-CITEL) to be held later in 1991. That meeting will examine the performance of CITEL, identify ways to improve its performance and give member states an opportunity to reassess their participation and support of CITEL.

Efforts to make CITEL a more effective organization have gathered substantial momentum in the last year. There is a growing feeling among U.S. and foreign government representatives and the private sector that CITEL should play a more significant role in coordinating regional telecommunication activities. A new spirit of compromise has been noted by delegates from several countries, including the United States. Developing countries also view CITEL as a valuable source of technical support in developing their own WARC proposals. When no national position has been developed, many countries may use CITEL views as (the basis for) their own national positions.

In the last several years, CITEL has received increased attention from some United States international spectrum policymakers and the private sector. They increasingly view it as an important, but underutilized, underfunded and underpowered resource for regional coordination and in the WARC preparation and negotiation process. For example, CITEL is playing an active role in WARC preparations for 1992 through an Interim Working Group of Permanent Technical Committee III (PTC-III), which is attempting to form common CITEL views which would then be carried into the WARC (see box 3-C).

Several factors have contributed to the renewed interest of government policymakers. First, the growth and strengthening of regional voting blocks within the ITU, in particular the European countries, has led the United States to look for new alliances.[5] Beginning in the late 1980s, the Europeans, through the Conference of European Postal and Telecommunications administrations (CEPT), began to formulate strong regional positions that were strictly adhered to at international conferences. This type of unity has made it increasingly difficult for the United States to promulgate its views in a forum such as the ITU with its one-nation, one-vote system. Consequently, to improve its position and in order to offset developing country blocs and the increasing power and solidity of the European countries, the United States is attempting to build regional support through the CITEL conferences and by advancing common CITEL views that will hopefully reflect United States interests. Implanting United States interests in the larger context of common CITEL views will provide added support for U.S. positions and may improve bargaining positions and chances of success at the WARC. U.S. Policymakers, however, must remain flexible in these negotiations in order to build support for a wide range of common views. Strong preliminary work at CITEL before WMC-92 should enhance the U.S. leadership role at the Conference. Developing countries also see CITEL as a reaction/counter to the increasing power of the European countries, and view it as a valuable

---

[4]For example, only half the member countries sent delegations to the most recent meetings of PTC-III (Ottawa, September 1990) and the Interim Working Group preparing for WARC-92 (Mexico City, January 1991 and Washington DC, May 1991). This may reflect a lack of commitment or merely a lack of travel funds. However, for CITEL meetings, this was a good turnout.

[5]The European Community (EC) and CEPT are not equivalent. CEPT was formed in 1959 to specifically represent the interests of the European post, telegraph, and telephone administrations (PITs). It now represents the interests of 31 European telecommunications administrations. The EC is more broadly focused. Telecommunications policy in the EC has evolved, at least in part, in reaction to the narrow, traditional views of the PTTs and CEPT, but recently, EC telecommunications policy has begun to reflect the broader goals of the EC itself-to promote unity and integration among European nations. CEPT has come under attack in recent years for its closed system, and has taken steps to reform, such as spinning off its standards activities. However, it still wields considerable influence in international radiocommunications activities.

(continued on next page)

Box 3-B—Inter-American Telecommunications Conference-CITEL-Continued

opportunity to **prenegotiate some of the WARC issues. This type** of interaction **is** seen as very valuable in allowing developing country **governments to** prepare more effectively for the **WARC.** Second, CITEL offers a way to coordinate telecommunication policy on **a regional** basis, apart from any **international** concerns. There is increasing **recognition among the countries** of CITEL that technologies are increasingly crossing national boundaries and that domestic policies alone will not guarantee development. In this sense, **its aims** mirror (and extend) the theme **of** regional cooperation evident in the Enterprise for the Americas initiative, the Canadian Free **Trade Pact and the** possible **Mexican** Free Trade Agreement.

Traditionally, private sector **participation in CITEL has been** limited, **perhaps because** of ClTEL's general ineffectiveness. The **private** sector is not allowed to **participate directly in** most activities, and **industry interest in** CITEL's activities has been minimal.[6] Efforts are now under way to **increase** industry **participation in PTC-II and** PTC-III There is some **support in the U.S. private sector** for strengthening ClTEL. Industry **believes** that a mom effective forum **is needed** to focus attention **on the practical and technical** issues facing telecommunications providers in the region, **including** standards. **Telecommunication vendors and** service **providers** have also begun to recognize the potential and the importance of Latin American telecommunications markets. **A** series of conferences such as CITEL provides **an opportunity** for United States **companies** to make contacts in potentially **lucrative** Latin American markets where they have historically **been** overshadowed by European competitors. The extensive participation by industry in the recent PTC-III **WARC** Interim Working Group **meeting** held in Washington, DC in May 1991 demonstrates the extensive interest that the private sector has in CITEL and its **member states.**

Although **there is** much **support** for **strengthening the** role of CITEL in regional telecommunications **activities** and **WARC** preparations, some policymakers remain skeptical. It remains to be seen whether potential changes will occur, whether members' commitment to CITEL can be sustained, and how successful CITEL's activities in standards-setting and WARC preparations will be. Changes in **attitude** and the commitment **of** a small number **of** dedicated policymakers to make CITEL a more effective **organization** may not be enough. The future success of CITEL will depend on continued and high-level commitment by member governments, increased private **sector** participation and a proven record **of success in** accomplishing substantive work— including agreement on major spectrum issues. The primary challenge for CITEL **is** to attract the funding from the OAS necessary to improve its effectiveness.

The results of government and private sector efforts to enhance the role of CITEL and the **strength of common** views that might **emerge** will not be seen until the WARC concludes. **Even if the** common views forged at CITEL do not endure, or **regional cooperation falters, efforts** to raise the level **of CITEL will likely** continue. Improving the level **of ClTEL's** work is a long-term **process-it** is too **soon** to expect spectacular **results.**

---

[6]The only way for the private sector to participate is through membership on U.S. delegations to CITEL meetings. In 1987, CITEL adopted a resolution encouraging mom direct private sector participation in the activities of PTC-I. This experiment has been generally considered a success, and there is increasing pressure to open up PTC-II and -III. However, there is as yet no formal mechanism for direct private sector participation in PTC activities.

---

organizations could **coordinate their efforts** and institute procedures to **avoid duplication** of **work** within the **CCIR** and CCITT. Most **substantive work** would be **done in regional bodies, and** then **merely confirmed** at ITU conferences. On the other hand, regional organizations and conferences could serve as important precursors to the international conferences—a way to sample ideas, build support, and prenegotiate some conference issues.[40] Many regional associations are attempting to facilitate coordination and harmonization across regions as a stepping stone to global coordination and harmonization through the ITU.[41] These efforts could make the ITU more efficient in developing global standards.

---

[40]In commenting on regionalism in the standards-setting proeess, COMSAT notes that:"the joint meeting of the T-l, ETSI, and TTC organizations. . . was an important first meeting to explore mutual cooperation among these regional bodies, and to discuss ways to enhance the effectiveness of the CCITT in its global standards role," ibid., p. 15.

[41]"The Changing Telecommunication Environment, op. cit., footnote 1, p. 6.

Box 3-C-CITEL Preparations for WARC-92

At its August 1989 meeting, Permanent Technical Committee III (PTC-III) of the Inter-American Telecommunications Conference (CITEL) established an Interim Working Group (IWG) to work out common regional views CITEL member countries could then use in developing their own WARC proposals. This was the first time that formal common positions had been attempted by CITEL members. After the agenda for the WARC was finalized in June 1990, PTC-III devised a work schedule for the IWG, and countries agreed to develop papers on WARC agenda issues for consideration by the Group.

The IWG met twice. At Mexico City in January 1991, 13 countries attended, and considered approximately 60 input papers and 40 technical documents. Before the formal meetings of the Group, a seminar on WARC-92 issues was held to provide in-depth information to the delegates. The results of the meeting were generally viewed positively by representatives from both foreign countries and the United States. The delegates agreed to common CITEL views on a number of WARC agenda items, and produced a first draft of a comprehensive report covering the most important WARC-92 issues.

The IWG met for the second, and final, time in Washington, DC in May 1991. Representatives from 16 countries, three international organimations, and an observer from the Conference of European Postal and Telecommunications Administrations (CEPT) attended. Approximately 90 new input papers were considered by the delegates and more than 20 papers were presented by members of the private sector at a technical symposium held during the week of the meetings. Foreshadowing future debates, a large number of the papers concerned Broadcasting-Satellite Service-Sound and Mobile Satellite Services, including low-Earth orbiting satellites. The first draft of the group's report was substantially revised and contained common CITEL views on several items. Many of the most important issues, however, could not be agreed to, including specific allocations for high frequency radio broadcasting, Broadcasting-Satellite Service-Sound, high-definition television, some Mobile Satellite Services, and Future Public Land Mobile Telecommunication Systems. Delegates were generally pleased with the outcome of the meeting, although some voiced disappointment that more common views were not agreed upon. The report will now be sent to the chairman of PTC-III and all the CITEL governments for use in preparing their own proposals for WARC-92.

SOURCE: Organization of American States, Interamerican Telecommunications Conference, Permanent Technical Committee III, "Report of the CITEL 1992 World Administrative Radio Conference Interim Working Group," Document WARC-92/62 Rev. 2, May 10,1991.

Liberalization and Privatization

As the trend toward increasing global competition intensifies, both developing and developed countries are searching for ways to be competitive. Traditional models of telecommunication operation, regulation, and policy development are increasingly being challenged.[42]

There is a widespread concern with national telecommunication monopolies that they may be unable to provide the increasing diversity of communication services necessary to meet the expanding variety of communication needs and demands . . . . Many countries, both developed and developing, are now in the process of redefining their national telecommunication policies and regulatory mechanisms.[43]

Post, Telephone and Telegraphs (PTTs), the institutions that historically have controlled tele-

communications services in many countries, are being restructured so that monopolistic privileges are replaced by a more competitive environment. Many countries have privatized (sold shares in), or will soon privatize, their government-owned PTTs—taking control out of the hands of government and replacing it with more private sector control. Since Britain privatized British Telecom in 1984, six countries have privatized their telecommunications systems (Japan, New Zealand, Malaysia, Argentina, Mexico, Chile) and several more are about to do so (Hungary, Singapore, Uruguay, South Korea, possibly Germany and Czechoslovakia). France has chosen an alternative to privatization, namely strong state intervention to encourage the adoption of new technologies and services. In 1991 France separated its telephone service (France Telecom) from the Ministry of Posts and Telecommunications (but did

---

[42]Ibid., p. 8.

[43]Ibid., p. 11.

not privatize it) so that it could become more competitive internationally.

In addition, many countries have liberalized their telecommunications markets and networks, allowing new equipment vendors and service providers to provide goods and services in addition to the traditional service provider (usually a PTT or equivalent). [44] Many countries, for example, are trying to encourage the development of private networks of all sorts. Because of the advances in radiocommunications technologies, and the lack of a highly developed public communications infrastructure, wireless communications is playing a very important part in this expansion of services.

The major effect of liberalization and privatization on the activities of the ITU is to increase the number of actors on the world stage and raise the level of private sector participation in international spectrum policy processes. Privatization of national industries may also have the effect of making those industries increasingly responsive to world trends, and more involved in international policymaking. Newly privatized companies have strong incentives to become actively involved in international policymaking to protect their interests and ensure that they can be competitive and efficient. This new activism may make them important players in international spectrum issues. The ITU and CITEL, for example, were once primarily intergovernment organizations. In recent years, however, with the rise of liberalized companies, the increasingly global scope of corporations and networks, and the plethora of new communications vendors, the private sector has been aggressively pursuing a more active role in the international policy process, including radiocommunications. Industry representatives want more of a say in international telecommunication policymaking and would like to see forums such as the ITU and CITEL serve as a common meeting ground for addressing government and nongovernment interests.

The ultimate extent and importance of these trends is uncertain, and the implications for U.S. policymaking are still unclear. Some believe that the effects of liberalization and privatization may be overstated. Even in countries that have been liberalized or had their industries privatized, governments often still retain strong control over the industry. These new companies and competitors do not have enough clout to significantly influence policy yet. In the future, however, as their power and prestige builds, they may become more influential both internally and internationally. They will add to the rapidly increasing and complex array of radiocommunications players discussed below.

Telecommunications and Economics

In international fora of all types, telecommunication issues are increasingly being linked to economic policy. Radiocommunications in particular is increasingly being recognized as an important force in its own right, as a major market and source of trade dollars. Sales of telecommunication products and services have increased dramatically over the last decade. Shipments of radio communications equipment are estimated at more than $55 billion annually and revenues from broadcasting and cellular services are estimated to exceed $30 billion annually. [45] As the globalization of society continues, the size and importance of these markets will increase dramatically. However, there are indications that the preeminent position of the United States may be slipping in a global environment marked by increasing competition in telecommunications markets. Between 1981 and 1987, the U.S. trade balance in telecommunications equipment went from a $817-million surplus to a $2.6-billion deficit. [46]

The trade implications of domestic and international telecommunications policy decisions, and the fact that telecommunications underlies a substantial portion of U.S. trade are becoming apparent. World markets for televisions, radios, and cellular phones are all large and all depend on spectrum. Spectrum decisions made internationally will critically affect how these markets develop and to what extent the U.S. can take advantage of them. Stakes are likely to be even higher in the future as the world moves toward an information economy, as radiocommunications systems become increasingly global, and as trade opportunities open abroad in response to liberalization and privatization.

[44] "The Changing Telecommunication Environment," Op. cit., footnote 1, p. 50.

[45] U.S. Department of Commerce, National Telecommunications and Information Administration, *U.S. Spectrum Management Policy: Agenda for the Future*, NTIA Special Publication 91-23 (Washington DC: U.S. Government Printing Office, February 1991), p. 13.

[46] U.S. Department of Commerce, National Telecommunications and Information Administration, *NTIA Telecom 2000*, NTIA Special Publication 88-21 (Washington, DC: U.S. Government Printing Office, October 1988), p. 41.

Telecommunications products and services are also increasingly recognized as a crucial component in maintaining economic competitiveness. Telecommunication serves industry in most countries as a basis for improving efficiency in global markets, and as a tool to enhance competitiveness by allowing instant communication among the many different locations of worldwide corporations, and between major firms, their suppliers, and their customers.

The connection between radiocommuncations in particular and competition is evident in the push to establish high-definition television systems and standards in both the United States and Europe in an attempt to head off Japanese hegemony in this potentially huge market for products and services. Many countries have recognized the link between radiocommunications and development and have begun to establish priorities and formulated policies in order to rapidly develop new radiocommunication technologies. Great Britain, for example, has taken the lead in PCS, by clearing frequencies in its television spectrum. Japan has tried to clear room for digital cellular. There has been a strong push to establish Standards for many new types of services including PCS, digital cellular, and next-generation mobile systems. Centralized administrations and policymaking (and a less diverse telecommunications industry) allow such decisions to be made quickly, an important advantage in light of the rapid pace of technology development. In the United States there is no national vision or plan, and no consensus on priorities for communication technologies and services.

Historically, the United States has wielded considerable influence in the international radiocommunication policy arena because the United States has been the world's largest market for advanced telecommunications products and services. The United States was able to make technical and economic decisions and force others to follow its lead. Today, the situation is shifting. With the rise of a consolidated Europe and the increasing regionalism among other areas of the world, notably the Pacific Rim, the United States soon will no longer be the largest telecommunications equipment and service market. In addition, the United States is a rapidly maturing market-many companies see larger growth opportunities in the developing countries, which have not yet reached U.S. levels of technological sophistication and saturation.

The result is that the United States is in danger of losing its market-based power and with it, some of the enormous influence this country has enjoyed in international radiocommunication policymaking. The Europeans, for example, have shown an increasing unwillingness to follow the U.S. lead in international spectrum policy. This is yet another reason why WARC-92 is so important. The new technologies and services to be considered at the WARC offer the United States an important opportunity to solid@ or even expand its leadership in many radiocommunication areas. Without the new services made available by the new radio-based technologies, the U.S. position as market leader could slip further, siphoning off business and innovation to countries with more flexible radiocommunication environments.

New *Players and Alliances*

International geopolitics are substantially different today than only a few years ago. The international radiocommunication policy environment of 1992 is characterized by a much more diverse array of participants, and new sets of allies. The forces of globalism, regionalism, and the new players created by the forces of privatization have created a situation in which alliances have shifted and many new actors have come to the fore.

Part of the problem facing the United States as it tries to influence international spectrum policy is that different nations use telecommunications in different ways and have different communications needs. Most nations do not use radiocommunications as extensively as the United States, and are not as advanced in their use of radiocommunications. It is easier for them to find room for and develop new technologies. Also, many countries cannot afford the latest technologies. Even if they see the benefits, it may be many years before such new technologies are actually introduced. These are but some of the dynamics operating as the United States tries to negotiate internationally for spectrum so that it may improve domestic services.

The conflicting needs of many countries have important implications for how countries develop positions for the WARC. Developed countries are making greater use of the spectrum resource as new technologies are developed and old services expand. Developing countries increasingly see telecommunications in general, and radiocommunications in particular, as a vital component in their economic and social development. Individual domestic con-

siderations are translated to the international level as spectrum managers and policymakers see spectrum allocation not only in the narrow technical terms of spectrum use, but also as part of the globalization of economics, trade, and international services.[47] W~C-92 is perceived as an important opportunity to open up new services not only domestically, but also internationally.

The wealth of new players and relationships represents both a major challenge and an important opportunity for the United States as it seeks to expand its telecommunications manufacturing and services industries and move into new markets. These pressures put increased impetus on the United States to be flexible and cooperative at WARC-92.

European Community and CEPT-As noted above, the European countries have formed strong regional telecommunication organizations, most notably CEPT. The 31 CEPT countries[48] have coordinated their WARC proposals, and are expected to have common positions that will be strictly adhered to by member countries at the conference. Such developments are likely to substantially strengthen the role of the European countries in WARC-92, and will make the process of preparing U.S. negotiating strategies more difficult.

The growing power of the European bloc will force a major reconsideration of who U.S. allies actually are for each issue. Many traditional European allies have banded together in a voting bloc that has grown increasingly stronger over time. Attendees at past conferences report that it is becoming increasingly difficult (and in many cases, impossible) to deal with individual countries in the "usual' manner. This loss of flexibility not only makes it harder for the United States to negotiate for support among individual countries, but also poses a serious threat in terms of the number of votes the EC and CEPT can now command. This is forcing the United States to look beyond its traditional allies and to forge new alliances with others. A strong, unified Europe has also led to strong interest in the United States to enhance the power and effectiveness of CITEL as a possible counter to expanding European power.

Developing Countries-The United States has already begun to reach out to the developing countries in the Western Hemisphere through the CITEL conferences, but government representatives also plan extensive trips to Africa and Asia to establish ties and build support in preparation for WARC-92. The United States may find that it has more in common with the developing countries than originally believed because of the nature of the technologies taking center stage at WARC-92. Many of the technologies to be discussed are new technologies that represent breakthroughs in ways to provide inexpensive and reliable data, voice, and in some cases, video, services. These types of wireless services, which do not depend on an extensive or developed infrastructure to work, may enable the developing countries to "leapfrog" generations of services, and obtain advanced services earlier than previously thought possible. It also provides an opportunity for the developing countries to improve their telecommunications infrastructure and services without building extensive (and expensive) terrestrial wireline systems.

The United States may have already found some new allies, especially among the countries of Africa. At the 1990 Administrative Council meeting, where the United States succeeded in adding many items it wanted to the WARC-92 agenda, the United States was largely supported by the Africans as well as many developing countries. The EC countries, on the other hand, may have lost some support, possibly due to the strength and inflexibility of their common positions. This state of affairs, however, may not carry over to the WARC itself, thus making it even more important for the United States to strengthen these ties in the months before the conference. Several trips are planned by U.S. government representatives to Africa and Asia to accomplish this goal.

The increased emphasis on courting (and counting) the developing countries, however, will not be easy and will come at increased cost. Specifically, more money will be needed for travel for U.S. representatives to make the contacts, establish the relationships, and do the initial negotiating that could help obtain positive outcomes at the 1992 conference. There are now more countries to talk to,

[47] The increasing importance of spectrum in economic considerations is also seen at the regional level in the increased emphasis put On the activities of regional bodies such as CITEL.

[48] With the expected addition of Albania later in 1991, there will be 32.

requiring travel farther a field than previously. Trips are being consolidated, but only so much can be accomplished on one trip. A lack of funds may mean that some important countries or issues do not get addressed.

Decline of the U.S.S.R. and the Realignment of Eastern Europe—Another substantial change from past WARCs is the much reduced influence and significance of the Soviet Union. The Soviets, long a major player in international radiocommunication circles, have lost much of their power and prestige. This will be the first WARC without them as a major force. Two primary trends have contributed to this loss of influence. First, the internal turmoil in the U.S.S.R. itself has made it difficult for the Soviets to prepare for WARC-92. They are expected to offer few changes in the allocations. Second, the disintegration of the Eastern bloc and the loss of Soviet control over its votes could radically change voting patterns, and will likely lead to a substantial loss of political (voting) power for the Soviet Union in the one-nation, one-vote forum of the ITU. The disintegration of the Eastern bloc has also added uncertainty in world telecommunications bodies regarding what role the newly freed Eastern European nations will play in international radiocommunications policymaking. These nations are shifting their alliances, particularly toward Western Europe, and many of them may join CEPT, adding to its voting power. However, the effects of their participation in WARC-92 are still uncertain.

Summary and Implications

Changes in the world telecommunication environment pose significant challenges for U.S. domestic and international spectrum policymaking and to the process of preparing for world radio conferences. Changing alliances, new geopolitical and economic realities, and the proposed changes in the structure and functions of the International Telecommunication Union will require the United States to reevaluate the preparation process for international conferences, and consider domestic spectrum policy in the larger context of international radiocommunication issues. Domestic spectrum policy will have to strategically link U.S. and international spectrum concerns.

Unless the United States responds quickly and effectively to these forces, it may find itself unable to successfully negotiate the challenges these changes present. U.S. approaches to international spectrum policymaking will have to flexibly adaptor domestic structures and processes for addressing international spectrum concerns may become outdated and less effective. The Federal Government, collaborating with the private sector, must develop new strategies for policymaking and negotiation to meet the demands of this new climate of change. Government spectrum policymakers recognize these challenges, but there is little consensus on what long-term strategies and goals the United States should pursue. The fragmented nature of the U.S. policy process hinders the development of unified policy and makes timely reaction to change difficult.

It remains to be seen how effective and successful the United States will be at WARC-92, but the current state of flux in world affairs presents the United States with a unique opportunity to influence the structures and procedures the world uses to set spectrum policy. In the longer term, for the United States to be most effective, the country must continue to take an active role in ITU activities and in future WARCs. Responding to the many changes taking place in the world will require flexibility and a commitment to well thought-out and carefully defined goals. Without such goals and a common vision on how the United States would like to see the ITU evolve, U.S. policy will continue to react to change rather than aggressively shaping it. Given rapid shifts in both technology and the international environment, without clear agreed-upon goals there is no way to ensure that the best interests of the United States will be met.