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THE POLITICAL ECONOMY OF TELECOMMUNICATION TRANSFER:
TRANSNATIONALIZING THE NEW PHILIPPINE INFORMATION ORDER

University of Hawaii

Ph.D. 1983

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THE POLITICAL ECONOMY OF TELECOMMUNICATION TRANSFER:
TRANSNATIONALIZING THE NEW PHILIPPINE
INFORMATION ORDER

A DISSERTATION SUBMITTED TO THE GRADUATE DIVISION OF THE
UNIVERSITY OF HAWAII IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEFENSE OF
DOCTOR OF PHILOSOPHY
IN POLITICAL SCIENCE
May 1983

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ACKNOWLEDGEMENTS

There are a great number of people to whom I owe special thanks for the time, patience, consideration and various other forms of support they have given for this study. Each of the dissertation members provided insights, arguments and direction that helped me to frame difficult questions. In addition, Bob Stauffer inspired me with encouragement to see it through and with his own productive work habits. To the East-West Communication Institute and particularly to Syed Rahim I am deeply grateful for the material support that allowed me to undertake the doctoral program, field study and the first stage of the writing. Deane Neubauer, Herb Schiller, Dallas Smythe, Bob Stauffer and Tapio Varis contributed valuable critiques to pre-publication portions of the study.

In the countries I visited as part of the research, there were countless people who in one way or another made available the necessary personal contacts and primary sources of information. The Institute of Philippine Culture and its director, Ricky Abad, provided affiliation status. The staff of the Third World Studies Program at the University of the Philippines, under its director Randy David, were generous in giving access to library materials as were Business Day (Manila), Sycip, Gorres & Velayo, the Asian Institute of Management, the Ateneo de Manila University and the University of the Philippines. I am specially indebted to the
personnel of the Philippines Security and Exchange Commission who helped me find much of the key data on corporate ownership and control.

The many Filipinos who took certain risks in uncovering sensitive and not easily obtainable documents deserve tribute for their spirit of friendship and resistance to the repressive order. Without such souls none of us would know what secrets the high-powered privatized sector keeps from the public. I also want to thank for their special kindnesses during the course of my research: Yowie and Mamoru Tsuda, the Rosales and Pargas families, Susan and Oscar Evangelista, Motoe and Richard Wada, Temay Padero, the Baraoidan family and Mang Regulo - who introduced me to the lives of squatters who have nothing to lose but their chains.

Along the way many other individuals gave shelter and sustenance to guide a pilgrim's progress: Iwan Abadi and family, Fely and Gerry Rixhon, the scientists at the Indian Space Research Organization, the Nair family, the Hansens, Patty Kaitz, Claire and Dave Sussman and the Ozawa family. Gunder Frank and Rita Cruise O'Brien helped make my life in England both homey and intellectually stimulating.

Most dearly appreciated is the continuous optimism, support and involvement of Connie Ozawa who walked and talked the paces with me, provided labor at critical stages of this project and urged me to move it to completion.
ABSTRACT

The transformation of international communication through the development of high-speed, long distance data/voice/video transmission systems augurs profound changes in international relations, production and economic distribution. In recent years a number of scholars have begun documenting the global impact of hegemonic communication media, extending the parameters of domination ever wider into the periphery and even into the periphery of the periphery.

I have examined the transfer of telecommunication technology from the dominant transfer centers to one state which serves as a major outpost of foreign capitalist investment in east and southeast Asia: the Philippines. Based on extensive interviews and review of primary and secondary data in that country, this study attempts to (1) identify the Philippine ideological and technical rationale for the transfer model; (2) describe the functional and financial state of the communication system in the Philippines and its historical precedents; (3) establish who communicates-what-to whom-through what media; (4) discuss the role of external actors; and (5) analyze the social, economic and political consequences of telecommunication transfer.

The data support certain conclusions that may be placed within the Wallerstein "world capitalist system" approach. One of
the central arguments that Wallerstein makes is that over the course of the past 400 years, and the rise and fall of various capitalist powers, capitalism as a system has persevered and expanded into global enterprise. And that despite serious antagonisms within it, i.e., socialism, the system continues to dominate international factors of production, supersede national boundaries and move toward the integration of separate capitalist subsystems against traditional core and periphery nation state prerogatives. Swept into its all-consuming vortex, the nation state prospers to the extent that it is able to establish a niche within the international division of labor and production.

The world's largest telecommunication corporations - largely representing the U.S., Japan, the Federal Republic of Germany and the U.K. - have introduced "leading edge" technology to the Philippines and provided the conduit for other transnational corporations (largely U.S. and Japanese) to extract value and exchange from new investment areas, particularly in the export processing zones. Domestic economic elites intimately associated with President Marcos have shared in the largesse but have heavily committed the state to repaying rapidly rising foreign and internal debts while defending the growth model. The financial as well as cultural/ideological aspects of Marcos' communication order raise important questions concerning international communications and its relationships to the role of the state, the preservation of national sovereignty and the improvement of social welfare.
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CHAPTER ONE

INTRODUCTION

"All the world's a stage...."

We find ourselves at an historic juncture in which technology has come to play not only a central role in our system of producing and reproducing but also in our ways of interacting and communicating. Resocialization through technology is to be sure not as universal a phenomenon as many would prefer to believe, but it certainly extends to many regions of the world once remotest from its grasp or influence. Moreover, the ideological packaging of "high technology," that is to say electronic computer based instruments of labor and leisure, have been laden with an overpowering inducement toward the acceptance of its necessity, inevitability and progress. That a relatively wide audience of users have already been found, however, says little by itself of the nature of participation in the selection of social applications of technology.

The rapid developments in the social extension of technology have cut across continents to various centers of world power and to
the hinterlands where the absence of paved roads or steel bridges poses no obstruction to the voices and messages of faraway places. Contemplation of its characteristics, of its social, political, economic, cultural consequences are profound tasks faced by critical scholars today and what has been more profound is the general silence of effort toward this knowledge. Yet hardly anyone would deny that electronic computer based technology is restructuring the ways in which people converse - with their leaders, with one another, with their tools, with themselves.

This study is set in a country, the Philippines, geographically remote from the headquarters of communication technology, finance, invention, production and expansion. It is a country that is nonetheless firmly part of the global technology production and distribution concession. An outgrowth of capitalist penetration within the bounds of its respective leading state representatives, the move toward high technology has allowed the owners, the controllers, the ideologues of its base of power to transfer and to help transfer the centers of production beyond their own borders. The extension of human communication transcending what erstwhile would have been considered beyond one's ken has been appropriated at the highest levels by supranational production and financial institutions that wield sufficient communicative capabilities to allow them to govern most of the habits of life in the west and much of the "modern" ways of eastern metropolitan production subcenters.
Long distance communications, telecommunications, to be sure has brought about a certain amount of diversity and newfound interest in the possibilities of producing, playing and conversing that without doubt have allowed many to at least imagine what a relatively toil-free technological existence people could have. And although the elites of peripheral social formations, including those of suburban Manila, have a stake in this dream and share in some its bounty - from home sound systems to office computers to access to some of its technical secrets - they do not necessarily have great influence over its disposal. Yet the bulk of literature on "development," the core body of legitimation for world capitalist penetration into their domains, has little to say about the structure and system of power from which technology-based solutions are expected to emanate. Few studies have come forward to explain from a peripheral dependent perspective how the communication beachhead relates to its genuine social and political economic developments.

This question has guided the curiosity and research in this study. It is a study directed toward the task of casting political questions about telecommunications in a specific third world context. The anthropological relevance of this concern is great and immediate, however this study focuses primarily on the structural aspects by which telecommunication transfer to the Philippines has come about and whom it serves. It looks at recent economic adjustments at the participatory level of the Philippine state and
its local bourgeoisie and their interaction with transnational
corporate actors. The understanding of meaning in the recent debate
on dominant and dependent inter-national relationships is discussed
in Chapter 2. But we wish to emphasize that while this debate
offers much insight and frames many of the structural assumptions
here, very little of it has gone beyond the question of how much
capital is being transferred, to whether the third world is being
liberated by the form of capital transfer that occurs within a
preeminently dependent arrangement. This study focuses on the
participatory aspect of telecommunication transfer, what role its
leading actors perform in helping to shape the long-range
determinants of capital accumulation and ideological hegemony.

When we refer to transnational (or multinational)
corporations, we are thinking of those business enterprises with
large assets and sales deriving extensively from off-shore
operations, TNCs (or MNCs) that are widely recognized as such. The
principal TNC actors in the Philippine telecommunication sector are
familiar names: ITT, RCA, Siemens, GTE, Nippon Electric, and Cable &
Wireless. They were all among the largest international industrial
and telecommunication corporations within the temporal framework of
this study (1979 to 1980), and although the national leadership
identities have changed somewhat, their collective role in laying
down and putting up the infrastructural circuits for intercorporate
information transfer has remained. These information transfers
relate to needs of a select group of communicators which we intend
to document and discuss with respect to the special social significance thereof.

It is impossible to conceive of one component of communication technology such as satellites without relating it functionally to other technology aspects - telex equipment, teletype machines, mainframe computers, television broadcasting, etc. Do these individual units of usage operate randomly or do they functionally relate to a larger system of communication? If the latter, does their consolidation have meaning beyond technical-functional compatibility? Inasmuch as technology includes a method of incorporating ideas and commodifying or capitalizing them, we assume that such ideas operate not only within pristine laboratories but also in a larger social context full of conflict and synthesis. For this reason the interface of communication technology (the means to communicate) with society eminently involves political concerns, namely, who uses what instruments toward what ideals? How does a particular technological artifact become infused with purpose? How are such purposes articulated and appropriated?

There are many national histories of how communication technology came to its prominence as part of the international system of capitalist exchange. The Philippines, having arisen as a state legacy of American colonialism, has a special relationship to the U.S. in its technological/scientific orientation as much as it has in other worldly outlooks. For this reason the Philippines has come to have a rather unique symbolic as well as material role to
perform within the east Asian region and has, in fact, become one of two competing communication throughways in the area, the other being Hong Kong, a British colonial legacy.

The Philippines has long been an important entrepot for U.S. trade and investment in the region, which is discussed further in Chapter 3. The relatively early movement toward "self-rule" after U.S. annexation brought forward skilled government, bureaucratic and technical elites readily receptive to technological and commodity transfers from the "mother country." And U.S. expatriates fully took advantage of Philippine "free trade" regulations that were legislated after 1909. Eventually, Filipinos gained a share in the communication enterprises established — some radio and print media by the 1930s, television in the post-World War II period. The communication media such as Manila's TV stations and the Manila Daily Bulletin (which survived up to martial law with the same masthead; cf. Bulletin Today) were originally founded by Americans, later taken over by elite ilustrados. In all of the communication media the American commercial and stylistic imprint was indelible, and the Philippines remains the only large country besides the U.S. to have a virtually fully privately-owned telecommunication network.

The social significance of this is reserved for discussion in Chapter 6 and the concluding Chapter 7. We should note here, however, that aside from the directly commercial applications (virtually no public participation or applications exist), there is an important security task which telecommunications technology has
been designed to serve. This also is discussed in the last two chapters in which we consider its historical and dialectical ties of production to the official rationale for security. What is specially obvious is that the same TNCs that deliver the telecommunication technology also deliver the message. They are, as it were, the medium, the messenger and the monopoly.

The catchword that Philippine and foreign "development" oriented agencies like the Ministry of Communications and Transportation and the World Bank employ to describe the general form of telecommunications envisioned for the third world is "integration." While "integration" was undoubtedly selected for its highly positive associations, there is much more to the term as it relates to the political economic context in which it is becoming reified and which is not being discussed in their literature nor apparently debated in their inner chambers. Yet "integration" has brought together within the region a number of state systems with telecommunication networks that trace the same historical paths traversed by the colonial powers. Intra-capitalist cooperation has resulted in terrestrial, extraterrestrial and submarine information routes developed to service some clientele and not others, a dynamic that clearly needs to be discussed. We seek then to explore the communication integration process together with the meta-integration process as a way of shedding light on some of the hidden issues of dependency and development.
The notion of integration is replete with manifold connotations, historical and symbolic. The symbolic dimension has continually been challenged, even by third world leaders who rose under its protection. It is because they have come to identify with its proffered gratifications, however, that on the whole governments in southeast Asia have fully cooperated with external efforts to extend the model on a transnational basis and to transnationalize the third world information order. Historically, this has evolved through the integration on the level of world production, a theme applied by Wallerstein and others, and further discussed later.

The transformation of the Philippine information order can be traced to political economic and technological developments in the post-War U.S. where the "communication revolution" got its impetus. The American "mass" media have always been associated with the private appropriation of talent and only relatively recently have even modest demands for public media been voiced and marginally implemented. Out of this strong "free-enterprise" trademark on every communication science commodity since Edison's light experiments, the corporate capitalist sector has been able to control the social relations and outcomes of its productive capabilities. A communication satellite debate in the U.S. Senate in the early 1960s resulted in TNCs - ATT, RCA, Western Union and ITT - getting controlling interest of the corporation created for the international satellite information delivery, Comsat. The Philippines signed up as one of the earliest members of the
international satellite consortium, Intelsat, but with negligible voting power. The historical circumstances of its joining are discussed in Chapter 3.

There have been several developments among the telecommunication TNCs that represent adjustments to the world expansion of production, slowed but not stalled during the world recession starting in the mid-1970s. The new markets in international communication pushed the TNCs, recently joined by the Europeans and Japanese, into a more competitive surge for third world markets, particularly in Asia, the Middle East and parts of Latin America. In southeast Asia, Indonesia took the lead in having its own domestic communication satellite, "Palapa," put up largely through contracts with U.S. TNCs, the biggest going to Hughes Aircraft, Philco-Ford, ITT and Harris corporations. The regional, ostensibly social and economic, framework of ASEAN, established as an outgrowth of earlier anti-communist formations, came under the Indonesian satellite's "foot print," with commercial as well as military applications. Palapa operates under specific guidelines laid down by Intelsat including the latter's restrictions on regional usage and the right of transmission preemption. India has moved ahead with its own domestic communication satellite program and the south Korea and Thailand governments have also expressed interest in satellite technology transfer. Submarine cable and microwave systems within the ASEAN region have been broadened with 24 separate interconnections established between ASEAN and other states since 1975.
At the same time, and as part of the rationale for a wider telecommunication delivery system, there has been an expansion of "off-shore units" of TNC banking and finance, air transport, hotels, shipping and manufacturing, all of which form an exclusive class of users that from a capitalist perspective justifies the profit realization plans for telecommunication investment. Some of the direct financial costs of these investments to the Philippines are discussed in Chapter 3, the social consequences of the primacy of certain transfer values in Chapter 6. The assumption stressed here is the relationship of social organization to the technological foundations of a society and of technology, in turn, to a prevailing material and social context in which, for example, the computer is viewed as being imbedded with value - cumulative and cultural (ideological).

The value of commercial telex, data transmission, international broadcasting and advertising, and the whole separate set of military communications thus establishes the framework for material (commodity, finance, "hardware") as well as cultural assimilation on a global scale and the organization of police power necessary to deter its overthrow. (In the Philippines the Manila police, "Metrocom," is already integrated as a unit of the Philippine Constabulary, the national militia.) We see this pattern of commercial and military telecommunication transfers replicated in the Middle East, particularly Saudi Arabia, previously in Iran, in Brazil, in Taiwan, and even China, and wherever else clients may
arise, within the jurisdiction of U.S. government security clearances.

The movement from mechanical and transistor based electronics to "chip technology" vastly increases the capacity for storing information in small, lightweight spaces, intended for bulk transmission and retrieval at or approaching the speed of light, i.e. instantaneously. It is a technology that already has transformed the ways in which offices, factories and other working environments are designed, and will continue to offer possibilities for more streamlined, "efficient" production routines, potentially relieving much of the drudgery of the employed. But it is not simply the question of technique that needs to be asked, which, unfortunately, preoccupies most uncritical social scientists, but also of social relations and the social organization of access and other perquisites.

The more concentrated these sources of resource allocation and political and social agenda setting, the less likely, almost by definition, is the public domain entitled to participate in science and technology use values. And the more the peripheral formations surrender their claims toward independent policy making, the less likely are their leaders going to indigenize capital to satisfy internal needs and demands. On the other hand, the ability and commitment to organize a relatively independent branch of science and technology, restrained as that may be by the exigencies of international trade, would suggest a society committed to pursuing
self-determination in its national and regional culture and politics while maintaining a critical distance from big power communities. India comes to mind as one country with advanced science and technology capabilities and with much of its telecommunications needs, including the "Insat" domestic satellite earth stations and antennae, manufactured at home, though by no means is it fully self-reliant in these areas nor in the larger concerns of managing its economy.

In the following chapters we will pursue these questions as they relate to the Philippines. Weaned under a colonial tutelage for more than 400 years, the Philippines finds itself at a critical juncture. Reeling under the crisis of world capitalism, its own internal misdirections and revolutionary challenges in the countryside, the transformation of society that Marcos has encouraged seems to lean heavily on an overly optimistic assessment that anticipates rapid industrialization and "modernization." Telecommunication inputs in the Philippines represent a major investment and an important barometer of the continuing viability of an important third world ally and of the world capitalist technology transfer model.
CHAPTER TWO

THEORETICAL AND METHODOLOGICAL CONSIDERATIONS

Theoretical constructions accompanying the emergence of a new technological order are only beginning to develop. Until the late 1960s, under a confident and powerful liberal-welfare state leadership, the United States was still unchallenged as the dominant actor in the capitalist world system. The defeat of the U.S. in Indochina, coinciding with the downturn of its economy and the full reconstruction of western Europe and Japan, began to challenge that hegemony and return the capitalist alliance into a condition of more competitive national antagonisms. This condition has led to a more genuinely internationalized infrastructure, a world order, within which our interest in telecommunications has been framed.

In focusing on the new technological foundations that have rapidly been shaping that order, we hope to develop a case study that will contribute to an understanding of the material foundations of social change - in this study, within the third world context. Thus far the social sciences have not yet adopted to any great extent this perspective. In fact, the revival of a hostile cold war environment, now armed with unlimited weapons for "mutually assured
destruction," has helped to foster an academic climate of repression and intimidation\(^1\) that is increasingly antagonistic towards critical research.

As a study of third world communication infrastructure we wish to discuss the central role of the transnational corporation (TNC) in helping to disseminate the instruments that create the means of what Habermas calls "communicative competence." We are deeply intrigued by the rules of discourse that flow from the animate and inanimate sources of conversation and that interest language philosophers such as Austin, Connolly and Wittgenstein among others.\(^2\) The analysis of immediate context and value is equally important to the task of understanding political reality. However, the formal interest of this limited study is concerned more directly with the broader political economic structures that govern communicative interchange.

In adopting this framework we hope to raise the discussion toward a fuller integration of telecommunications - itself a product of social as much as natural science - and politics. We also hope to show why a better understanding of their relationship is profoundly relevant and inseparable from the personal communication reference of Habermas and others.\(^3\) It has become increasingly apparent that communication technology in the capitalist industrialized states, already permeated by highly structured, centralized and elitist institutional media, has successfully imposed itself extensively within the periphery of the Center states
(as per Galtung\textsuperscript{4}), all the way to the farthest outposts of the world Periphery.

It is a point of departure of this study that the more mediated, hence refracted and instrumental, experiences occupy particular categorical modes of human reality (that are distinct from the interpretive framework of most rustic kinship groupings, for example), and that the mode of mediation and mode of material production in a given society are linked dialectically to common historical phenomena. Logical positivist empiricism is biased as an approach in its dogmatically radical assertion of value-free interaction, based on technical rules of analysis, between the "scientific" observer and the object of her/his interest, largely ignoring the material and social context that intervenes for the actors and "witness" of human events. Hence, the wholesale employment in the logical positivist empiricism tradition of terms that are superficially passed off as uncontroversial, such as "utility," "efficiency," "development," etc., which are loaded with unspecified meanings, and thereby disguising activity that is self-serving, class-biased and often ethnocentric.\textsuperscript{5}

A note on epistemology is in order. In brief, we operate under certain critical evaluative understandings which include the observation that the logical positivists adopt certain communicative arrangements - choosing problems and analytical paths - that suit their own conscious and unconscious value framework(s) and do so as if such a method were definitive, value-neutral and uncontestable as
defined by proper test (technical) procedures. This orientation leads to a subjective-objective dichotomy among relationships that, among other things, ignores much of the ambiguous nature of so-called "independent variables."

Critical theorists appreciate the world of science, the natural world, but insist that understanding is inherently subjective and contentious. The truth claims made by logical positivist empiricism based on the notion of neutral observation and the (dominant) scientific mandate for its methodology, is for critical theorists a matter of false consciousness. Much of what passes for "fact" is actually imbedded with an evaluative context, defined by all the affective nuances of the observer. One who critiques positivist assumptions, expressing it in an understated tone, insists that

[D]espite the wide and sometimes sharp disagreement among contemporary philosophers about the nature and role of theory in the sciences, there is a rational consensus that it does not simply consist of empirical generalizations based on the collection or observation of facts.

A more explicitly marxian approach moves from this understanding to the questioning of the role of "science" itself, that is, what constitutes the historical reification of capitalist science in the form of research and development toward which the major part of scientific enterprise is currently devoted. Two British scholars and natural scientists have argued that the
dichotomy of natural and social science is falsely upheld by established institutions to help legitimize its base of power, when in reality most scientific research has become absorbed into the production of private profit for its corporate benefactors. Ideologically, this purpose is legitimized on the rationale that "science furnishes a model of growth based on production as an end in itself."  

Alvin Gouldner also sees the technological order directly interwoven into the everyday discourse of 'marketplace choices,' both shaping and being shaped by the social and economic ideology of the 'consumer society.' It is an order administered under an ideology highly manipulative in its cultivated technique, he argues, that fundamentally distorts the grounds of speech intercourse. And it is largely through controlled media that the ideology is constituted, creating the bits and interpretations of events that define issues, focus 'public' attention, determine relevance and enlarge the idea of 'cosmopolitanism.'

Gouldner is explicit about what he means by the context defining speech situations, looking at the political economy underlying the dominant code of communication, and adopting, what he calls, a "critical marxist" perspective. He argues that under capitalism, the manufacture of ideas and values is central to the perpetuation of class domination:

The solidarity of the dominant classes, and the ruling class' influence with the political and
administrative classes, is now contingent on and mediated by the ideologies to which they subscribe. Ideology thus assumes a new historical role in the maintenance of social solidarities and class control.\[^1\] (Emphasis original.)

A vital element of class ideological manipulation is the technology that embodies its social relations. Gouldner, like Marcuse, emphasizes the repressive aspect of technology which he sees as a key instrument for blocking the formation of new ideologies. He sees a "mass" ideology that modern technology has been designed to serve, with obedient mass conduct cultivated toward the association of technology with the "experience of gratifications."\[^2\] The issue that Gouldner, as a critical marxian (or marxist), is raising has been and is divisive within the radical tradition in its generalized attack on commodity culture. Regardless, it is an evaluative predilection we see as more directly relevant to the core industrial countries than to the third world peripheral formations where common western material culture is generally associated with the status of relieved poverty and not simply "gratification."

A major objective of this study is to investigate, empirically and analytically within a descriptive framework, the international formation of value as material and ideological exchange. In studying the nature of value exchange, we draw from the critical epistemological tradition as well as from the perspective of structuralism as applied to peripheral contexts, a focus, according to Samir Amin, lacking in western classical
The status of the peripheral state, as Amin sees it, is "primarily the expression of a local hegemonic alliance linked to the imperialist alliance." Integrationist attempts by core capitalist states to absorb the productive capacity of third world labor has been met by the increasing tension between transnational capital and the local ruling class on one hand and on the other by the increasingly marginalized urban and rural proletariat. Amin interprets this development of increasing intervention of international capital into the periphery as a way of utilizing the structure of the local state apparatus essentially "to coordinate monopolies' activities and to support them." Amin tends to share Wallerstein's view of "world capitalism" as the starting point of political economic analysis.

In his analysis, Wallerstein, who has conducted third world research in Africa, sees the periphery as historically having been a primary source for the expansion of the world economy which emerged as capitalist in the sixteenth century in Europe and extended to broader peripheries during the era of colonialism, opening up more intensively to capitalist production after the industrial revolution. Wallerstein projects a late twentieth century reorganization of peripheral production based on a complete proletarianization of world labor which will mark the full maturation of capitalism and integration of the third world into its international division of labor.
Wallerstein's approach is so sweeping that it is hard to pick out specific disagreements with his framework. The case study approach we pursue here accepts his general premise of looking at the world economy as the unit of comparative analysis. It is clear that other scholars, including Amin, Arrighi and Frank, are adopting much of the Wallerstein framework, although certain dependency writers like Peter Evans put more emphasis on the role of the state. Evans' impressive study on Brazil focuses on what he himself classifies as a "semi-peripheral" economy, acknowledging Wallerstein's designation for the few former peripheral states that have moved toward a more incorporated "buffer" position between the capitalist centers and the periphery.

The Philippines, however, is not one of those states classified as "semi-periphery," as much as the U.S. has attempted to assist it as a "showcase of democracy." We wish to illustrate what its status as a peripheral area has meant to the world economy through its role as a communications sub-center of the transnationalized east and southeast Asian region, and we analyze the social costs and consequences of these choices. Evans' emphasis on state participation in Brazil has some application in the case of the Philippines, but we contend that the relative isolation of the latter has brought a more integrative dominion of western capitalism into its state sector while coopting the local bourgeoisie through advanced technology-based joint venture arrangements with TNCs.
Dependency Theory

The most dynamic political economic literature on the world economy to emerge in the past two decades has been called "dependency theory." This refers to a perspective on "development" taken by a spectrum of political economists from the point of view of the formerly colonized areas, largely focused on Latin America. Though not actually one consistent theory, "dependency theory" covers a group of anti-imperialist writers, marxian and non-marxian, who view bilateral economic relationships between advanced capitalist states, principally the U.S., and the former colonies as built upon asymmetrical, inequitable growth patterns with implications for stagnation or restrained development in the latter (in trade, local investment, national budget accounting, capital accumulation, etc.) as a consequence of domination by the former.

Among dependency writers there is a broad array of thinking on these assumptions, ranging from Cardoso and Warren who see various possibilities for growth of the periphery in association with the metropolitan economies to Frank and others who consider the relationship as inherently parasitic: as the metropolis grows, the periphery pays the costs. A key contention between Frank and Cardoso rests on the degree of capital accumulation taking place in the periphery, Frank arguing that local capital is being taken over by foreigners, Cardoso insisting that significant national local takeovers of internal productive resources have in recent years occurred. 17
Brazil perhaps has been one of the major exceptions to Frank's arguments. Cardoso demonstrates from an aggregate data base that despite heavy foreign investment Brazil has experienced growth at the level of capital accumulation. He argues that it matters little whether industrial firms are owned by foreigners, foreign subsidiaries or by Brazilians in association with foreign firms, because in any case it is international markets, international investments, and international decision-making structures that determine economic growth phenomena. What Cardoso sees as relevant is that foreign investment has moved out of the raw materials and agricultural sectors and into the industrial sector. However, he is speaking primarily for Brazil here because clearly U.S. oil company investments in OPEC countries and investments in Angolan diamonds and Chilean copper or even basic assembly line manufacturing still constitute the more common types of economic ventures.

Giovanni Arrighi has pointed out that it is less significant that technology has come to tropical Africa than the fact that it is inappropriate technology which, he says, is widening the dependency relationship - with consequences for the size of the labor force, the internal market and the emphasis on capital intensity and consumption over local production. The growth of the capital goods sector, Arrighi argues, can never be autonomous within the TNC framework because accelerated foreign investment increases the dependence on foreign sources for new capital requirements.
It is also argued by Arrighi that the domination of international capitalism will make it increasingly difficult for third world national bourgeoisie to create their own pockets of growth independent of TNCs; thus the national bourgeois path is precluded. Although wages in capital intensive industries tend to rise, employment does not. The bias against the local capital goods sector blocks reinvestment of large surplus, thereby forcing the host country to use its foreign exchange earnings derived from export of primary products to buy capital goods abroad. In contrast to Brazil with its large (now about 120 million people) internal market and history of autonomous growth stemming back to the earlier part of the century, most of the third world lacks the internal leverage to demand reinvestment of TNC surplus. Few states fit Brazil's example as an historic "growth area," and, therefore, autonomous accumulation would seem to be for most countries of even greater urgency.19

Moreover, as Peter Evans emphasizes elsewhere, the benefits of the "economic miracle" of Brazil, with the vast majority of people falling below the GNP per capita of $400, have been largely bestowed on the few and the human costs very high. Literacy is low (60 percent) even by Latin American standards; the concentration of internal investment has been directed away from rural areas, which need it most, to the industrial center; 80 percent of the population live at a subsistence level, among the lowest on the continent, with real wages decreasing; an extremely high infant mortality rate still
exists (double that of Cuba, Mexico or Argentina); intense military repression with censorship, imprisonment of writers, intellectuals, labor leaders and opposition legislators and widespread use of torture accompanied the rapid growth phase of the 1970s; and 5 percent of the population holds 40 percent of the total national income.\textsuperscript{20}

Friedman and Wayne have argued that much of dependency theory rests on assumptions about exchange (distribution) relations between countries but neglects production (class) relations within the peripheral formations, particularly the work of Frank and Wallerstein whom they see as overly concerned with "spatial relationships" (e.g. nation vs. nation, city vs. hinterland, etc.) of capitalist inequality rather than the careful "examination of structural social relationships."\textsuperscript{21} This, they argue, fails to give sufficient attention to third world internal dynamics and raises a number of confusing issues: Is the continued expansion of world capitalism imminent? Is third world capitalism a progressive stage as a mode for forcing the contradictions within world capitalism to a climactic confrontation? Or does it lead under the right conditions, as Cardoso suggests, to an improved climate for development \textit{and} dependency?\textsuperscript{22}

Andre Gunder Frank in a more recent work acknowledges the critique of Arrighi who, like Friedmann and Wayne, faults Frank for ignoring the internal class conflicts of specific third world conditions in pursuit of generalizations about metropolitan
imperialism. Frank cites as self-reproachment the 1937 commentary of Mao Zedong in the well-known essay, "On Contradictions," that argues that it is "internal contradictions in society, that is, the contradiction between the productive forces and the relations of production...that pushes society forward and gives the impetus for the supersession of the old society by the new." In our study which deals more with the specificity of dependency relationships engendered in infrastructural changes wrought by telecommunications technology, we cannot hope to fully resolve these general arguments in a national let alone global setting. But these concerns, particularly those relating to "internal contradictions," impel us to inquire into the nature of the Philippine relationship with its "developers" by asking whether foreign investment, in an infrastructural area critical to the expansion of world capitalism and in an investment area the World Bank has listed as a "country of concentration," is leading to enhanced state autonomy, to increased "associated dependent" or local ("national bourgeoisie") accumulation or to improved participatory and welfare standards for the Filipino people. Hopefully, the empirical evidence, drawn largely from Philippine and Filipino sources, can help to explain contradictions of dominant-dependent linkages from the perspective of the country and people most directly affected.
Role of the State

Important to an understanding of the dependency relationship is the peculiar role of the peripheral state apparatus. It is quite evident that the expansion of TNC investment has brought a concomitant growth in host state functions, but whether the development of state investment (capitalism) implies the status of "autonomy" deserves careful investigation beyond purely economistic considerations. The evidence for "autonomy" would seem to derive not only from expansion of public investment in the industrial sector but, more importantly, from what actual division of political power these decisions are being made. The question is, autonomous from what and for whom?

It is also relevant to consider whether the formal constitution of a "nation state" in fact represents the interests of that "state" or whether it actually represents a fiction reproduced in order to protect the legitimacy of one group's monopoly over the instruments of coercion. Where categories such as TNC, national bourgeoisie and state may be appropriate in the case of a relatively powerful economic and historically independent unit as Brazil, the arguments for such a formalized sectoral analysis may be exaggerated in social formations where externally-induced expansion of the local political economic base is its dominant characteristic, namely in most peripheral states, even where state capitalism has emerged, as it has to a minor degree in the Philippines. The state's
autonomy is circumscribed by its active participation in the international division of labor which is undertaken as a project of the international bourgeoisie in its drive and capacity for global industrial expansion. Discussing the role of the peripheral state Petras has argued that

State-capitalist oriented social strata lack an independent socio-economic base of any importance. Whatever "property" they own is incidental to their political and social power. Their key weapon is political capacity: their ability to take hold of the state machinery, alter the distribution of social power, and reorganize economy.26

The long term implication for dependent status would then be that

At the same time as national capital has become incorporated into the imperial system, it has lost the basis for internally directed development projects; the greater the external ties, the less likelihood that "nationalist" revolutions will be organized and promoted by the national private bourgeoisie.27

The growth of peripheral state functions is not to be denied but whether this expanded role suggests "autonomy" is controversial. Clearly, the state serves to establish or attempts to establish a local technostructure, a police and military system, an ideological-propaganda apparatus and, to the extent possible, "national" accumulation. These state functions are inter-related as part of the regime's efforts to maintain itself and to appropriate a greater share of production. However, this is not the determining
factor; the political economic model of development to which it attaches itself is. The dependent state is therefore looked upon as a partner of those "internal" groups which accept incorporation as the development model (the police and military, the comprador bourgeoisie, the technocrats, the politico-ideologues). But it is the external development agents themselves who constitute the dominant actors, the main crucible of the national economy and the supraordinate-subordinate structure of international production and to whose program "internal" actors must ultimately defer. To the extent that the local state-bourgeoisie-military/police-ideological apparatus succeeds in the project of incorporation, their representatives are de-nationalized and elevated to sub-altern status within the international bourgeoisie. Ironically, their success betrays them as coopted while their failures allow them options for reclaiming "nationalist" credentials.

In the Philippines the business and military elites have historically been identified by attributes of power closely associated with western capitalism. U.S. penetration of the Philippine economy since the 19th century has been actively encouraged and sustained by those who have benefitted from it on both sides of the Pacific. Throughout the 1960s a few nationalist voices among the Filipino political elite called for altering such "special relations," but the majority who benefitted materially, psychologically (through identification with the West or fear of communism) or socially (through status rewards, career and
educational preparation) defended the alliance. The pattern of recruitment to high government and technocrat positions under the martial law government was not essentially altered from this strongly pro-western external bearing, although the weakening of the U.S. economy beginning in the early 1970s put new strains on bilateral dependency leading to a wider opening of economic ties to Japan, western Europe and, to a lesser extent, the U.S.S.R., China and the ASEAN countries.

While U.S. domination may have relatively decreased somewhat in the Philippines, international capitalist hegemony has been strengthened. As expressed by Robert Stauffer, this hegemony has taken on structural features in which

> corporatist tendencies . . . have been associated with a more complete integration . . . into the world market system, greater penetration into the economy by transnational corporations and a variety of multilateral banking consortia, 'advisory' groups, national and multinational funding agencies, etc., than at any time in Philippine history.

Hegemony is also apparent from the rise in the ratio of foreign investment/local investment under martial law as well as in the conspicuous construction of hotels, condominiums, shopping malls, casinos and other showcase attractions for foreigners, widely known as the regime's "edifice complex." And despite some initial attempts by the state to construct protectionist policies, the more recent trend has been toward a World Bank-instigated lowering of
barriers to allow more "competitive" foreign investment while the state has stepped in by default to bail out several large local automobile, construction, mining, etc., enterprises having major foreign contracts. The government has had to respond to a private sector slowdown with heavy public sector lending to keep the transnationalized economy from collapsing but creating in the process huge government deficits, expanded sevenfold in 1981 over 1980, heavy external debts and tighter linkages to external investors and planners. According to one business publication analyst, "In broad terms the World Bank, I.M.F. and Philippine government policies are meshed in tackling severe problems which have both internal and external causes."33

The internationalization of capital has also opened Philippine government leadership to wider opportunities for personal enrichment, starting with the extended families of Marcos and his wife and flowing to palace favorites who move between official and private business portfolios with such fluidity that it becomes difficult to identify any but a few rare examples of genuine career technocrats. Even among the latter one finds their elite class socialization and family fortunes so neatly interwoven with monopoly capital and metropolitan cultural linkages (including local creolized reproductions) that objectively, they can usually, though sometimes defiantly, be expected to articulate international standards and material aspirations. If the contemporary peripheral bourgeoisie appear to be relatively autonomous, it is, as Samir Amin
says, because "it was imposed by the national liberation movements when the peripheral bourgeoisies won from imperialism the right to industrialize." However, he adds, "The peripheral bourgeoisie ceased to be national and became the junior partner of imperialism by integrating itself into the new division of labor." 34 Far from being "autonomous," then, the state functions not exclusively but primarily as a local instrument of incorporation within the international division of labor and production.

Technological-Industrial Dependency

The rise of the U.S. as a post-War power and the full reconstruction of the pre-War industrial powers brought new conditions for allying the peripheral bourgeois state to the metropolitan centers, tying it to a new form of dependence - technological-industrial dependence. 35 Dos Santos accepts possibilities for certain "positive" effects from such a relationship and allows that under some conditions the dependent state can expand - however, "only as a reflection of the dominant state's expansion." Technological-industrial dependence which binds the peripheral and "semi-peripheral" economies to the centers, primarily the U.S., forces the former to build up their own export sector, preserves the static aspect of production and relations of production, and creates instability in their balance of payments
leading to deficit and indebtedness (e.g., an official Philippine
debt-service ratio in 1982 projected near 30 percent36). The
exercise of technological monopoly by the core states supports the
transfer of new capital in the form of TNC investments with
escalating repatriation of profit to foreign bases while employing
numerous fiscal and monetary sleights of hand to mask the degree of
foreign appropriation. Dos Santos, Muller and others see the
pattern as generating more dependence and more exploitation, leading
to greater polarization and ultimately to violent political and
military confrontations. 37

The particular class of technology that interests us here is
telecommunications. It is important to understand the relevance and
nature of this advanced industrial technology to appreciate its
specific significance to the dominant development model which it
serves. In this and the following chapters we will try to show
empirically and analytically the character of communications
technology in the Philippines by investigating the following
concerns:

(i) The model of development;
(ii) Who owns, operates and controls the
communications infrastructure;
(iii) Who are the primary users of the
infrastructure;
(iv) The role of national and international
institutions in supporting this
infrastructure; and
The effects of communications technology on the majority of the Filipino people in terms of:
(a) scientific/technological sovereignty,
(b) the transformation of production, i.e., labor and the labor process, and
(c) political participatory interests.

This is not an inclusive agenda for such an investigation but one that does address questions not generally central to the more positivist modes of inquiry, the literature of which tends to concern itself with the technical rationalization of capital transfer. Central to our analysis is the role of the transnational industrial and finance institutions that participate in bringing advanced scientific equipment to third world production settings. It is necessary to recognize the inter-relatedness of these questions in order to capture some vision of the general socio-economic construct with which it is in harmony. This means to say that communication technology acts instrumentally to perform certain roles, designed and assigned to it, which are generally compatible with the overall system of production and distribution.

Here we draw from the marxian tradition that proposes that the nature of production together with new modes of communication and transportation constitute qualitative change in the technological and material base of the economy. These transformations in turn have a dominating import to the whole of the social and cultural system, from the new forms of labor process, to the logic
of commodity manufacture, to the formation of a dominant ideological belief system. Marx argued:

\[\text{A radical change in the mode of production in one sphere of industry involves a similar change in other spheres. This happens at first in such branches of industry as are connected together by being separate phases of a process, and yet are isolated by the social division of labor, in such a way, that each of them produces an independent commodity. Thus spinning by machinery made weaving by machinery a necessity, and both together made the mechanical and chemical revolution that took place in bleaching, printing, and dyeing, imperative.}^{38}\]

In discussing the relationship of social, material and ideological values, Gramsci comments that

\[\text{...Man does not enter relations with the natural world just by being himself part of it but actively by means of work and technique. Further: these relations are not mechanical. They are active and conscious. They correspond to the greater or lesser degree of understanding that each man has of them. So one could say that each one of us changes himself, modifies himself to the extent that he changes and modifies the complex relations of which he is the hub...the ensemble of these relations.}^{39}\] (Emphasis original.)

Within the marxian tradition there are two ways in which information becomes reified: as part of the material forces of production (i.e., as technology), and as part of the legal, cultural and political superstructure (i.e., as ideology). The forces of production relate to the instruments, skills and techniques of producing material exchange values, while the superstructure relates
to the ways in which the present stage of development of these forces is politically, legally and ideologically legitimated. There is then a dialectical relationship that inheres in the tension, on one hand, between those who control the material instruments of production and the social relations of the production process and, on the other, between the production and ideological structure, the latter serving to make the necessary social relations appear as non-antagonistic and natural. These are common relationships within all social formations. 40

That such emphasis in the post-War period has been given to the international transfer of technology, and by apologists for TNC control to its "developmental" potential, is an outcome of the stage of development of the capitalist forces of production globally. 41 However, the forces of production, including labor power and technology, do not necessarily develop in precise correspondence. Crises in capitalism such as the energy crisis of the 1970s stall the otherwise expansionist character of center domination as do peripheral "anti-systemic movements" such as trade union resistance and revolutionary upheavals. 42 On the whole, however, capitalism has developed what Wallerstein sees as an "extensive division of labor" taking on both greater functional and geographical characteristics but rooted in the social organization of work. 43 Wallerstein further proposes that "the size of a world-economy is a function of the state of technology and in particular of the possibilities of transportation and communication within its bounds." 44 (Emphasis added.)
Other writers have also seen communication technology as not only the latest area of capitalist development but also the most socially penetrative. There is a difference, however, between those who see communication technology related to social and economic development in behavioral terms and those interpreting it as an outgrowth and product of the particular social formation. The notion of "development communication," discussed in the Philippine context in the following chapter, generally takes a functionalist, ahistorical view of society and relates change directly to personal and psychological characteristics and to institutional and technical pre-conditions. Such a view, according to two sociologists

is to conceive the future as a bigger version of the present - the liberal theory of progress-modernism is the accumulation of more consumer goods and the adoption of values and ideals tried and tested in the western world.45

Furthermore, they examine and interpret third world "news" as it is created and disseminated from the center to the periphery and show that western communication technology imposes its ideological hegemony both as "hardware" and "software." The subjugation that concerns a number of third world scholars is the degree to which domination is being carried out not only via ideological content of center communications but more aggressively via the infrastructure of telecommunications technology, now augmented by integrated satellite, terrestrial and submarine channels. The technological capacity for the transfer of alien
values has come to be popularly characterized among critical Latin American scholars as "cultural imperialism." \[46\]

Galtung has analyzed the phenomenon of communication and cultural imperialism as one of 'bridgeheads' by which the center imposes itself in collusion with the third world elite upon the periphery. However, this conveyor belt abstraction, while visually suggestive, does little to explain the specific tensions and contradictions that arise among advanced industrial powers and instead universalizes their relationships as "imperialist," suggesting an equivalence of ruling groups' compatibility ("harmony of interest") in U.S. relations with the Philippines and Soviet relations with Nicaragua or perhaps socialist France's relations with Egypt. The analysis of center-periphery political linkages can not simply be based on such spatial concepts but rather needs to be examined from the framework of the international division of labor and production. In another respect, however, Galtung has radically proposed that powerful technological instruments like telecommunications support a tendency within the center states to merge into a symmetrical multi-national system, although, again, there is an implied techno-rational determinism operating in his model that we do not wish to suggest. Nor do we hold to the notion of the structural distinctiveness that Galtung offers separating communications from cultural, economic, political or military imperialism. \[47\] As we shall try to show, telecommunications (and "telecomputercations") has both ideological (superstructural) and
production (infrastructural) roles to perform in the internationalized economy and is not a separate "type" of imperialism, as Galtung would have it, but rather an organic development of late capitalism.

It is facile within a culture dominated by the ideology of technological rationality and efficiency to lose sight of the systemic character of technology. Galtung's discussion tends to overlook the political economic foundations and historical phenomena of imperialism which, in our view, fails to ground the theory of imperialism in any concrete social analysis. Although his concept of communication imperialism recognizes the aspect of transnational domination, it does not discuss communication technology as an organic constituent instrument of world capitalism. In our study we will approach this question from a perspective that treats communications as an integral aspect in the reproduction of both ideological values and legitimacy as well as the specific forms of commodity reproduction corresponding to an internationalized technological (production) structure historically rooted in the corporate appropriation of science.

One of the developments of the post-War period supportive of the radical political evaluation of science and technology has been the revival of the marxian tradition of sociology. As a result of considerable political stress since the enunciation of the "Truman Doctrine" as well as the zealous errors committed by those trying to build a base for new mass politics, it has been difficult to trace a
strong critical tradition among the practitioners of natural science. This has changed, however, in recent years, and there slowly is emerging a literature engaging a radical sociology of science. This is by no means a cooperative or synergistic movement, as different lines are contending in sometimes hostile forums. The dialectic has, nonetheless, served to put certain questions regarding the character of science and technology, with special attention given to computerization technology, on an international discursive agenda. The "anti-nuke" movement has, of course, been an important catalyst to this discourse.

The society we have come to know as "modern" has, according to David Noble, been shaped by the "twin forces" of scientific technology and corporate capitalism. Noble traces the historical movement of the incorporation of science and technology (the "wedding of science to the useful arts") through the cooptation of the engineering profession, the penetration of American higher education and the resocialization of business culture by the forces of big industry, starting in the late 19th century. The success of capitalist production in creating social surplus has propelled its growth and creative capacities, reproducing in its historical outcomes the social relations, work styles, institutions, world views, etc., of human culture. Adopting the rationality of logical positivist empiricism, the captains of industry brought science and technology to the center of social discourse, and by cloaking themselves in the garb of "science" and "progress" and technology as
an autonomous historical force, they were able to legitimate effective control of business, social institutions and the state. In short, by the late 19th century American corporate business with its network of family, political, economic and social ties had ascended to the status of elite. In the 20th century their attention had turned from accumulation to include the social reproduction of science and technology—in particular, the transformation of the labor process toward greater control over workers. 49

This historical epoch as described by Noble and other writers concerned with the colonization of labor process under capitalism provides the underlying historical interpretation for explaining the phenomenon of technology transfer. As opposed to those, including segments of the left, who see science and technology as essentially apolitical in nature, we are proceeding along lines that view science and technology as internal to the production system. As such their character embodies the social relations of a production process—that includes the design of specific functions (as well as unintended outcomes), of general functions (how they integrate with other productive instruments in society), of participatory relationships (the relative control over their use, invention and reproduction by workers and by management), and of general social (use) value and exchange (cumulative) value.

Marxian dependency writers have come to recognize that transfer of technology represents the extension of capitalist
production relationships and value appropriation into the "underdeveloped" world. We see this as a dialectical, that is, manifestly contradictory and conflictual, social arrangement; however, we are mainly concerned in this study in understanding the dominant aspects. It is important to stress that, along with Noble and in contrast to Marcuse or Gouldner, we do not view science and technology as inherently destructive or obstructive of human liberation, which we broadly define as the movement toward demobilizing the structures, instruments, institutions and values of hierarchy and repression. Science and technology have no character other than the historical and social forces of their creation, application and socialization. In the third world context these forces have been historically introduced through conspicuous inequality, racism, and material, cultural and psychological oppression.

The strategic role of telecommunications transfer would appear to lie within this fabric. "Developmentalists" (or "diffusionists"), discussed infra, such as U.S. government and World Bank spokespersons, make their arguments for technology transfer as an extension of the traditional liberal paradigm yet are not, for the most part, defenders of oppressive outcomes. It is, however, their unexamined assumptions about the universality of western values, not to mention their uncritical notions of how those values are constituted in their own territorial domains, that fundamentally conflict with the sovereign aspirations, however articulated, of the
periphery. The "developmentalists," enthused by new telecommunication capabilities, have adjusted their discourse to support the long range possibilities of integration and convergence of political, economic and social forces at home and include the third world within their self-centered project. In all the literature of "development," it is rare to discover any attempt to define objectives in terms of direct social (human) endowment; instead, it rationalizes class dominance in various expressions of the technocratic ideology of "resource utilization" and "trickle down" theory.

The level of communication (and transportation) power which TNCs have at their disposal provides them the wherewithal to establish global production markets while reducing the productive attributes of labor, as one study on international capitalism explains.51 This claim is a key argument and closely relates to the political dimensions the supposed "post-ideological" technology of telecommunications may actually have. There are also considerations about the cultural dimension that telecommunication technology imposes itself upon. One well known defender of the transfer model, Ithiel de Sola Pool, insists that whatever decomposition of third world culture may result from interaction with western communication media is a reflection of the failure of indigenous cultural products to appropriately respond to their own cultural values.52 While there is a certain amount of insight to this statement, the "speech situations" in which these communicative
transactions occur are based on hegemony and not equality. As a more critical writer on international communications, Anthony Smith, has said about third world autonomy and western message flows:

It is no longer possible to conceive of technical distinctions between data required for government, industry, banking and newspapers and magazines, and if a nation's sense of its own independence and sovereignty is predicated upon control of information, it will experience increasing difficulties.53

Methodology and Sources

In discussing manifold aspects of communications technology in an international setting, we hope to show certain characteristics that derive from the contradictions of imperialism and dependency. Inasmuch as all communication involves social entry points, we begin Chapter 3 with a discussion of the formal ownership and control of the telecommunications system in the Philippines and the model of development which has found faithful adherents within the Philippine telecommunication planning structure. And as a radical structural approach analyzes use values and exchange values, we next discuss (Chapter 4) the immediate (carriers), the intermediate (carriers' carriers) and end users (clients) of communication services within a framework that cites the special significance of these global actors as agents of change. In Chapter 5 we discuss the special "consultative" role of the World Bank and its associated agencies as
supporters of the international transfer of capital model, the role which they have played in guiding the creation of telecommunication infrastructure and other roles related to model institutionalization including the (re)education of Filipino youth, peasants and industrial working class. Chapter 6 considers the effects of telecommunications technology transfer on society from the perspectives of the local scientific/technological community, the transformation of labor and the security efforts of the Philippine state system. Chapter 7 addresses general conclusions about the relationships of telecommunication technology to various constitutive groups, suggests other considerations based on the critical arguments we have introduced and raises particular questions that might be worthy of further investigation.

The methodology employed in this study is informed by certain critical questions that draw attention to the relationships of science and technology to society as well as assumptions discussed earlier concerning the evaluative context of empirical observations. There has been a considerable amount of literature published in the past decade concerning communication technology and another quite separate literature reviving marxist political economics to explain the current crisis of capitalism. In trying to bridge these two literatures through a political economic analysis of contemporary technology we hope to enliven the debate on a confusing and complex area of discourse.
We have chosen a case study in the hope of providing some empirical substantiation towards a political theory of communication. We do not pretend that such an approach will "prove" anything, but we also do not assume that fact data inquiry is meaningless. We likewise do not pretend to be operating within a "neutral" framework but have attempted to deal with various and profoundly contending bodies of critical literature. This is not the place to found new theory, we only wish to contribute to theory by focusing this effort on engaging the practice and the practitioners of international communications. Therefore, this study is an attempt to investigate a central theme of politics that deals with the organization and distribution of power. And we are interested in that realm of power that governs the ways and wherefores of contemporary social communication.

It is impossible to elaborate all the shortcomings of this study, but the questions addressed do cover major sections of popular concerns and issues and in a way, we hope, that reduces abstraction to readability and understanding. As a study of comparative politics we have studied the structure of international communication and of information exchange in the international marketplace. We have gone to many of the representatives of communication industries in the Philippines: Philippine government leaders; technocrats and bureaucrats in the U.S. and Philippine government and private sectors; social and natural science scholars, including mass media specialists, communication theorists and
development theorists from the U.S., Finland, England, Indonesia, Brazil, China, the Philippines, and other countries; agency spokespersons from UNESCO, ITU, the U.N. Center on Transnational Corporations and the World Bank; communication planners and central government scientists from Indonesia, the Philippines, the U.S. and India; telecommunication TNC and local corporation managers in the Philippines and in the U.S.; communications officers in the Philippine Army; Filipino and American communication union spokespersons; electronics association and small business leaders in the Philippines; and "mass" media practitioners (artists, directors, journalists, radio announcers, public relations personnel and critics) in the Philippines. Altogether, 114 notetaking personal interviews and countless insightful informal discussions and correspondences were conducted between 1979 to 1982 on the topic of this study.

The interview technique was both structured and open-ended, allowing for the particular competencies of the interviewees and free-flowing commentary, while searching for the nuts and bolts in an effort to grasp the interlinkages of families, of corporations, of technical roles and functions, of political and economic motivations, of social values and protocol and of world views concerning telecommunications. These interviews usually lasted at least one hour, often longer and were often followed up by second and third interviews. This started as a study of communication satellites in the Philippines but it became evident before long that
communication satellites are part of a much larger configuration of power, politics and the communication/information order. It has become an attempt to explain the parts and the totality.

Interviews of TNC managers included:

-- I.T.T./N.Y.
-- I.T.T.-Asia Pacific/Honolulu
-- I.T.T.-Globe Mackay Radio Communications/Manila
-- R.C.A./Global Communications/Honolulu
-- R.C.A.-Philippines Communications/Manila
-- Cable & Wireless-Eastern Telecommunications Philippines, Inc./Manila
-- Cable and Wireless-Philippine Consultancy Systems, Inc./Manila
-- Nippon Electric Company/Manila
-- G.T.E.-Hawaiian Telephone Co./Honolulu
-- G.T.E./Honolulu
-- G.T.E./Manila

Filipino-owned corporation managers interviewed included those at:

-- Philippine Long-Distance Telephone Company
-- Radio Corporation Philippines, Inc.
-- Philippine Telegraph & Telephone
-- Kanloan Broadcasting System
-- Philippine Domestic Satellite Corporation (Domsat)
-- Philippine Communication Satellite Corporation (Philcomsat)

In addition to these conversations (most often one-sided probing, actually) the study makes extensive use of documents on telecommunications corporations - foreign, domestic, joint venture and state enterprises - from files read many a morning at the Philippine Security and Exchange Commission, record and financial sections. Other government documents were read or collected in the
Philippines at the Ministry of Communications and Transportation, National Telecommunications Commission, Bureau of Telecommunications, Philcomsat, National Media Production Center, Voice of the Philippines, National Economic and Development Authority, Board of Investments, Central Bank, Ministry of Education and Culture, Educational Projects Implementing Task Force, Domsat (part-state owned), the University of the Philippines Institute of Mass Communications, the Philippine Army Communications Electronics Group, and Asian Labor Education Center. Additional important documents were found at the:

-- University of the Philippines, School of Law, Third World Studies Program, and School of Economics
-- Ateneo University, School of Business
-- Asian Institute of Management
-- Business Day Corporation/Manila
-- Sycip, Gorres, Velayo & Co. Library

A special note should perhaps be made concerning the names of those interviewed. A great many of these interviews/discussions took place under implicit, sometimes explicit, assumptions: in particular regarding the identification of these sources. For anyone who has lived under martial law, as this writer has for 4 1/2 years, or for anyone with ordinary sensibilities, it should not be hard to understand the appropriateness of this concern. Philippine prisons and "safe houses" (torture chambers) have hosted enough dissenters to legitimize this anxiety. Moreover, the fear of being candid was expressed even in people that would otherwise be
identified as pro-Marcos or pro-U.S. It is in tribute to the indomitable ability of human communication and consciousness even within the hallways of some of the world's most centralized and officially restricted communication centers that this study is inspired and dedicated.
NOTES TO CHAPTER TWO

1. The cold war against left academics has never really had a hiatus. During the current crisis of capitalism and the revival of marxist oriented scholarship, however, there have been signs of increasing polarization and pressure against critical research and teaching. See, for example, a commentary on this trend discussed by Alan Wolfe, "The Penalty of Having Politics," The Nation, June 19, 1982, pp. 748-749.


10. For the "critical marxist" perspective we are relying primarily on Gouldner's The Two Marxisms: Contradictions and Anomalies in the Development of Theory (New York: Seabury Press, 1980). Gouldner sees two traditions within marxism, one determinist, and the other voluntarist; one "scientific," the other "critical." It is the critical side which emphasizes the radical transformation of human identity and behavior while the scientific stresses the laws of economics. It is not that they are exclusive categories, but rather that Marx, himself, at different stages of his writing tended to emphasize one or the other, never really reconciling for Gouldner the action paradigm of Marx's youth with the scientific rendering of the capitalist system developed in his later years. Gouldner, himself, tried to bridge the understanding of inherent conflict between ideology and economy. Hence, he asks whose code of communication is to dominate? See Gouldner, The Dialectic of Ideology, pp. 145-146. See a review of Gouldner by Michael D. Kennedy, The Review of Radical Political Economics 13,4 (Winter 1982), pp. 67-68.


12. Ibid., p. 246.


15. Immanuel Wallerstein, "Rural Economy in Modern World-Society," Studies in Comparative International Development 12 (1979). We discuss Wallerstein's argument on labor integration as it relates to the Philippines in Chapters 5 and 6. Wallerstein cites the conflict between Mao and Liu in China as evidence of his arguments concerning world capitalism. He says their conflict was over their contending theories of class, Wallerstein supporting the idea of Mao that socialism is not an achieved status with the revolution but a long historical process. There is no evidence, however, that Mao shared Wallerstein's view of "world capitalism."


17. Of the two Frank is closer to the position outlined by Wallerstein that implies a further polarized periphery with its fuller integration with the center(s). Andre Gunder Frank, "The Development of Underdevelopment," eds. James D. Cockcroft, Andre Gunder Frank and Dale L. Johnson (Garden City, N.Y.: Doubleday, 1972), pp. 3-17; and Fernando Henrique Cardoso, "Dependency and Development in Latin America," New Left Review July-August 1972, pp. 83-95.

18. Cardoso, "Dependency and Development."


22. Cardoso, "Dependency and Development."


24. Robert B. Stauffer, "The Philippine Development Model: Global Contradictions, Crises and Costs," Philippine Journal of Public Administration, 25, 1 (January 1981), pp. 16-36; and Evans, Dependent Development, pp. 290-295. Evans concedes that the dependent development model has little applicability to most third world economies but also indicates the Philippines is among the top 7 recipients of U.S. manufacturing investment in the third world.

25. See Robyn Lim, "The Philippines and the 'Dependency Debate': A Preliminary Case Study" Journal of Contemporary Asia 8,2 (1978), p. 203, where she points out how deeply the Marcos family has been involved in state-owned projects. David Wurfel, "Elites of Wealth and Elites of Power, the Changing Dynamic," Southeast Asian Affairs, 1979, also shows that powerful families, particularly those close to Marcos, still constitute the main center of accumulation, moreso since martial law in industrial capital.


27. Ibid., p. 94.


33. Ibid., June 18, 1982, p. 78.

34. Amin, Class and Nation, p. 141.


41. The leading "post-industrial" ideologues, Daniel Bell and John Kenneth Galbraith are discussed separately in Chapter 5. Other defenders of their paradigm include the frequently published James Martin who holds out to readers visions of a technological Camelot in which, "There is almost no street robbery, because most persons carry little cash. Restaurants and stores all accept bank cards, which are read by machines and can be used only by their owners. When these cards are used to make payments, funds may be automatically transferred between the requisite bank accounts by telecommunications. Citizens can wear radio devices for automatically calling police or ambulances if they wish. Homes have burglar and fire alarms connected to the police and fire stations." What is remarkable about this description, apart from the fact that much of it has been realized in so short a time, is the preoccupation with security against an unmentioned but implied hostile social environment that necessitates such organization, and the absence of any serious consideration of its anti-social possibilities. See his The Wired Society (Englewood Cliffs, N.J.: Prentice-Hall, 1978), p. 8. One who views communication technology with a degree of concern for its participatory outcomes is Herbert Schiller. See his Who Knows: Information in the Age of the Fortune 500 (Norwood, N.J.: Ablex, 1981).

42. Wallerstein's controversial view is that it is precisely those countries that have had socialist revolutions that have more fully and ineluctably committed themselves to a stable state system, a course that will intensify the polarization of an internationalized proletariat from the centers of capital and state power. See his "Crisis in Transition," in Dynamics of Global Crisis eds. Samir Amin et al. (New York: Monthly Review Press, 1982), pp. 11-54.


44. Ibid.


46. Liberal and certain left positions in the mid-1970s on this issue, largely concerned with the U.S. "free flow of


49. A thoroughly researched historical study on this transformation is David F. Noble, America by Design (New York: Oxford University Press, 1977).

50. Armand Mattelart, a Chilean professor in exile, sees this ideology expressed in often subtle though more penetrative methods of domination: "[The] technocratic ideology - which presents an idyllic everyday world - tends to vulgarize the bases of social domination, and, by becoming the ideology of everyday reality causes the dominated to live day by day the ideological syndrome particular to the Latin American social formation (nationalism, populism, and 'developmentalism'). This it to say that it casts this domination in a friendly and diffuse light, making it easier for the oppressed to consume it."


CHAPTER THREE

THE STRUCTURE OF DOMINATION

Too little attention has been paid to the part which an early exposure to American goods, American skills, and American ways of doing things can play in forming the tastes and desires of new, emerging nations - or to the fact that, even when our aid ends, the desire and need for our products continues, and trade relations last far beyond the termination of our assistance.

- John F. Kennedy

The role and structure of the communications system in the Philippines has paralleled the historical development of world capitalism and the country's trade position within the emerging global enterprise network. Initially occupied by American interests that were concerned with keeping open "free trade" routes to China, the Philippines served as an important wedge against other expansionist powers in the region, particularly Japan. However, with the U.S. effectively outcompeted in the China market by the beginning of the Wilson administration, the Philippines as a colony came to have more of an importance of its own, both for economic and strategic military reasons. By the century's second decade the U.S. principal trade and investment rival in the Philippines since the
period of late Spanish colonization, the British, had been securely overtaken. 3

Guided into the modern period by the political and economic tutelage of "free trade" colonialism, the Philippines had proven a ready receptacle for foreign technology and technical innovation. At the time of the revolution against Spain, the British dominated Philippine agriculture and trade together with its land and sea lanes, holding the only national railway, most of the shipping industry and the China (Hong Kong)-Philippines submarine cable connections. However, once the United States assumed political sovereignty, it was only a decade before the Payne-Aldrich tariff and "free trade" came to mean privileged U.S. exploitation of the Islands' natural resources, notably agricultural export produce. 4

Clearly, the U.S. was rapidly establishing itself as the hegemonic power in Philippine trade, its goods imported to the Islands rising from 7 percent in 1899 to 65.5 percent by 1934 while exports of Philippine products to the U.S. increased from 26 percent to 84 percent over the same period. 5 As the Philippine economy greatly expanded in this period, it was also one deeply dependent on the metropolitan country that brought with it a pro-U.S. attitude of subordinate gratitude (utang na loob) persisting to the present era yet a basic value orientation which certain anthropologists have failed to discuss in its political economic or colonial dimensions. 6
The vital communication/information channels linking the Philippines to the outside world at the time of the Spanish-American War relied heavily on the cable telegraphic capacity between Hong Kong and Manila, owned by the parent company of the current international and Philippine submarine cable monopoly, Cable & Wireless. When the Spanish refused George Dewey's demand to open the Manila end of the cable to both belligerents following his victory at Manila Bay, the American commodore severed the channel, thereby blocking instantaneous communication between Manila and Madrid. A month later the U.S. used the same weapon in Cuba, cutting Spanish government connections from Havana to the metropolitan base by order of the U.S. Navy Department. A political precedent for the use and abuse of telecommunications had been set. 7

Upon their colonial conquest, the U.S. Army Signal Corps proceeded to put down 1500 miles of cables and landlines between all the major Philippine islands for military applications which later formed the network for commercial use of the channels initiated in 1905 by the Philippine Islands Telephone and Telegraph Company. In the 1920s radio telephony and telegraphy brought American communication carriers to the Philippines, and through a series of mergers, starting with the partnership of businessmen John Mackay and New York Herald owner James Gordon Bennett, created the Globe Mackay Cable and Radio Corporation, becoming in 1956 a subsidiary of ITT. RCA/Philippines was opened in 1924, introducing the first
direct shortwave radio-telegraph circuit between Manila and the U.S. in 1927.

Broadcast radio also arrived in the Philippines by the 1920s led by an American, Henry Hermann, who sold out his experimental stations to RCA interests within a few years. Philippine radio, like its American mentor, was almost immediately infused with commercial messages, and just prior to World War II the four operating radio stations were all owned by department stores and used for advertising merchandise. The talking and singing box found rapid celebrity status in the Philippines, often brought along to add gloss to special events even when the content of the early models offered little but noise and static. By the late 1950s the less expensive transistor models made radios available for the first time to much of the rural hinterlands. One communication scholar reports that the American C.A.R.E. program made a major contribution not only to the expansion of commercial broadcasting but also to anti-communism, donating thousands of transistor radios to Philippine barrios which then President Carlos Garcia had requested to lend support to his administration's counter-insurgency campaign.

Television had a similar evolution. An American started the first television station but soon sold it to Judge Antonio Quirino, brother of the then incumbent President. The station, featuring largely canned American programs, was put on the air just prior to the 1953 presidential elections. Despite its obvious political
value, though still limited in circulation, Elpidio Quirino lost his bid for a second presidential term to the popular Ramon Magsaysay, who, among his other qualifications, also happened to be the candidate of the CIA.10

Other TV stations rapidly sprang up which eventually turned into tri-media operations of big business and political families. In the late 1960s the largest such chain, which included 20 radio stations, 5 TV channels and the daily Manila Chronicle, belonged to the family of Fernando Lopez, Marcos' Vice President and one of his main political antagonists at the time of the martial law declaration. The Lopez media interests together with their other large business holdings were seized in 1972 and re-opened shortly thereafter under new management led by Marcos' family and closest business associates. The Lopez family, now in exile in the U.S., continues to lead elite opposition to Marcos' political monopoly in the Philippines.

The most important communication technology to be introduced to the Philippines, which is seen by many as the technology to unite all other technologies as part of the "post-industrial revolution," is computer-based telecommunications. Without it the expansion of the transnationalized economy on which sub-economies like the Philippines are based would be unthinkable. The decentralization of production and distribution units of the TNC demand instantaneous, reliable and large scale data processing media to safely conduct the planning, management and growth of the global enterprise. As one
writer explained, computers help to "concentrate the structures of
authority by allowing the power to increase its control at all
levels of the enterprise, and to thus decentralize without taking
any risks."11

Responding to the integrative capabilities which a computer­
based communication/information system could provide, an Intelsat
franchise called Philcomsat was established in the Philippines in
1966, according to its articles of incorporation "for the benefit
...[of] the government of the Philippines and all of its branches,
including the National Defense as highest priority."12 (Emphasis
added.) The "highest priority" was actually not defined by
Filipinos but by the U.S. Defense Communications Agency (D.C.A.)
which by the mid-1960s was developing an enormous military
communications complex centered on the Indochina conflict.13 The
establishment of Philcomsat and the installation of its first ground
station was started as a project of the DCA in December 1966 as part
of its battle plan connecting U.S. military bases in the Indochina
region: Hawaii, Guam, Japan, Vietnam, Thailand and the Philippines.
On April 1, 1967, Comsat, the U.S. monopoly representative and
controlling member of Intelsat, leased to Philcomsat a satellite
antenna under a 15 year contract. By 1969 the U.S. military was
directly leasing 40 circuits, half the total, the other half going
to the U.S. international carriers, Hawaiian Telephone (GTE-PLDT),
WUI and ITT-Globe Mackay.14
Satellite usage was also planned for "meteorological, airway and sea lanes information and safety" as well as for the telephone industry, newspapers and press services, the broadcast industries, telegraph services, etc.\textsuperscript{15} In the early 1970s Philcomsat began planning a domestic satellite (Domsat) transmitting and receiving network to create an "integrated telecommunications system" initially foreseen to "improve radio, telephone and television transmission" with educational TV being a primary objective.\textsuperscript{16} An official document later added high-speed data and facsimile services to the proposal and advised the President of the military potential of transportable satellite earth stations.\textsuperscript{17}

The emphasis on security was also apparent from the fact that the briefing to President Marcos on this proposed integrated national telecommunication network was led by Charles Horne, an American GTE executive serving as vice president for the Philcomsat management company together with Defense Minister Juan Ponce Enrile, Executive Secretary Alejandro Melchor (a U.S. Naval Academy graduate), Secretary of Finance Cesar Virata (a Wharton M.B.A., currently Prime Minister), General Espino (Armed Forces Chief of Staff), commander of the major Armed Forces services, and chiefs of the various intelligence agencies.\textsuperscript{18}

The political economic context in which current emphasis on telecommunications has been organized by President Marcos and his domestic and foreign advisors relates to the mode of production of the world capitalist model. The early delivery of sophisticated
satellite and other communication technology to the Philippines signals the speed with which transnational corporations, the U.S. military, and their political representatives hope to incorporate the third world into their mainstream of expansion and security. During the martial law period Marcos succeeded in building up a communication network that includes domestic and international communication satellite systems, an international submarine cable system, a network of telephone and data transmission services to the scattered urban areas of the archipelago, and a highly centralized and regulated broadcast and print media establishment. These instruments of socialization and political control are run by commercial and military interests which have been dominated, as we shall document, by foreign commercial and military counterparts in terms of design and function, decision making, ownership, and ultimately of end users. To examine this evolution in the recent period we next examine the bureaucratic structure of the Philippines that has helped integrate and rationalize the allocation of resources for the adoption of the "information age" model of national development.

Model Building

Since the 1950s when "modernization" specialists like Pool, Pye, Lerner and Schramm popularized the rationale for the diffusion
of U.S. communication technology as a correlate to economic
development, powerful "internationalist" institutions have made
strategic investments to help socialize Filipino decision-makers,
intellectuals and the public to this model. Lerner, who is often
cited in the Philippine communication curriculum for his transfer of
values research in the Middle East, and who stressed the
"nation-building" correlation model, especially the psychological
variables emphasized by Riesman, McClelland and others, strongly
argued for the extension of "mass media" as a strategic instrument
for breeding "modernization" habits. Reflecting the liberalism of
his day, he once commented:

> What is required to motivate the isolated and illiterate peasants and tribesmen who compose the bulk of the world's population is to provide them with clues as to what the better things of life might be. 9

Pool, an M.I.T. colleague of Lerner, has shared a similar view:

> The modern media extend the scope of man's empathic comprehension of ways of life that he has not experienced at first hand. Newspapers and radio enable people to conceive what it is to be a ruler, or a foreigner, or a millionaire, or a movie star. 20

In a Voice of America publication series widely distributed among
"modernizing elites" in the Philippines during the formative 1960s,
Pool urged the adoption by third world countries of "commercial
sponsorship" of mass media on the basis that "advertising ... is a
way of facilitating the distribution of commodities, broadening the market, and making people aware of possibilities with which they would not otherwise be familiar."21

In his often cited work written in the 1960s on communication transfer to the third world, Wilbur Schramm was inclined to argue McClelland's "need for achievement" thesis as a primary basis for transforming non-western peasant societies:

Mobilizing human resources requires the substitution, wherever possible, of productive attitudes and behaviors for unproductive ones such as we have been mentioning. By productive attitudes we mean those favorable to cooperation, especially to cooperation in all long-term national effort; social patterns that make cooperation and mobility easy; attitudes favorable to innovation, to work, to good health practices, to saving, and to the achievement of delayed rather than immediate rewards... the set of attitudes which Max Weber called the Protestant Ethic. It is clear that they were developed in a number of cultures in fairly recent times, and if they were developed once, there is good reason to think they can be developed again.22

It was during this same period that the Ford Foundation, active in American education values transfer, helped create an ETV network at the then American Jesuit-run Ateneo University in Manila while the U.S. Agency for International Development funded the Philippine government National Media Production Center; both projects were later reorganized to actively promote propaganda favorable to the martial law regime. AID installed Marcos' national military telephone alert system through which he personally
coordinated the seizure of power during the night of the martial law implementation. The media were likewise retooled to suppress radical nationalism and to legitimate further foreign business participation such that by 1974 over 75 percent of television broadcast time was imported and underwritten by the largest advertising agencies and advertisers which were U.S. transnational corporations.

Leading Filipino technocrats under the regime have themselves been active enthusiasts for communication diffusion theory, justifying centralization and control of the mass media in the instrumentalist lexicon of "development communication." In 1973 the chairman of the Ministry of Public Information and the Mass Media Council, Francisco Tatad, citing Schramm's *Mass Media and National Development* to explain the need for censorship, declared:

> from hereon, the development of media... must be solely measured in terms of the advancement of society... media as an active agent for social change... is to help inculcate in the polity such values and attitudes that must precede the transformation of society.

And Gloria Feliciano, dean of the influential Institute of Mass Communication at the University of the Philippines, who coordinates most high-level government projects, asserts:

> It is axiomatic that national development can proceed only as fast as the people involved can be involved and persuaded to participate actively in the development process... the most easily
accessible, fastest, relatively less expensive way of getting the masses into the mainstream of socio-economic development is through mass communication. 26

A communication scholar who has written extensively on Asia, John Lent, points out that research on Philippine mass communications has since 1972 shifted dramatically toward the government's development programs "where the supranational and governmental agencies have placed their money," with virtually no attention given to government-press relations because of what he sees as "apprehension on the part of researchers concerning sensitive topics." Such sensitive topics, he found, include the effects of transnational corporations on mass media - on television, on advertising, on news traffic within the country and from external sources, etc. The sponsorship for research that does exist, he argues, is a "reflect[ion of] the priorities of government rather than the public, of elites rather than the masses, of establishment rather than radical attempts to reform the society." 27

This top-down approach to national development based on the economic model of import substitution of intermediate and capital goods is the official policy of the Philippine government. Within this framework Marcos has looked to the most advanced sector of western capitalism, telecommunications, as one of the primary generators of the country's business environment, with emphasis on foreign "turnkey" investments and non-traditional export-oriented corporate industrialization, particularly in electronics. 28 The
chairman of the regulatory National Telecommunications Commission (N.T.C.) envisions economic growth deriving from a rapidly expanded and integrated local, domestic long-distance and international communication structure that "will be interconnected as part of the Global Telecommunication Network." While pushing brisk acceleration of the private communications sector, the government embarked on its own ambitious ten-year "master plan" (1978 to 1987) with spending on domestic telecommunications expected to reach 4.654 billion pesos ($650 million) at 1977 prices that would provide "transmission services among regional, provincial, and municipal centers. . .[as] a stimulus for integrated socio-economic development, especially on the regional level."  

By 1979, however, the initial five-year "development plan" (1978-1982) was in disarray. The Ministry of Public Works, Transportation and Communication was scuttled. Setbacks in oil exploration and rapid rises in energy and shrinking foreign currency reserves forced the Marcos government to all but eliminate public investment in telecommunications, instead providing letters of credit for a major buildup by the private sector. The government telephone and record carrier, Butel, which was to have received the bulk of the P4.654 billion budget and P600 million for 1978 through 1980 was actually allocated only P87 million and disbursed even less.  

The goals had been to raise telephone density from 1.29/100 in 1977 to 2.18/100 in 1987, to have telegram service reach all towns and municipalities and to make telex available to
"new growth centers" in all parts of the archipelago. But under private sector investment, only the "growth center" concept has been preserved which has meant investments almost exclusively in the Manila business district and the export processing zones. A downtrodden planning official at Butel conceded in interview that the government had capitulated to private interests but not necessarily fully out of budgetary constraints. As he put it, "In communications the policy of the government is free enterprise."

The newly-created Ministry of Transportation and Communication was handed over in late 1979 to a young, aggressive executive freshly recruited from the private sector. The minister, Jose P. Dans, had been chairman and president of the Erectors Corporation, a fast-growing construction firm with contracts in the Middle East worth P3 billion by the time of his appointment, and was also chairman of Mantrade Automotive Corporation, a joint venture with the Japanese automotive Hino and giant Marubeni trade corporations. Dans' plush corporate-looking ministerial accommodations in the affluent Manila suburb of San Juan is optically as well as in management style a stark contrast to the drab disorganized bureaucratic ambiance of the structures housing the National Telecommunications Commission and Butel.

NTC and Butel, located in older parts of metro Manila, are both run by Ceferino Carreon, an aging ex-army general who was commander-in-chief of the Philippine Civic Action Group in Vietnam and who lost out to Dans in the battle for the new Ministry post.
According to several ranking sources in the industry, Carreon had the backing of the government communications sector but Dans had the support of Marcos' irrepressible spouse and leading political mobilizer, Imelda.  

The Structure of Communicative Integration

It is well established in the literature on the structure of the Philippine economy - and among Filipino technocrats as a matter of common knowledge - that the portfolio of domestic financial control is held by President Marcos, his wife's family and his closest political allies. Major business ventures in manufacturing, trade, transportation, banking and finance, real estate, natural resources, energy, public utilities, communication, and other high investment sectors are widely documented to belong to Marcos "dummies" or to his bloc of personal interlocking associations. All of these investments, in turn, form part of a complex network of transnational corporate penetration of the political economy through highly favorable investment incentive laws and joint venture arrangements. Economic specialists like Vicente Paterno, former Minister of Industry in the Marcos technocracy, "continue to believe that multinational firms have a meaningful role to perform in the country's development, and that incentives, for their entry into selected areas, continue to be valid instruments of national development."
In this chapter we will examine the principal structural design of the transnationals in the communications/information sector together with their domestic partners, of whom the President is the most prominent. As a major showcase of the capitalist growth model in the third world, the Philippines serves as one of the most open sanctuaries for foreign investment, as the headquarters of the Asian Development Bank, as host for the Southeast Asian base of the U.S. International Communication Agency, its subsidiary Voice of America and the largest military installation outside the continental U.S.A. The economic and military requirements of foreign entities therefore make the Philippines a strategic communications center, as Marcos himself says, "to achieve material advancement within the context of the world political economy, under orientations and conditions established by the revolution in communications...what McLuhan calls 'the global village'."\(^{39}\) (Emphasis added.)

To develop what the President and his benefactors mean by the "revolution in communications" in the Philippine context, we look at:

1. the structure of international communication;
2. the regulatory structure for foreign communication operations, the formal ownership and financial control of enterprises operating in the Philippines together with their domestic interlocks; and
3. the functional relationships of the country's communication resources.
In this way we will seek to gain a perspective on the larger context in which the Philippines operates as a communication center both for domestic and external demand sectors and the principal groups that comprise those sectors.

The private and public institutions which have been instrumental in bringing about the transfer of communication technology to the third world are far too numerous to describe at length; however, the locus of control has been wrested by the major capitalist industrial powers - the U.S., U.K., West Germany, France, Japan, Sweden, and the Netherlands. The largest of the transnational telecommunication corporations of these national powers are also among the major agents of information transfer in the Philippines.

Historically, the expansion of international capital has been accompanied by the increasing transnationalization of communication, particularly since the end of the nineteenth century. In Capital, Marx had already emphasized the strategic importance of communication as part of the growth of the modern state, commenting that "the revolution in the modes of production of industry and agriculture made necessary a revolution in the general conditions of the social process of production, i.e. the means of communication and transport." The determined geographical movement of capital depended on overcoming the barrier of space or what Marx called "the annihilation of space by time." It is only in the present era that capital through the system of transnational enterprise armed
with information transfer technology has been fully able to transcend production and ethereal barriers of space.

In this contemporary context a communication scholar, Cees Hamelink, stressed the vital linkage of electronic telecommunications to the growth of international capital. He proposes that the modern instruments of transnational business - telex, data transmission and satellite - have "made it possible to have production units in many different locations and yet control the whole network with a global management policy from the central headquarters." He finds that the "combined transnationalization of production and communication has found its most concrete expression in the transnational corporation." Communications has in fact become such a central concern to capital that even in the design of operational facilities, the communication routes become the primary configurations from which the architect is expected to choose, organized on the functional model of the beehive.

Drawn by the expansion of capitalist growth within its vortex, third world countries like the Philippines are required to incorporate the transnational mode of communications and transportation as a way of welcoming foreign investment for development into the future. This sector is ranked by the Marcos government as one of the key areas requiring improvement toward that end. The quickness with which the most advanced technology, such as communications satellites, data transmission systems, modern computers and electronic switching systems have been introduced to
the Philippines is illustrative of the pressure on third world countries to make the technological transition as required by TNC expansion.

Most of the literature on the Philippines' communication system has taken a Lasswellian functional oriented approach, and even scholars critical of the centralization model practically ignore the dependency relationship of communications to world economy. There is, however, a need to document the sources of power at the state and local commercial levels in order to explain the interrelationships and dialectical tensions among them that have pressed the state to become a more active entrepreneur or backer for local capital. We look first then at the domestic and local capitalist sector as one source of telecommunication enterprise and next at their structural interlinks with international industrial and financial capital.

Who Rules the (Air) Waves?: Domestic Linkages

One of the most concentrated areas of business ownership is communications, an area immediately consolidated with the martial law declaration. President Marcos made use of his newly designed autocratic powers to put print media into four major newspaper-magazine conglomerates: the Express chain owned by Marcos through Roberto S. Benedicto and financed in part from the
President's contingency fund, the Bulletin publications owned by Marcos' former military aide, Hans Menzi, the Times Journal chain of Imelda Marcos' family, and the Focus, Evening Post-Orient Express combine of a Presidential assistant Juan Tuvera and his wife Kerima Polotan who is also Imelda's official biographer. A Marcos appointed governor of the Development Bank of the Philippines, Leon O. Ty, and Ralph Nubla, Kuomintang community organizer for Marcos in Chinatown, publish the other main newspapers, the Weekly Examiner and the United Daily News. ⁴⁵

Under martial law the Philippines has had a rapid expansion of television and radio broadcasting. With the political opposition to Marcos silenced or incarcerated, the Benedicto group was given the opportunity to also seize the lucrative broadcast industry in the name of reforming the communication process toward "development" objectives. Drawing heavy state-owned Philippine National Bank loans, Benedicto expanded Radio Philippines Network (RPN) to all 12 regions of the country. Four of the five television networks and the most strategic radio stations which operate in the country are under the supervision of RPN while a fifth is owned and operated by former Presidential aide, Gualberto Duavit, together with the Filipino wife of the former American owner, Robert Stewart. ⁴⁶

Marcos further assured control of the television industry to RPN in 1978 by effectively overturning an earlier decree that was supposed to encourage domestic production of TV receivers and by handing over the huge outer-Manila market exclusively to a
Japanese-Benedicto joint venture called Nivico. The seven other major television manufacturers futilely protested the new law (Letter of Instruction No. 640) that gave Nivico sole tax- and duty-free component import rights (carried on ships owned by Benedicto interests). 47

Domination of the "mass media," discussed in more detail elsewhere, 48 is but a small part of the Marcos communication monopoly. In the early 1970s a government inter-agency telecommunications study was commissioned to plan the expansion of a domestic and international business communications system for "social and economic development." 49 But while the recommendations included state-ownership and emphasized national and regional "integration," the actual commitments have materialized on behalf of the private international trade and investment sectors, principally in the following projects:

*The Philippine Long Distance Telephone Company (PLDT), the 22nd largest corporation in the Philippines in 1979, began a P6.5 billion ($870 million at 1977 costs) project with the Siemens Corporation of the Federal Republic of Germany to install in Manila and major regional centers an all-digital telephone switching and dialing system by 1986.

*The Domestic Satellite Philippines, Inc. (Domsat), using Indonesia's "Palapa" satellite, 50 contracted for 11 initial earth stations using 11 meter antennas (one transportable earth station using a 4.5 meter diameter antenna) and began service in 1979. Initial costs were estimated at $16 million in 1977 but were doubled by 1980. 51

*Philcomsat, the Philippine representative to the International Telecommunications Satellite Consortium (Intelsat), has been in operation as a "carrier's carrier" since 1967 serving the U.S. military, the international
carriers and PLDT. Originally established for U.S. military circuits from Hawaii to the Far East for the conduct of the U.S. war in Indochina, the current bulk of Philcomsat traffic goes through PLDT for international telephone service. The U.S. military, however, remains its largest single end user.52

*The Radio Philippines Network (RPN) bought out the single KBS-TV station in 1967 and by 1978 had 13 TV stations and at least 31 radio stations. Retained as a management company, KBS runs its own TV/radio stations as well as 3 of the 4 other TV/radio network chains.53 RPN is the transmitting network for Domsat and for special broadcasts from the Presidential palace. The establishment of 11 Domsat satellite earth stations, when completed, will enable RPN to become a fully national network. The major supplier of RPN and Domsat has been the Japanese transnational trading conglomerate, Marubeni, with equipment from Nippon Electric Company.

*Eastern Telecommunications Philippines, Inc., (ETPI), an international carrier, and its domestic interconnect, Oceanic Wireless, Inc. are joint ventures of the British international telecommunication giant, Cable & Wireless. ETPI is part owner and the Philippine monopoly participant of the ASEAN cable network that links the Philippines with Hong Kong and Okinawa (the OLUHO) system, with Singapore (PHILSIN) and with Taiwan (TAILU), with plans to establish links to Thailand, Indonesia and Malaysia by 1983.54 As backup, an Oceanic troposcatter radio communication system is also connected with Taiwan. ETPI is one of the 3 major international record carriers, all private, that handle telegraph, telex and data transmission. The others are the ITT subsidiary Globe Mackay Cable and Radio Corporation (GMCR), and RCA's Philippine Global Communications, Inc. (Philcom).

Among the lasting political values that survive the militarization and internationalization of the Philippine socio-economic order is the primacy of patron-client relationships, formal extended family ties, and *compadrazgo* (affiliations established by various religious rituals). Described by one Philippine specialist,55 these values have over the years helped
solidify extra-family bonds rooted in an historically agrarian-based society. Long-standing dyadic relations were used to cement political factions into larger units serving formal (representation) and informal (social regulation) functions. Although traditional family centered business enterprise has been most common, the contemporary Manila capitalist-oriented economy can be characterized by a trend toward secularistic social formations, more closely resembling western corporate management style.

The strong personal allegiance orientation of the Japanese management system has also been specially influential in the Philippines which probably accounts in part for the favored status accorded Japanese investment during the dictatorship period. As Table I indicates, a principal partner of the Japanese sogo-sosha (general trading firm) Marubeni has been the Benedicto communication enterprises. A former ambassador to Japan, Benedicto was in the premier position to assimilate Japanese business practices. And through such joint venture partnerships, increasingly popular in the 1970s, it would not be unlikely to find the paternalism characteristic of the Japanese corporate social structure engrafted onto the traditionally more familial style of Filipino elites.

The Benedicto-led holdings (in telecommunications it includes Jose L. Africa and Manuel Nieto, the so-called BAN group) are closely associated with President Marcos. As one of the regime's ex-officio officers, Benedicto has integrated the semi-official Express news chain and national television network,
# TABLE I

## MAJOR TELECOMMUNICATION ENTERPRISES

<table>
<thead>
<tr>
<th>Corporation</th>
<th>Main Local Partners</th>
<th>Main Foreign Partners</th>
<th>Area of Cooperation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. PLDT</td>
<td>Cojuangco</td>
<td>Siemens GTE</td>
<td>Telephone switching and other equipment</td>
</tr>
<tr>
<td>2. Telectronic Systems, Inc. (Retelco, PT&amp;T, et al.)</td>
<td>Santiago</td>
<td>GTE</td>
<td>Telephone switching; Financing</td>
</tr>
<tr>
<td>3. ETPI</td>
<td>Benedicto</td>
<td>C &amp; W Western Union International</td>
<td>Cable communications; International carrier</td>
</tr>
<tr>
<td>4. Oceanic Wireless</td>
<td>Benedicto</td>
<td>Cable &amp; Wireless Wireless</td>
<td>Troposcatter communications</td>
</tr>
<tr>
<td>5. Globe Mackay (GMCR)</td>
<td>Ayala</td>
<td>ITT</td>
<td>International carrier</td>
</tr>
<tr>
<td>6. Philcom</td>
<td>Enrile</td>
<td>RCA</td>
<td>International carrier</td>
</tr>
<tr>
<td>7. Nivico</td>
<td>Benedicto</td>
<td>Marubeni</td>
<td>TV manufacturing</td>
</tr>
<tr>
<td>8. GTE/ Philippines</td>
<td>Cojuangco</td>
<td>GTE</td>
<td>Telecommunications equipment</td>
</tr>
<tr>
<td>9. ITT/ Philippines</td>
<td>Ayala</td>
<td>ITT</td>
<td>Telecommunications equipment</td>
</tr>
<tr>
<td>10. Domsat</td>
<td>Benedicto</td>
<td>Marubeni</td>
<td>Satellite earth stations</td>
</tr>
<tr>
<td>11. Philcomsat</td>
<td>Benedicto</td>
<td>GTE Philippine Plessey (U.K.) gov't. (Enrile)</td>
<td>Satellite earth station equipment</td>
</tr>
<tr>
<td>12. Radio Philippines Network (RPN)</td>
<td>Benedicto</td>
<td>Marubeni</td>
<td>TV and radio broadcast equipment</td>
</tr>
</tbody>
</table>

RPN, with the country's telecommunication infrastructure creating in the process a massive communication/information, that is, ideological, national substructure connected to the global capitalist communication/information superstructure.

Benedicto is chairman of the international Asian cable and carrier corporation, ETPI, and director of the domestic (Domsat) and the international (Philcomsat) carrier and carrier's carrier satellite system. His close ties to Marcos come by way of a highly valued fraternity brotherhood and from their law school years at the University of the Philippines, his active role as a political party fund raiser, a long-standing business relationship, and common financial interests in banking, mining, chemical, coconut and sugar products together with the mass media enterprises that were divested in 1972 from Marcos' vanquished political rivals.

In the late 1960s Benedicto was appointed by Marcos as ambassador to Japan and later as president of the government's Philippine National Bank (PNB). After the martial law declaration, Benedicto together with his BAN associates, Africa and Nieto, used leverage to build the President's national tri-media network, and Benedicto was rewarded for his efforts by being made chairman of the Philippine Sugar Commission and treasurer of Marcos' controlling political party, Kilusan ng Bagong Lipunan (KBL - New Society Movement.) In 1982 Benedicto was appointed as a member of Marcos' newly formed "executive committee" to administer the government in the event of Marcos' death or incapacitation. Testifying in 1975
before the U.S. House International Organizations subcommittee, an exiled presidential aide of Marcos and former Philippine National Press Club president declared bluntly, "What Mr. Benedicto owns, Mr. Marcos owns." 58

The BAN group mass media and telecommunications holdings are part of Marcos' vast linkages to transnational corporations and the international economy. Shortly after martial law was declared, Benedicto was sought out by Cable & Wireless' (C&W) Philippine branch, Eastern Extension, as a joint venture partner under a new Constitutional provision requiring at least 60 percent Filipino ownership of international communication enterprises. A top British executive of the "new" corporation, Eastern Telecommunication Philippines, Inc. (ETPI), plainly described the choice of partners as one of "political expediency." 59 And an ETPI brochure just as plainly states that the "provision of first-class communications facilities...serves to attract multinational corporations to invest in the Philippines." 60

Through the provision of special concessions from the Presidential palace, including tax- and duty-free imports, exclusive rights to the ASEAN communications market, and, at the outset, the sole permit to operate international circuits from the Bataan export processing zone, the British-Philippine joint venture was able to bring the Philippines more tightly into connection with their international carrier monopoly in Hong Kong and other Asian cable markets. In Hong Kong, C&W owns the medium of international
communications, cable and Intelsat links, as well as provides communication services, telex, telegraph, data transmission, etc. That is, they act both as a carrier and a carrier's carrier which some industry respondents see as an essential "conflict of interest."

The OLUHO cable system, laid by C&W, ITT's British subsidiary Standard Telephone and Cable and Japan's Nippon Electric (NEC) operated jointly with the Japanese international telecommunications monopoly, K.D.D., cost $55 million with P265 million ($35.5 million) in credits from the British owned Hong Kong-Shanghai Bank. In 1980 ETPI opened a Philippine-Singapore cable that was expected to cost another $55 million. These two cable systems plus one planned for Luzon-Taiwan was to add 4500 circuits. And by 1983, additional ASEAN connections with Thailand and Malaysia are to be laid, all terminating at the well-secured Philippine landing station in Currimao, Ilocos Norte, just a few miles from the President's hometown, Batac. The 1977 opening of the ASEAN cable network, celebrated with the highest government officials in attendance, occurred symbolically on an important Philippine national day, September 11 - Marcos' birthday.

Another important national day, September 21, which marks the anniversary of martial law, was chosen as the moment to inaugurate domestic satellite communications. Domsat, owned by Benedicto interests, contracted for 11 nationwide ground stations initially intended for a transmission hookup with Intelsat using 11 meter NEC-built antennas ended up connecting
their ground stations to the Indonesian "Palapa" satellite at a rental or $750 thousand per transponder per annum. Domsat began operating telephone and data transmission services in 1979 and television in 1980 from the two RPN control facilities in Manila and Benedicto's hometown, Bacolod. Commercially designed principally for television, 10 of the ground stations were to link various regions through sister RPN transmitting or translator stations. (See Table II.)

After two years of operation, rising costs, delays in putting up the terminals, rifts with PLDT's president Ramon Cojuangco, and heavy reported losses based on the "Palapa" rental, the TV segment was still not performing, and the telephone segment was still far too expensive to substitute many satellite circuits for microwave. It was only in January 1980 in preparation for the provincial and municipal elections that month that Domsat went on the air, offering coverage of the President's KBL campaign and well-publicized American TV entertainment specials.

The prospects for widening the degree of utilization of Domsat were not auspicious. The initial plan was to expand to three hours of TV satellite broadcast time per day, considered by Domsat management to be at or just below the financial breakeven point. PLDT, whose partnership in Domsat was vital for the terrestrial links from broadcast to satellite ground station to provincial station receivers, was said to be dragging its feet in establishing either telephone infrastructure in the rural areas or the microwave and other transmission equipment needed for television.
# TABLE II

**RPN - DOMSAT BROADCAST INTERCONNECTIONS**

<table>
<thead>
<tr>
<th>Service Area</th>
<th>Domsat Earth Station/Location</th>
<th>Corresponding RPN Station/Location</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LUZON:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central, Southern Luzon</td>
<td>Manila</td>
<td>TV 9/Manila</td>
</tr>
<tr>
<td>Ilocos</td>
<td>Laoag</td>
<td>TV 11/Laoag</td>
</tr>
<tr>
<td>Cagayan Valley</td>
<td>Tuguegarao</td>
<td>TV 5/Tuguegarao</td>
</tr>
<tr>
<td>Bicol</td>
<td>Iriga</td>
<td>TV 10/Iriga</td>
</tr>
<tr>
<td><strong>VISAYAS:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negros Province</td>
<td>Bacolod</td>
<td>TV 8/Bacolod</td>
</tr>
<tr>
<td>Eastern Visayas</td>
<td>Cebu</td>
<td>TV 9/Cebu</td>
</tr>
<tr>
<td>Eastern Visayas</td>
<td>Tacloban</td>
<td>TV 5/Tacloban</td>
</tr>
<tr>
<td><strong>MINDANAO:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northern Mindanao</td>
<td>Cagayan De Oro</td>
<td>TV7/Cagayan De Oro</td>
</tr>
<tr>
<td>Southeastern Mindanao</td>
<td>Zamboanga</td>
<td>TV 5/Zamboanga</td>
</tr>
<tr>
<td>Southwestern Mindanao</td>
<td>Davao</td>
<td>TV 4/Davao</td>
</tr>
<tr>
<td><strong>PALAWAN:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All Palawan</td>
<td>Puerto Princesa</td>
<td>TV 3/Puerto Princesa</td>
</tr>
</tbody>
</table>

*Source: DOMSAT, Project Study, Vol. II, Annex 3, "DOMSAT Service Areas and RPN TV Coverage."*
Philcomsat, while turning a profit, was gradually losing out the developing lucrative markets in Asia to cable networks held by Cable & Wireless and ETPI (C&W-Benedicto) on the Hong Kong and Philippine ends, respectively. In the past 6 years a rapid buildup of international submarine cable and satellite facilities in the ASEAN region alone has brought 9 new cable connections covering 12,072 kilometers and 8400 circuits along with Indonesian "Palapa" satellite coverage of the entire area and all its member states. For the Philippines the rationale of telecommunication expansion was to be development of 12 new export processing zones that would generate new transnational capital and the need for greater international information hookups. As of 1982, however, none of the 3 zones expected to open by 1981 was operational.

The Global Transmitters

In 1973 communication scholar Herbert Schiller wrote that "In many of the less-developed states, the control of internal communications by foreign (generally American) business interests is often overwhelming." By now that would be an understatement. The relative importance of national bourgeois and lower class utilization of the communication system has greatly diminished as international traffic has become the key in Philippine nation-wide communication development. This is spelled out in greater detail in
the following chapter, but suffice it to point out here that the "national model" of communication expansion that the Marcos government technocrats describe is an illusory explanation of the actual foreign capitalization and expanded accumulation of Filipino factors of production, principally labor and non-human resources and spatial access to foreign markets.

The ASEAN cable connections, originally strung together by the British in 19th century England's Australasia company, are currently operated in the Philippines through Cable & Wireless' formal 40 percent ownership in the successor company, ETPI. In addition C&W is part owner of Oceanic Wireless, a Philippine domestic and international carrier in which Western Union International (WUI, now a Xerox subsidiary) once held 20 percent equity. C&W also has a 30 percent shareholding of its Philippine marketing agent, Philippine Consultancy Systems, Inc., run by a British management employee of the parent company. PCSI supplies foreign-made telecommunication equipment to the Philippines and holds the exclusive distributorship for Farinon (U.S.) which provides the microwave equipment for ETPI and PLDT and much of the in-country Philippine and U.S. military requirement. And C&W provides a special interconnect agreement with WUI for the U.S. cable market.

The Philippines is a small but integral segment of the world communication empire that Cable & Wireless helps to manage. The corporation lists 70 overseas branches, engages in all types of
communication enterprises, runs a fleet of 6 cable ships and an engineering college in the U.K. C&W also owns 13 national telephone systems together with 856 satellite circuits and satellite earth stations in Hong Kong, Tonga, the Solomon Islands, and in Banjul, Belize and Bermuda with additional stations planned for Hong Kong and Gibraltar. C&W conducted a training college for the Saudi Arabian National Guard and got a supply contract from the Guard worth L300 million. Also in the works are an Indian Ocean Cable System - in which the corporation is to have a 6 percent investment, the rest shared by co-owners Malaysia, Sri Lanka, Australia, Singapore and Canada - and a cable system connecting Bahrain, Qatar and U.A.E. with C&W holding a 40 percent share. In early 1980 C&W signed an agreement to set up microwave and other telecommunication links in the once unintegrated People's Republic of China.  

Within the ASEAN region the British corporation has a 20 percent interest in the 1840 circuit Phil-Sin cable, was seeking a 6.25 percent ownership in 480-circuit Indonesia-Singapore cable and holds 25 percent of the 480-circuit Taiwan-Philippines cable which was planned to "interconnect with the [at least 40 percent C&W owned] Okinawa-Luzon-Hong Kong Cable (OLUHO) and Phil-Sin Cable systems at the Philippines end."  

Control of the cable system allows C&W to act as a carrier for other carriers, a carrier's carrier, while restricting access of other carriers to its ASEAN connections. Its competitors in the Philippines are ITT's G1obe Mackay and RCA's Philcom.
The scale of ITT is legendary, though in the past few years the corporation has been in a sell-off phase. ITT has 2 operations in the Philippines, ITT/Philippines which sells telecommunications equipment and Globe Mackay for message services. The weight of ITT comes not only as a matter of size; as the world's largest conglomerate its close association to U.S. military and intelligence interests has made it specially formidable in dealing with third world governments. By the 1960s half of ITT's domestic income had come from U.S. government defense and space contracts. And in late 1976 ITT's Defense Communications Division negotiated a $200 million contract with the U.S. Air Force Strategic Air Command "to provide highly responsive and secure communications between the S.A.C. commander-in-chief, the communication links of national authorities and missile and aircraft crew members." ITT's specific role in Philippine military communications is discussed in Chapters 4 and 6.

R.C.A., number 30 on the Fortune 500 in 1978 (the period of our study), is known to the American public primarily as a television manufacturer, broadcaster (N.B.C.-Television) and international telegraph operator but most do not know the company's strategic international military and intelligence functions. Its 1940s cold war affiliations are discussed as part of Philippine "security" arrangements in Chapter 6. More recently NBC International ran the communications system for South Vietnam and continues to provide programming and broadcast equipment for TV
systems all over the world. Its parent has been a major defense manufacturer for military radar, electronic warfare equipment, laser systems, instruments for guiding aerial bombs to targets, hardware for intelligence processing, guidance for surface-to-air missiles and for the Apollo and Skylab spacecrafts. RCA owns or has owned 6 book publishing companies, a documentary film production company, eight radio and five TV stations in the U.S. along with its national network, a record company subsidiary, radio and TV equipment manufacturing, a common carrier system, electronics manufacturing and videodisc production.\textsuperscript{74} RCA together with AT&T, WUI and ITT was one of the original major shareholders of the Communications Satellite Corporation, Comsat, the latter now a partner (with IBM and Aetna Life Insurance) in the supercorporate telecommunications venture, Satellite Business Systems.\textsuperscript{75}

The history of telecommunications has in fact been one of government assisted shifting interlocks among the giants in the industry. General Electric in 1920 bought out British Marconi's North American subsidiary which became part of RCA. In the process AT&T won the exclusive rights to telephone and radio telephone services together with the manufacture of transmission equipment while RCA got the trans-Atlantic service and GE the wireless telegraphy and manufacture of receiving equipment.\textsuperscript{76} RCA was created in 1919 as a joint venture project of the electronics/telecommunications corporations GE, Westinghouse and AT&T under the urging of the Wilson administration which intended it "to provide
the American public with international communications that would be free from foreign control and adequate to meet our needs in war or peace." Five years later RCA won the Philippine franchise for broadcast service and in 1925 bought out a Philippine company, Radio Corporation of the Philippines, which became an RCA subsidiary.77

Management style among U.S. telecommunication TNCs has been marked by frequent crossovers. In recent years RCA president Maurice Valente was previously ITT-Europe president and ITT chairman of consumer goods while Erich Burlefinger from ITT semiconductor in England was appointed in 1980 to head electro-optics power device operations at RCA78 In the Philippines the degree of U.S. intercorporate personnel exchange is also extensive. But perhaps the best example of the maverick American international executive in the Philippines is a non-American. The principal organizer of the Domsat project, John C. Britt, was an England-born Canadian engineer who worked for Cable & Wireless after the War in London and later for G.T.E. Industries in the Philippines before rising in 1970 to vice president for operations in the Philippine Overseas Telecommunications Corporation, the Benedicto-run management group for Philcomsat and Domsat. At P.O.T.C. Britt was "responsible for the operation and maintenance of Intelsat standard earth station, Tanay I" (i.e., the Philcomsat earth station), and "initiated studies on the feasibility of a satellite communications system for the Republic of the Philippines."79 Britt also initiated the Philippine Joint Telecommunications Advisory Board "to plan and
advise the Philippine Government on the total integration of Philippine telecommunications."

Britt had a larger organizational and political role to play as well. He was advisor to ASEAN conferences on the planning of a regional satellite and at the same time represented the Philippines as signatory to the Intelsat Meetings of Signatories and at Intelsat Southeast Asia Group (Philippines, Indonesia and Thailand) meetings. He was technical consultant to PT&T, then a subsidiary of POTC and now the largest domestic telex operator in the Philippines. He advised the Philippines as a consultant for a World Bank pre-investment study on a proposed project using satellite communications for education. And he was a member of the important military-industry organization, the Armed Forces Communications and Electronics Association. When the contract he negotiated for GTE to sell Domsat II earth stations fell through, Britt left the satellite corporation and went over to PLDT for two years, eventually leaving at age 60 to form his own communications firm in Bangkok.30

Interlocking Directorates

However, while U.S. corporate expansion has shown a certain degree of executive mobility, its economic foundations have become increasingly fixed and overpowering. It is well documented that the structure of information in the U.S. at the level of "mass media" is largely a system of interlocks with the largest industrial and
banking/finance corporations in the listings of *Fortune*. One study revealed that the largest newspaper chains "are heavily interlocked with particular newsworthy sectors of the economy" including "38 direct interlocks with the 50 largest banks," and with the largest 25 companies controlling more than half of the daily circulation of newspapers in America. Their boards claim such governmental luminaries as Clark Clifford, former Secretary of Defense (Knight-Ridder chain), William Rogers, former Secretary of Defense (Gannett chain), William Scranton, former U.N. ambassador (N.Y. Times chain) and former Attorney-General Nicholas Katzenbach (Washington Post chain).\(^81\)

The largest U.S. telecommunication corporations are also interlocked with one another, with "mass media" industries and with the largest international banking/finance corporations. As of 1978, according to a U.S. Senate study, RCA had indirect interlocks with AT&T on the boards of Citicorp and U.S. Steel; with IBM on Citicorp, Metropolitan Life and U.S. Steel; with Westinghouse on Citicorp; with GTE on Charter New York Corporation; and with ITT on Pfizer, Inc. ITT interlocked with AT&T on the boards of Chrysler, First City Bancorporation, Southern Railway and U.S. Trust; and with IBM in three corporations. GTE interlocked with both AT&T and IBM on Bankers Trust and Continental Oil; and with RCA on Charter New York Corporation.\(^82\)

Citicorp (in 1981 the world's largest bank) is perhaps the most tightly intertwined banking/finance corporation in
telecommunications. Its direct interlocks include the chairman of AT&T, the deputy chairman of General Electric Ltd., the chairman of Xerox Corporation, a director of RCA, a director of CBS, a director of ABC, a director of GE, a director of Eastman Kodak, two directors of IBM, a director of Westinghouse, and a director of the New York Telephone Company - Bell System's largest subsidiary.83

The four largest stockholders in ITT were all among the largest banks while ITT, in turn, was among the top five stockholders in four of the largest U.S. banking and financing corporations. According to one study, two Rockefeller banks, Chase Manhattan Bank and Chemical Bank, owned one-third of IBM assets, a quarter of AT&T, ITT and Westinghouse and a fifth of RCA, while Morgan bank interests hold two-thirds of the assets of GE, half of IBM and a quarter of AT&T, and the Mellon-First National Boston group has half the assets of RCA.84

In broadcast media the big banks once again formed the underlying network. In television Chase Manhattan by 1972 owned 3.5 percent of RCA, 10 percent of CBS-TV and 8.5 percent of ABC-TV.85 By 1977 at least 8 percent of RCA stock was held by either Chase Manhattan or its nominees in Merrill, Lynch, Pierce, and 8 of its top stockholders were from the big banking/finance sector. Data on stock ownership in the banking/finance sector in turn reveals that this sector's principal owners are the banking/finance sector itself, repetitively interlocked in each other's boards of directors and voting memberships.86
We have seen emerge in this formal superstructure what one scientist, often called "the father of cybernetics" and a man quite removed from the institutional centers of capital, was perceptive enough to recognize as the inherent dangers of concentration in the field of communication. Norbert Wiener warned of a triple constriction on the means of communication: the elimination of the less profitable means in favor of the more profitable; the fact that these means are in the hands of the very limited class of wealthy men, and thus naturally express the opinions of that class; and the further fact that, as one of the chief avenues to political and personal power, they attract above all those ambitious for power. That system which more than all others should contribute to social homeostasis is thrown directly into the hands of those most concerned in the game of power and money, which we have already seen to be one of the chief anti-homeostatic elements in the community.87

Concentric Circles of World Capital

At the global level of telecommunication networks the Europeans and Japanese have made major inroads into what was once a technological domain almost completely monopolized by the United States. An Arthur D. Little study outlined the major transnational participants in the construction of the global communication systems and also indicated that consortia have emerged that crossover from national to cross-national memberships. (See Table III.) Other data indicate that the finance sector is comparably diversified across
### TABLE III

**MAJOR U.S. AND EUROPEAN CONSORTIA SATELLITE SYSTEM SUPPLIERS**

#### U.S. SATELLITE SUPPLIERS:

<table>
<thead>
<tr>
<th>Terrestrial</th>
<th>Satellite Spacecraft</th>
<th>Earth Stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Western Electric</td>
<td>Hughes</td>
<td>Aeronutronic-Ford</td>
</tr>
<tr>
<td>Collins Radio</td>
<td>Aeronutronic-Ford</td>
<td>Comtech Labs</td>
</tr>
<tr>
<td>GTE-Lenkurt</td>
<td>TRW</td>
<td>Collins Radio</td>
</tr>
<tr>
<td>Farinon</td>
<td>Lockheed</td>
<td>GTE International</td>
</tr>
<tr>
<td>Raytheon</td>
<td>GE</td>
<td>GE</td>
</tr>
<tr>
<td>ITT</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### EUROPEAN CONSORTIA SUPPLIERS:

<table>
<thead>
<tr>
<th>Consortium</th>
<th>Corporate Headquarters</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. MESH</td>
<td></td>
</tr>
<tr>
<td>Hawker Siddeley Dynamics</td>
<td>U.K.</td>
</tr>
<tr>
<td>Matra</td>
<td>France</td>
</tr>
<tr>
<td>Erno</td>
<td>West Germany</td>
</tr>
<tr>
<td>Saab-Scania</td>
<td>Sweden</td>
</tr>
<tr>
<td>Aeritalia</td>
<td>Italy</td>
</tr>
<tr>
<td>Fokker-VFW</td>
<td>Netherlands/W. Germany</td>
</tr>
<tr>
<td>AEG-Telefunken</td>
<td>West Germany</td>
</tr>
<tr>
<td>Selenia</td>
<td>Italy</td>
</tr>
<tr>
<td>INTA</td>
<td>Spain</td>
</tr>
<tr>
<td>TRW (consultant)</td>
<td>U.S.</td>
</tr>
<tr>
<td>2. COSMOS</td>
<td></td>
</tr>
<tr>
<td>MBB</td>
<td>West Germany</td>
</tr>
<tr>
<td>GEC-Marconi</td>
<td>U.K.</td>
</tr>
<tr>
<td>Siemens</td>
<td>West Germany</td>
</tr>
<tr>
<td>SNIAS</td>
<td>France</td>
</tr>
<tr>
<td>STS</td>
<td>Italy</td>
</tr>
</tbody>
</table>
3. **STAR**

<table>
<thead>
<tr>
<th>Company</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thomson-CSF</td>
<td>France</td>
</tr>
<tr>
<td>British Aircraft Corp.</td>
<td>U.K.</td>
</tr>
<tr>
<td>Dornier</td>
<td>West Germany</td>
</tr>
<tr>
<td>Fiar</td>
<td>Italy</td>
</tr>
<tr>
<td>Fokker-VFW</td>
<td>Netherlands/W. Germany</td>
</tr>
<tr>
<td>AEG-Telefunken</td>
<td>West Germany</td>
</tr>
<tr>
<td>LM Ericsson</td>
<td>Sweden</td>
</tr>
</tbody>
</table>

national lines. 88 This diversification is of little if any advantage to the third world recipients of advanced telecommunication technology since the lack of equipment standardization among most of the system suppliers puts the former into a position of demand-side dependency as the latter monopolizes the sellers market. The Arthur D. Little study adds:

For the present, there are no rigid equipment standards in any countries, [sic] except for those covering the interface between the satellite system and the established terrestrial network. The lack of standards permits considerable latitude and flexibility to the system supplier, and provides him a distinct advantage over competitors for sale of future additions to a system he has installed.89

As the study also indicates, there may be antagonistic conflicts within the capitalist state sector engendered in this "segmentation" of the market that would "inhibit competition for major additions to previously installed systems." In the long run this could injure the U.S. role in capital production as other foreign suppliers capture the next generation of advanced systems. In the aerospace industry, for example, the European manufacturers divide into three major cross-national consortia with little U.S. participation (see Table III), while the communication satellite industry (Intelsat) includes the trilateral states still led by four U.S.-based corporations. (See Table IV.) The "Palapa" domestic satellite system in Indonesia, which provides the space segment of the Philippine domestic satellite system, is a U.S.-dominated
<table>
<thead>
<tr>
<th>Consortium</th>
<th>Corporate Headquarters</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRW (leader)</td>
<td>U.S.</td>
</tr>
<tr>
<td>AEG-Telefunken</td>
<td>West Germany</td>
</tr>
<tr>
<td>Erno</td>
<td>West Germany</td>
</tr>
<tr>
<td>Matra</td>
<td>France</td>
</tr>
<tr>
<td>Hawker Siddeley Dynamics</td>
<td>U.K.</td>
</tr>
<tr>
<td>Selenia</td>
<td>Italy</td>
</tr>
<tr>
<td>INTA</td>
<td>Spain</td>
</tr>
</tbody>
</table>

**vs.**

<table>
<thead>
<tr>
<th>Consortium</th>
<th>Corporate Headquarters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lockheed (leader)</td>
<td>U.S.</td>
</tr>
<tr>
<td>AEG-Telefunken</td>
<td>West Germany</td>
</tr>
<tr>
<td>TeIdix</td>
<td>West Germany</td>
</tr>
<tr>
<td>GEC-Marconi</td>
<td>U.K.</td>
</tr>
<tr>
<td>SAT</td>
<td>France</td>
</tr>
<tr>
<td>SAFT</td>
<td>France</td>
</tr>
<tr>
<td>Thomson-CSF</td>
<td>France</td>
</tr>
<tr>
<td>FIAR</td>
<td>Italy</td>
</tr>
<tr>
<td>Mitsubishi</td>
<td>Japan</td>
</tr>
<tr>
<td>RCA Ltd.</td>
<td>Canada</td>
</tr>
</tbody>
</table>

**vs.**

<table>
<thead>
<tr>
<th>Consortium</th>
<th>Corporate Headquarters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aeronutronic Ford (leader)</td>
<td>U.S.</td>
</tr>
<tr>
<td>GEC-Marconi</td>
<td>U.K.</td>
</tr>
<tr>
<td>MBB</td>
<td>West Germany</td>
</tr>
<tr>
<td>Selenia</td>
<td>Italy</td>
</tr>
<tr>
<td>SNIAS</td>
<td>France</td>
</tr>
<tr>
<td>Mitsubishi</td>
<td>Japan</td>
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</tbody>
</table>

**vs.**

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<tr>
<th>Consortium</th>
<th>Corporate Headquarters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hughes (leader)</td>
<td>U.S.</td>
</tr>
<tr>
<td>Others (not named)</td>
<td></td>
</tr>
</tbody>
</table>

consortium arrangement. RCA, ITT and GTE in at least a formal sense are competitive in this satellite consortium.

In the Philippines these three telecommunication giants have been among the major agents of transnational communication/information transfer. However, they have had to trade certain concessions to maintain that privilege. Responding in part to the current of nationalism demonstrated daily in the streets of Manila on the eve of the martial law declaration, Marcos seized power and immediately extended the late 1960s Investment Incentives Act to the area of communications which among other things forced the sale of 60 percent of the international communication carriers stock (as per the 60-40 equity stipulation) to the same circle of local business/political allies who had taken over the "mass" media. However, in responding to these new equity requirements the two U.S. international carriers, like their British counterpart, C&W, acted prudently in sharing their corporate aegis. ITT-Globe Mackay's major business partner is the oldest, most established and financially extended elite family in the Philippines, the Ayala-Zobels, who have substantial holdings in at least 60 major firms including joint venture arrangements with such TNCs as Mitsubishi, Royal Dutch Shell, Morgan Guaranty & Trust Co., Connel Brothers, Citibank N.A., Wells Fargo and ITT's domestic trading and manufacturing subsidiary, ITT/Philippines. The Ayala-Zobels are considered by many industrial and governmental management officers to be a rival to the wealth of the President himself which has
implications for the current power struggle among competing elites.\textsuperscript{91} Globe Mackay's current board chairman is Jaime Zobel de Ayala and its president is a longtime American ITT executive, George H. Hunter.

As a result of their long (since 1928) and stable position in the Philippines, ITT has been able to capture some of the most strategic telecommunication contracts in the Philippines. These include operation of the telephone system in the Bataan export processing zone; the electronic telephone systems in the Philippine National Assembly, the Philippine International Conference Center, and in 8 major hotels in Manila; the Baguio City telephone system; the international communication system of the Philippine Navy and the government's Philippine National Bank; the automated system for the country's largest private banking institution, the Bank of the Philippine Islands (Ayala-controlled); the telephone system for Olongapo City (home of the U.S. naval base at Subic Bay); the National Manpower Youth Council electronic telephone system; and communications for the Consolidated Bank & Trust Co. (interlocked with Chase-Manhattan), the Puerto Azul tourist estate and the (Westinghouse) Bataan nuclear power plant.\textsuperscript{92}

RCA's holdings include Air Mac Philippines (outdoor machinery), RCA Philippine Communications Corporation, both registered as domestic corporations, RCA Global Communications, Inc. which is a "foreign corporation" and Philcom which is 40 percent owned by RCA.\textsuperscript{93} Philcom has roughly an equal footing with Globe
Mackay in record communications and in addition exclusively handles the telephone traffic to five areas: Japan, Australia, Korea, Guam and Thailand. Nominally headed by the former ambassador to the U.S., Ernesto V. Lagdameo, the principal stockholders, according to the company's top Filipino executive, are Defense Minister Juan Ponce Enrile and Energy Minister Geronimo Z. Velasco. The management of Philcom, however, is handled by the American executive vice president and general manager, John Feely, who is also an officer of the parent company and frankly concedes to being "an executive wearing two hats."95

Enter the Germans

The key figure in Philippine voice communications is Ramon Cojuangco, whose family is widely regarded as belonging to the Marcos inner-circle and whose personal investments are listed as worth over P2 billion ($250 million). He is president and principal equity holder in the Philippines Long Distance Telephone Company and is chairman of and a major stockholder in Domsat. Cojuangco competes with 67 much smaller telephone entities but controls 85 percent of the country's domestic telephone services. By 1975 PLDT was the country's third biggest net earner, had P3 to 4 billion in assets, and in 1979 - a year of economic decline in the Philippines - sales and income were up 19.4 and 10.2 percent,
respectively. PLDT provides local, long-distance and
international lines, but the greater proportion of its increased
revenues has been generated by its monopoly over overseas calls
(largely to the U.S., Japan and Canada), which went up in 1979 by 25
percent.

In international communications PLDT controls terrestrial
microwave connections for Philcomsat and is a partner with AT&T in
the Guam-Philippines TRANSPAC (TPC-1) cable system built in 1964,
linking Manila to the U.S. and other Pacific destinations. Of the
142 circuits allocated on the submarine cable system as of 1980, 97
percent belong to foreign or joint venture carriers. (See
Table V.) The cable system manufacturers were Standard
Telephone & Cables Ltd. (ITT British subsidiary), Western Electric
Co. (AT&T subsidiary) and Ocean Cable Co. (Japanese). Domestic
terrestrial connections to and from every Domsat ground station in
voice, video, record and data communications is also provided by
PLDT. As part of a national integration plan Marcos ordered in 1980
the merger of Republic Telephone Company (Retelco), the country's
second largest telephone entity, with PLDT which put Cojuangco at
the helm of still a larger communication network.

Together with its terrestrial-space hookup to the two
satellite entities, Domsat and Philcomsat, PLDT is dependent for its
greatly expanded traffic to and through Asia on the cables of ETPI.
Interlocking directorates, in turn, link PLDT to four major U.S. and
Japanese TNC joint venture banks, to ITT-Globe Mackay, to
### TABLE V
TRANS-PACIFIC CABLE I
(PHILIPPINES-GUAM)

**Circuit Allocations**

<table>
<thead>
<tr>
<th>RCAGC</th>
<th>PLDT</th>
<th>ATT</th>
<th>HTC</th>
<th>ITTWC</th>
<th>KDD</th>
<th>WUI</th>
<th>GMCR</th>
<th>PGC</th>
<th>ITA</th>
<th>ETPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATT</td>
<td>--</td>
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</tr>
<tr>
<td>PLDT</td>
<td>--</td>
<td>4</td>
<td>36</td>
<td>12</td>
<td>3</td>
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<tr>
<td>RCAGC</td>
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</tr>
<tr>
<td>ITTWC</td>
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<td>--</td>
<td>2</td>
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<td>--</td>
<td>8</td>
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<tr>
<td>KDD</td>
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<td>--</td>
<td>--</td>
<td>--</td>
<td>8</td>
<td>--</td>
<td>4</td>
<td>15</td>
<td>--</td>
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<tr>
<td>PGC</td>
<td>--</td>
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<td>6</td>
</tr>
<tr>
<td>ETPI</td>
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<td>--</td>
<td>1</td>
</tr>
<tr>
<td>ITA</td>
<td>1</td>
<td>--</td>
<td>12</td>
<td>1</td>
<td>1</td>
<td>--</td>
<td>--</td>
<td>1</td>
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</tr>
</tbody>
</table>

**Code:**
- RCAGC: RCA Globecom (U.S.)
- PLDT: Philippine Long Distance Telephone Co. (Philippines)
- ATT: ATT (U.S.)
- HTC: Hawaiian Telephone (U.S.)
- ITTWC: ITT Worldcom (U.S.)
- KDD: Kokusai Denshin Denwa (Japan)
- WUI: Western Union International (U.S.)
- GMCR: Globe Mackay (U.S.)
- PGC: Philippine Globecom (U.S.)
- ITA: International Telecommunications Administration (U.S. Gov't.)
- ETPI: Eastern Telecommunications (U.K.)

RCA-Philcom and to large American-owned insurance companies operating in the Philippines.102

The most important PLDT connections to international capital have been through GTE. Started in 1928 under American management, PLDT was almost totally decimated during the Pacific War and not until 1953 did it recover its pre-War scale. GTE bought out the British Columbia Telephone Company in 1956 which then owned PLDT and acquired the Philippine company in the deal. Because of the slated 1974 expiration of the Laurel-Langley agreement, the post-War magna carta for U.S. business in the Philippines, GTE decided to begin divestment of its PLDT stocks starting in 1967.

GTE, however, was able to work out a 15-year (1966 to 1981) supply contract to the Philippine company. But in 1976 to 1977 the U.S. Security and Exchange Commission exposed illegal GTE payoffs in 27 countries, one of which provided the Cojuangco-led PLDT group with interest-free "secret commissions, credits and uncollected loans" worth $4.5 million plus a 40 percent interest in GTE/Philippines as conditions for favorable government tax treatment and $20 million in sales of GTE telephone equipment. Prior to the SEC report, GTE held almost $15 million in common and preferred PLDT stock which the U.S. company thereafter agreed to sell to the Cojuangco group as well as terminate the supply contract. By 1978 GTE still owned most of the 17 percent of foreign equity in the Philippine company.103
As a consequence of the scandal, PLDT shifted its business interests to other transnational partners. In 1977 PLDT began a major expansion of its telecommunications system with a $56 million contract to the Siemens Corporation of the F.R.G. By 1979 Siemens had won a hefty $544 million in new contracts for electronic switching equipment that was to supply 220,000 lines by 1982. According to top PLDT executives, the financial package, consisting of $105 million in loans in 1977 and $307 million in 1979, provided by the Germany-based European-Asian Bank consortium and led by the American Chase-Manhattan Bank, was the first of its size secured without Philippine government guarantees. PLDT's top planning executive claimed it was Siemens' financial package that won them the major contract, although a GTE vice president insinuated that it was U.S. government scrutiny over extra-legal payments - practices not so carefully monitored in Europe or Japan - that was the key factor in the bidding. GTE, meanwhile, became the main supplier of PLDT-type radio and switching equipment to PLDT's principal rival telephone company, Retelco. The PLDT planning executive says these sales violated prior agreements between PLDT and the U.S. corporation.

The new PLDT-Siemens agreements represent an end of the near monopoly of the U.S. in a strategic sector of the Philippine economy. Responding to the complaints by TNCs for better telephone services, Marcos' next step was to force the sellout of Retelco's older GTE exchanges to PLDT. For GTE this all but closed its
Philippine operations and surrendered Manila as "Siemens country."
Although no single third world market is crucial to any of the big
telecommunication TNCs, the Philippines does represent a good catch
for Siemens. The third largest telecommunications corporation and
the 20th largest industrial firm in the world, Siemens has
investments in 129 countries, telecommunications being only one of
its multifarious business activities. The German corporation's
sales, which reached $15.6 billion by 1978, were also derived from
instrument manufacture, cables and lamps, railway signal systems,
fiber optic systems, teletypers, data systems, installation
hardware, electronic components, electric power equipment, dental
and medical equipment and vacuum cleaners. Siemens has branched
into building nuclear power plants and a whole line of military
electronics (the largest such enterprise in the F.R.G.) for tanks
and vessels, rockets, aircrafts and helicopters. 106

Siemens is one of the fastest rising transnational
corporations in western Europe, with 319,000 employees is the
region's third largest employer (behind Philips and Unilever),107
and has become perhaps the most important competitor to the world's
biggest industrial conglomerate, ITT. In the Federal Republic of
Germany Siemens has the status of premier private corporation in
turnover and employment, assets, and profit, and it also enjoys the
country's greatest state subsidies.108

Europe's telecommunication goliath interlocks with many
large corporations in the O.E.C.D. states through major financial
participation in more than a dozen U.S. enterprises including Litronix (owned), Allis-Chalmers (joint venture), General Numeric (joint venture) and Rockwell (technical agreements); in Holland with Philips (Polymedia, a joint subsidiary); and in Japan with Fuji-Electric (joint venture) and Fujitsu (joint venture). According to one European study, "Siemens is very active[ly] involved in a long row of formal international cartel agreements, and informal international oligopolistic 'understandings' on the world market level connecting all the world's leading corporations in the highly internationalized electrical industry since the earliest days of this sector." Another study, however, points out that the U.S. still dominates world electronics with over 50 percent ownership of Europe's semiconductor industry and 80 to 90 percent of its technology. And while American satellite plants are found throughout western Europe, they operate "with design and innovation kept securely in the U.S." Nonetheless, Siemens continues to expand transnationally with half of its 1978 sales from international business, 25 percent of its revenues generated from German-manufactured projects sold abroad and a total of 75 percent of its revenues from international operations. Siemens owns 55 foreign factories and major holdings in 26 others. Outside of Europe and the U.S. its biggest foreign investments are in Brazil and in South Africa, where it assisted the apartheid government's military weapons "Project Advocaat/Silvermine." And like its U.S. counterparts, Siemens has been
involved in F.R.G. controversies concerning illegal cartel practices which led to investigations by the German Federal Trade Commission.110

A large proportion of Siemens' plant capacity, 25 percent, has steadily moved abroad, with 14 manufacturing subsidiaries by late 1977 having found their way to the cheap labor markets of Asia:

- Gold Star Tele-Electric Co., Korea (25 percent owned)
- Telephone Industries of Pakistan (17%)
- Sherkate Sahami Aam Iron-Transfo, Iran (22%)
- Iranian Telecommunications Manufacturing Co., Iran (40%)
- Siemens Sherkate Sahami, Turkey (97%)
- Siemens Pakistan Engineering Co., Ltd. (52%)
- Siemens India Ltd. (51%)
- Cable Corp. of India (18%)
- Turk Siemens KabIo ve Elektrik Sanayii AS, Turkey (52%)
- Simko Ticaret ve Sanayii AS, Turkey (51%)
- Siemens Components Private Ltd., Singapore (100%)
- Siemens Components Sdn. Bhd., Malaysia (100%)
- P.T. Siemens Indonesia (100%)

and its Southeast Asian regional headquarters,

- Siemens AG, Philippines (100%).111

Controlling Information Long Distance

While indicative of a declining hegemony over the Philippines by the United States, there is no less foreign control operating in financing, manufacturing and management. The last category is somewhat deceptive inasmuch as one sees fewer foreign faces in the suburban Manila TNC offices these days. With reliable satellite, submarine cable telecommunications and their accessory
telex, data transmission, electronic telephone linkages and software items in place, there is less reason to maintain overseas management. At a symbolic level this appears to grant concessions to Philippine nationalism and does in fact to a greater extent bring Filipinos into higher management positions. But there is little to suggest real communication technology transfer at the level of "hardware" or "software" inasmuch as Filipinos readily admit that they themselves refuse to "tamper" with turnkey computer-based artifacts, thus further postponing the full certification of domestic talent and technology. And at the management level the concentration of corporate power internationally as well as in the U.S. domestically at a time of recession makes reasonable the forms of social adjustments enacted to keep the world capitalist system afloat.

What we find significant then is not so much the U.S. gradual withdrawal from its hegemonic position in telecommunications, by no means yet a symmetrically "trilateral" arrangement, but rather the ways in which the movements within the information order appear to correspond to the currents among the leading capitalist member states. We have documented the participation of U.S., Japanese and European, mainly British and German, capital in the information sector. The defeat of the U.S. in Indochina and the crisis of production catalyzed by the "energy crisis" put the U.S. as leading power in a vulnerable position. The ITT involvement in the overthrow of an elected socialist in Chile at
the same moment lifted the cover on the role that U.S. TNCs were potentially getting accustomed to and no doubt alarmed even its closest allied governments. The exposes of payoffs and other manipulations weakened U.S. participation in the Philippine information sector in this way, but, more importantly, opened up, again as a catalyst, the telecommunications sector to a competitive European and Japanese capitalist sellers market.

The opening afforded to Philippine investors, a small in-group of Marcos trustees, strengthens their situation at the same time. If information is the lifeblood of contemporary capitalist domination, then the TNCs and other protagonists of world capitalism could probably not find more loyal and cooperative partners than the Cojuangco and "BAN" groups. The hoopla drummed up by the KBS-TV satellite extravaganzas, domestic and international, certainly caters to an historical popular identification with local and international media heroes and heroines and does so in a regulated atmosphere that treats any efforts to portray Filipinos in social and economic hardship as "subversive." The print and radio media are likewise restricted to a formula of sentimental songs and "new society" news and advertising for commodities produced by TNCs and licensed joint venture subsidiaries. As long as people are mystified by and identify with projected images of "western life style," the close association through joint ventures of foreign and domestic elites in the information (ideological) sector will remain unchallenged. This form of hegemony is a powerful instrument for
legitimizing the present power structure, one that benefits by and is therefore firmly committed to intensive foreign investment and protection, including high technology inputs, and to the capitalist integrationist model on which it is based.
NOTES TO CHAPTER THREE


2. William J. Pomeroy, American Neo-Colonialism: Its Emergence in the Philippines and Asia (New York: International Publishers, 1970), pp. 155-162. Pomeroy's argument essentially is that the U.S. seizure of the Philippines was to block Japan from doing it first. This interpretation is vociferously contested by the chairman of the (new) Communist Party of the Philippines who sees it as a failure to address the inner dynamics of capitalist expansion and as an attempt to portray the U.S. as an 'accidental' colonizer. Amado Guerrero, Pomeroy's Portrait: Revisionist Renegade (n.d.: Revolutionary School of Mao Tsetung Thought, 1972), pp. 151-174.

3. Pomeroy, American Neo-Colonialism, chapters 8 and 9.

4. The Payne-Aldrich tariff act of 1909 which enacted "free trade" allowed, among other consequences, Americans to rush in and buy up the best sugar lands and bring in duty free goods. Ibid.


13. Jiggetts, "Evolution of Military Communications," p. 21-20, indicates that the Philippine military connection was part of a wide U.S. DCA network including the 1962 "Backporch" (troposcatter for south Vietnam and Thailand), 1965 "Talk Quick" (secure voice - Pacific), "Wetwash" (microwave, submarine cable, troposcatter from the Philippines to Vietnam and intra-Vietnam), Southeast Asia Automatic Telephone Service (south Vietnam and Thailand) and many other linkages in the region.


17. Domsat, Memorandum to President Marcos, February 8, 1974.

19. Daniel Lerner, "Toward a Communication Theory of Modernization: A Set of Considerations," in Communications and Political Development ed. Lucien Pye (Princeton, N.J.: Princeton University Press, 1963), pp. 341-342. Lerner envisioned the world as dualistic: the modern and the traditional worlds. Given the U.S. lead in the modern world, Lerner followed with a supportive linear theory of development, suggesting that special national attributes (such as commitment to justice) were responsible for the material progress of the west. Those who challenged the western capitalist, i.e., the "civilized," model he viewed as "extremist" as he so labeled the Mossadegh government in Iran, for example. He saw Mossadegh as pro-U.S.S.R., that is to say motivated not by development interests but by opportunism. Lerner's most important work of the cold war period is The Passing of Traditional Society: Modernizing the Middle East (New York: The Free Press, 1958).


21. Ibid., p. 115.


25. Business Day (Manila), February 7, 1973. Tatad also cited Lucien Pye as an authority in claiming that "mass communications... is the principal medium of a developing society... in awaking the people to 'new ideas and to the


33. Interview, Butel chief of planning.


35. See "Some are Smarter than Others," a who's who of the Philippine economic elite circulated in late 1979 by a group


49. Philippines, Office of Executive-Secretary, Inter-Agency Committee on Telecommunications, Policy Study on the Telecommunications Industry, July 29, 1974.

50. Under presidential Decree 947, Domsat began leasing 1 1/2 spare channels (transponders) from the Indonesian domestic "Palapa" satellite after initially pursuing an interest in Intelsat. Its Standard B earth stations are capable of accessing both the Palapa and Intelsat-IV series satellites.

51. Philippine Daily Express, August 26, 1977; and interview with Domsat planning executive, Manila, October 8, 1979.

Data include original, relay and replay TV stations of KBS, GTV and BBC. A fourth TV network, IBC, also operates out of the RPN facilities. IBC has 12 TV and at least 18 (IBC and Radio Mindanao Network) radio stations. See Audit Council for Media, Media Information Philippines (Manila: n.d., ca. 1979), pp. 28-37; and Philippines National Media Production Center and Pathfinder Fund, Communicators in the Philippines (Manila: 1975), P. 216.

Philippine Daily Express, September 12, 1978; and ETPI, "ASEAN Philippine- Singapore Cable System," a brochure published in Manila, ca. 1979. The Philippines plans to lay a cable with Thailand, and Thailand will have a cable connection with Malaysia; Malaysia with Singapore; and Singapore with Indonesia.


By 1975 Japan had replaced the United States as the biggest annual foreign investor in the Philippines.


Cited in "Some Are Smarter than Others."

Interview with ETPI executive, Manila, February 22, 1980.

ETPI, "ASEAN Philippine-Singapore Cable System." Presidential Decree No. 66 aborted a movement underway in the

62. According to its Philippines, SEC, Financial Statement, 1975, 70 percent of Domsat stock was held by the Benedicto group (including his co-investors in RPN) and 30 percent by the Cojuangco-PLDT group.


65. In early 1979, for example, the lease charge per duplex channel (circuit) per month from Manila to Davao was P22,630 while a PLDT microwave circuit was P15,000.

66. **Bulletin Today** (Manila), January 15, 1980. The inaugural TV programs broadcast were (1) News, (2) National Cheerleaders Championship (U.S.), and (3) W.B.A. Heavyweight Championship boxing event. Cojuangco, the other power in domestic telecommunications, has close family connections through his wife to Imelda Marcos and is one of the leading financial families in the Philippines with over P2 billion in assets.


78. Electronics, July 31, 1980.


80. Ibid.


83. Ibid.

84. Mattelart, Multinational Corporations, pp. 10-11.


88. CDE, Stock Ownership, pp. 33 et passim.


93. Tiglao, "The Impact of Transnational Corporations."
94. Interview, Honolulu, December 5, 1980.

95. Interview, Manila, February 11, 1980.


102. Doherty, A Preliminary Study, pp. 5, 96-97; and Tiglao, "The Impact of Transnational Corporations."


107. Fortune, "Siemens Starts Second - But Finishes First," April 10, 1978, p. 59; TIE points out, however, that despite the expansion of Siemens, its domestic employment was reduced from 234,000 in 1971 to 207,000 in 1975 and sees this as part of a trend toward massive layoffs in electronic technology industries. See TIE, pp. 4-5.

108. TIE, p. 3.

109. Ibid., p. 4; and World Business Weekly, October 29, 1979, p. 10.

110. Dunn, How Fifteen Transnational Corporations, p. 41; and TIE, pp. 4-5.

111. TIE, p. 5; International Metalworkers' Federation, "The World Electrical and Electronics Industry with Special Reference to Asia," conference report, Geneva, October 24-26, 1978, p. 46; and Tiglao, "The Impact of Transnational Corporations."

The choice of "state of the art" communication technology in the Philippines, as we have seen, derives both from historical linkages (including the "developmentalist" training of the planners) and from contemporary conscious efforts to attach the future to the patronage of the transnational corporations. Marcos' conversion to global village theory has helped set up the agenda for cooperation among the state apparatus, the transnational corporations, funding agencies and commercial banks, the military, and local capital in the transfer of infrastructure technology for intracorporate communications. In setting up the export processing zones (EPZs), Marcos, along with many other third world rulers, has explicitly endorsed the world capitalist model of export-oriented production. The director of the National Economic and Development Authority in the Philippines claimed that this direction was aimed at in order to push the country into rapid growth patterns of other semi-peripheral economies:

With the new setting for development, with the attractiveness we have already set for the country
as a new model for foreign investments, and with the expansion of opportunities for domestic investments, our country will have the makings of a new economic miracle in Asia.¹

And although telecommunications technology is not among the country's 11 priority industrial projects, Communications Minister Jose Dans has declared the government's intention to help rapidly build up the sector a few years down the road.²

The Philippine government's plan for integrating the telecommunication system includes phasing out its own commercial participation in favor of the private sector. Dans has talked of achieving integration by means of a single system that would help facilitate the development of private capital. And it has been made quite explicit that the overall thrust of economic development favors foreign investment in "non-traditional" export enterprises which require a communication network to support them. Dans has responded to complaints of poor communications in the EPZs by promising to bring the system into conformity with world standards.³

The long term applications of communication technology will depend in part on the ability of the smaller firms to resist the government's integration plans which, according to the president of the Philippines' largest private electronics association, PETEF, means opposition to monopolization by the Benedicto and Cojuangco groups.⁴ The regulatory National Telecommunications Commission has shown little inclination to impose restraint on private
monopolization. Its chief planning officer conceded that the most influential members of the Commission's 25-Year Plan drafting team were all from the largest private carrier groups: PLDT (Cojuangco group), ETPI (Cable & Wireless' Maurice Bane), RPN (Benedicto group), and the American carriers RCA-Philcom (RCA's John Feely) and ITT-Globe Mackay (Ayala group). And Dans' 3-man communication policy consultancy group includes the vice presidents of PLDT and ITT/Philippines representing domestic and global private monopoly interests in telecommunications.

By early 1982 it was becoming clear that Dans and TNC investors were beginning to get their way as far as integrating diverse economic units of communications into a monopoly ("single backbone") telecommunications network. Domestic (i.e., all Filipino-equity) firms such as PT&T (a sister company of Retelco) were absorbing other domestic record communication firms (RCPI) while PLDT was buying out the telephone enterprises (e.g., Retelco). The eventual opening of the National Assembly (Batasang Pambansa) under Marcos' firm party (Kilusan ng Bagong Lipunan) control nonetheless did create a forum for smaller operators to contest Dans' single-handed moves toward "integration" and forced the issue back to the Assembly.

However, Marcos' largely uncontested prerogatives in determining the course of the country's development has become fixed after 17 years in office, including nine years of constitutionally-binding martial law decree making powers, and clearly he has
supported the private monopoly position in telecommunications. The opposition to PLDT's consolidation of telecommunications have also invoked the Constitution (Article XIV) which puts the right to "regulate or prohibit private monopolies when the public interest so requires" and when "in the interest of national welfare or defense, [to] establish and operate industries and means of transportation and communication" through the instrument of "The State." What the Constitution abstractly refers to as "The State," however, has had a historical significance for Filipino politicians and businessmen of arrest, detention and physical coercion. For reasons related to the pursuance of a global production model (discussed in Chapters 5 and 6), Marcos has deferred to external sources of investment/financial/technical support and of technocratic guidance. In the previous chapter we discussed the constituents of the investment/financial/technical sectors. We now turn to a consideration of who uses the national telecommunication infrastructure.

**The Means to Communicate**

Communication access is explicitly based on the "ability to pay" principle. The original rationale for the Philippine domestic satellite was clothed partially in educational objectives, but after more than four years of satellite operation there are no functioning
school applications and the government supports only a modest radio education proposal that has had difficulty securing World Bank funding on which it is dependent.9 (See Chapter 5.)

As a result, Domsat's only two important customers in early 1980 were PLDT and RPN.10 PLDT, in turn, reports that its principal long-distance clients are the international banking interests, and its main satellite (i.e., Philcomsat, of which PLDT contributes about 70 percent of the business) users are the San Miguel conglomerate (25 percent foreign owned), international banks and the foreign tire companies. Business overall generates between 60 and 70 percent of PLDT revenue.11 For RPN its high commercial television advertising rates allow the airwaves to be dominated by TNC sponsors, the top ten of which are mainly high ranking transnational corporations or local subsidiaries. (See Table VI.)

Commercial sponsorship in the media is only a small part of the overall aspect of dominance. Television broadcasting, for example, which is expanding in the Philippines, reaches primarily into middle and upper class households, and, while difficult to quantify, almost certainly inculcates certain foreign values. Programming, including local imitations, favors Western escapist, sexist or police authority themes which help to reinforce these values at home.12 From the Japanese set manufacturing to the American action shows, television has penetrated a central part of Filipino life.
### TABLE VI

**MAJOR SPONSORS OF RADIO PHILIPPINES (TV) NETWORK**

(Top Ten)

1. Philippine Refining Company (Unilever, U.K.)
2. Proctor & Gamble (U.S.)
3. Colgate-Palmolive (U.S.)
4. Consolidated Foods Corp. (U.S.)
5. Filipro (Nestle, Switzerland)
6. San Miguel (U.S.)
7. Persi Corp. (U.S.)
8. Radiowealth (U.S.)
9. Johnson & Johnson (U.S.)
10. Banco Filipino (Philippines)

Also, all of the "domestic" set manufacturers are joint venture arrangements with Japanese or U.S. companies, with almost all of the electronic components imported. This technology provides an average of 573.5 hours of weekly broadcasting, 58 percent of which, mostly prime-time, is foreign, largely canned American series like "Charley's Angels" and "S.W.A.T." or a few Japanese cartoon programs. Four of the five networks are fully commercial and the fifth, G.T.V., a single, partly government-owned Manila station (with the weakest signal), caters to the affluent, western-educated sector. The evening segment was taken over by Benedicto's RPN commercial broadcasting company shortly after the station went on the air in 1974. 13

Apart from "entertainment" (or as part of it), broadcasting, like other media, serves important ideological functions: political remolding, promoting consumption values and providing pressure release through escapism and fantasy. The purpose of television news, which was explicitly laid out by the Department (now Ministry) of Public Information and to which stations strictly adhere, is to help legitimize the existence of the dictatorship. Department Order Number 1 on September 25, 1972 stated that TV was to "broadcast accurate, objective straight news reports of the government to meet the dangers and threats that occasioned the proclamation of martial law, and the efforts to achieve a 'new society'. . . ." (Emphasis added). The RPN expansion plan of 1972, however, justified itself in its financial statements in terms of providing a foreign
entertainment format of such cultural fare as "Hogan's Heroes," "Rowan and Martin," "Jimmy Swaggart Show," "Chicago Teddy Bears," "The World of Jason King," "The Steve Allen Show," and other non-controversial programs. By 1974 RPN was producing 7000 hours of TV programs for its 3 networks (KBS, BBC and GTV) of which 77 percent was imported.14

As one writer on television as socialization, Jerry Mander, has argued, these media products are anything but the effects of a "neutral technology." TV watching is not merely a window on the world but rather a careful selection of messages to promote consumer consciousness and identification with the well-to-do both in the programs and accompanying advertising. Mander says that "Television was the greatest delivery system for advertising that had ever been invented."15 Another writer discussing a TNC cultural invasion in Colombia, similar to that of the Philippines, points out that only television programs, nominally under domestic control, that support the advertising dollar will be broadcast.16 In the Philippines the biggest advertising agencies include the TNCs, J. Walter Thompson, Ace Compton, Grant Advertising and McCann-Erickson.

One thing obvious about the list of RPN sponsors is the familiarity of brand names with which they are associated, in the Philippines and globally. In connection with an instantaneous satellite delivery system ready to provide direct broadcasting from the capitalist centers, for which it has been used to promote such events as international beauty contests, championship boxing events
and U.S. space conquests, telecommunications both as infrastructure and as superstructure also helps establish the legitimating framework for incorporating these events into third world (or first world) consciousness as "significant." What is rendered as fundamentally significant is the underlying theme of transnational corporate power as the active creator of social reality. Armand Mattelart sees this phenomenon in the third world as particularly captivating, mystifying reality through a depoliticized ideology:

Technology propagates a context and puts itself in place of ideological programs and slogans thereby eliminating antagonistic class interests. This is the neutral space of apoliticalism. Understood in this way, this new fetish presents us with a pseudo-actor, promoted to the rank of agent of social processes and phenomena, which hides equally effectively both the identity of its manipulators and the functionality of the ideas and images which these manipulators spread on behalf of the social system which they support.17

Large scale commercial concentration also characterizes radio broadcasting. Next to the Voice of America (1000 KW), the most powerful frequencies are:

* RPN (Benedicto enterprise, 50 KW in Manila)
* Radio Veritas (foreign religious, 50 KW)
* Far East Broadcasting Co. (foreign religious, 50 KW)
* The National Media Production Center (Philippine government, 50 KW)
* The State-run University of the Philippines (Manila, 50 KW)
* The U.S. Armed Forces station in Subic Naval Base (25 KW)18
But RPN's radio hookup is nationwide which offers a wider audience and lower advertising rates, especially for outer-Manila audiences of whom the vast majority are peasants. Of the country's 257 stations in 1978, 86 percent were commercial and 83 of the stations were owned by 5 people - Benedicto's RPN the largest. Of the 123 members of the Philippine Association of National Advertisers who use the airwaves, about 75 percent are TNC affiliates. And according to the regulatory Broadcast Media Council, radio programming is "predominantly entertainment" - soap operas, foreign music and personality shows - with little attention given to news or education. The government Voice of the Philippines, enchartered with broadcasting the nation's culture overseas, runs a sign on to sign off canned format of "easy listening" music imported from the Kala Music Company in Kalamazoo, Michigan.

What emerges thus far from this structural analysis, supporting an anticipated outcome, is that foreign corporations are sharing the airwaves with Philippine state and local private enterprises and that in sales of commodities, although the products are identifiably foreign, there is local participation in name and in equity. Are these "external" and "internal" interests competitive and/or antagonistic? This is an extremely complex issue, but while conflict certainly does occur in day-to-day competition over sales and ownership claims, the basic character of production and relations of production remains intact. Concessions by foreign capital have certainly been made but putting local faces
on an essentially international mode of production controlled by a small number of Euro-Japanese-American TNCs does not alter the collusive though unequal relationship of internal and external sources of political and economic power.

Whereas the older communication technologies have drawn Filipinos into at least managing roles, such as in print and radio media, the new technologies remain firmly in the hands of foreigners, in the process integrating or making obsolete the older instruments of communicative exchange. As Evans sees it, it is the "integrative capacity of local capital [that] helps explain its survival." Local capital seeks out an area of "comparative advantage," he says, to establish a special role which it can perform on behalf of the TNCs. Evans also argues that large scale local capital integrated into the TNC production system may even be able to steer the process of accumulation.²¹

**Technological Addiction**

In the case of the Philippines the integration of Filipino capital into TNC telecommunication investments has encouraged some spread effect of older technologies, but there is little evidence to suggest that the newer technologies such as communication satellite, data transmission, lasers and co-axial cable have arrived in the Philippines as a reflection of greater local autonomy. In fact, to
the extent that local capital, particularly the Benedicto and Cojuangco groups, have become major actors in the advanced telecommunication services sector they have duplicated the roles of their TNC competitors, seeking out essentially TNC customers and TNC equipment sources. It is not unimportant that Cojuangco's PLDT has recently affiliated with German TNC capital (Siemens) and Benedicto's Eastern Telecommunications with the British (Cable & Wireless), but Wallerstein's argument that they remain within the fold of TNC capital (itself now more fully integrated internationally), seems to suggest the more compelling and transcending consequences of integration compared to the arguments put forward to demonstrate the more active role and significance of peripheral actors.

The newer growth areas of capital production have in turn brought the need for global communicative capacities found in data transmission (via telex, facsimile, modern teleprinters, satellite, co-axial cable, fiber optics, lasers, digital switching systems, etc.), all of which are dominated by a few TNC manufacturers headquartered in the U.S., Japan and western Europe. In computer-based communications there are simply no technological "semi-peripheries."

During the past two decades, in fact, record communications (telegraphy and data transmission) have undergone major changes primarily beneficial to the corporate business community. The most apparent is that the use of domestic telegraph has been rapidly
replaced by private telex.\textsuperscript{22} Domestic and international carriers dependent on expensive telex terminals and switching equipment expect a new wave of facsimile and leased high speed data circuit equipment to make current telex technology all but obsolete within the next ten years.\textsuperscript{23} In 1978, revenues from the largest but fledgling domestic telex carrier, P.T.&T. (a Santiago company), was already P18 million while the largest but declining nationwide private telegraph operator, R.C.P.I., earned P60 million. The government's Bureau of Telecommunications (Butel) telex switching center, razed in a 1976 fire, is today "limited to the exclusive use of the Bureau's telegraph service." Recently phased out of Manila's telephone market as well, Butel's gross income from all record and voice communications in 1978 was a scant P13.9 million ($1.8 million).\textsuperscript{24}

In the same year, by comparison, PLDT's total operating revenues amounted to P626.8 million, 52 percent of which derived from long distance tolls and 46 percent from local service. According to the company's vice president for corporate planning, the principal international toll users, constituting from 30 to 50 percent of monthly revenues, are hotels while the largest "domestic" users are Coca Cola, Pepsi Cola, Colgate-Palmolive, Philippine Refining Co, (Unilever), Proctor & Gamble, the foreign oil companies and the Philippine National Bank (which is in the process of having a separate nationwide toll network built for it by ITT.).\textsuperscript{25}
Again, we see the primacy of corporate users acting on behalf of their international property claims and the unrestricted access on the peripheral market for their soft drinks, detergents, petroleum products, banking transactions, etc. The Philippines has opened one of its more personal communicative exchange media, telephone, to those who can afford it, and the government has firmly committed itself within the export production-foreign investment model to giving TNCs special rights to that medium on the basis of their international power status. Telex, as well, has enabled the TNCs to treat the Philippines as an off-shore production unit with reliable channels of satellite, terrestrial and submarine cable and 3 international switching centers established to carry business data to and from their metropolitan bases. One writer notes the inseparable, historical and continuing planned development of transnational communication with the rise of transnational production:

[The] process of transnational industrial planning, marketing and distribution received an additional impetus in the 1950's, when an important change in transnationalization occurred: the transnationalization of production itself . . . . This transnationalization of industrial production was further aided by technological developments in air transportation, containerization and communication. Telex and satellite made it possible to have production units in many different locations and yet control the whole network with a global management policy from the central headquarters.26
Moreover, the origin of the specific telecommunication technology is largely of no technical consequence. The international carriers, (British and U.S.), the domestic satellite (space vehicle is U.S., ground stations are Japanese), teleprinters (the newer ones mainly German), telephone switching (German) and sets (U.S.) and television (Japanese cameras) have nearly become as technically compatible and "stateless" as space itself. There is nationally-based bickering, to be sure, particularly on the broader issues of control over the international radio spectrum as evidenced by the debates in the 1979 World Administrative Radio Conference of the International Telecommunication Union in Geneva. Here the key political issue among many states turns on the right to control transborder data flows. Two writers note that this issue includes data on markets, technology and credit assessments, all of which are vital to the success of private firms [which] carry a potentially high market value.

They also point out that the major power in international data bases and equipment, the U.S., has led to several European countries erecting protective barriers and even a few of the "semi-peripheral" states (e.g. Brazil and Mexico) putting up restrictive data flow conditions.27

The Philippine government, however, has not made this an issue in any of its public pronouncements. Its representative at the ITU-sponsored "Third World Telecommunication Forum" in 1979 presented a purely technical view of the region's communication
infrastructure and supported the idea that "The spirit of co-operation shown should continue to hasten the growth of telecommunications in the [Asia/Pacific] area." However, TNCs themselves, dependent on computer-based message delivery systems see the need to manipulate governments, suppliers and customers and acknowledge in some places that the gaps in the capability of TNCs and peripheral countries to make use of these networks would require homogenization of problem solving behaviors, cultural values and public attitudes on a worldwide basis. Moreover, multinational computer systems are likely to enhance the power and influence of multinational organizations whose interests transcend national ones.

Third world countries thus find themselves facing a potential "information crisis" similar to the energy squeeze of the mid-1970s, now dependent on a resource over which they have few cudgels to wield vis-a-vis the foreign data and communication technology banks.

**International Carriers - The Big Three**

In the international communication market, the three major record carriers in the Philippines, RCA-Philcom, ITT-Globe Mackay and C&W-ETPI, have led the move to computerized telex and data transmission, with the RCA affiliate also handling a significant
share of the U.S. government overseas telephone requirement and the
PLDT international overflow. Corporate earnings in 1978 from
various telecommunication operations can be seen in Table VII. It
is clear from these data that telegraph service is now a small part
of the spectrum allocated for international users.\textsuperscript{30} By the end
of 1979 telex had taken over the Philcom market with 43 percent of
revenues, while telephone was down to 35 percent, leased channel
down to 12 percent and telegram to 8 percent.\textsuperscript{31}

\begin{table}[h]
\centering
\begin{tabular}{|l|c|c|c|c|}
\hline
 & Telex & Leased Data & Telegram & Telephone & All Other \\
\hline
ITT-Globe Mackay & 60\% & 21\% & 15\% & -- & 4\% \\
RCA-Philcom & 32\% & 14\% & 9\% & 37\% & 8\% \\
ETPI (C&W) & 46\% & 22\% & <1\% & 26\% & 6\% \\
\hline
\end{tabular}
\caption{INTERNATIONAL CARRIER EARNINGS (By Service)}
\end{table}

Source: Philippines, National Telecommunication Commission,
communication carrier audited financial statements, 1978.

Data on the biggest international telex/data users reveal
that TNC industrial and banking/finance firms as a whole dominate
this portion of the electromagnetic spectrum as well, although for
all three international carriers the largest single telex user in
1978 was the Asian Development Bank and the largest single leased
channel user was the U.S. military.\textsuperscript{32} ITT-Globe Mackay (largest
of the 3 telex carriers) listed the primary categories of users as foreign or joint venture banks, international shipping, foreign manufacturers, foreign trade companies and foreign government installations. In leased circuits RCA-Philcom (largest of the 3) reported the top 10 narrow-band users to be U.S. and Japanese transnationals (in order):

- Caltex
- I.B.M.
- Xerox
- Getz Bros.
- Seatrain
- General Electric
- General Instrument
- Cummins Engine
- Timex
- Hitachi-Union

Its largest wideband users were the U.S. military, Pan Am, SITA (airline group) and I.B.M.

ETPI, the smallest but, with its ASEAN cable expansion, the fastest growing of the three, has a similar roster of corporate users in record communication services. Its biggest users by industry are (in order): banking, manufacturing, import-export trading, shipping and government - foreign and local. The "ability to pay" is even more strictly a condition for access to its fastest growing service, leased lines. Here the top users are (in order): U.S. military, Civil Aeronautics Administration (airport traffic), Hong Kong-Shanghai Bank, First National City Bank (U.S.) and Bank of America.
The special and related importance of banking to industrial transnationalization, we have noted, is also reflected in its telecommunication requirements. As the chairman of the board of directors of the Union Bank of Switzerland has indicated, banks represent "if not the biggest [telecommunication] user, at least one of the main users. This claim is warranted by the fact that in all sectors 'other people's' affairs end up in a bank." He also explains that from the U.S. to the Far East via Europe, international exchange involves "thousands of millions in the widest variety of currencies. And there is not a single one of these operations for which intensive use of telecommunications is not required. . . ." The significance of banking to international production is suggested by the presence on the Zurich stock exchange of 1580 national and 526 foreign securities which, he says, "gives an idea of the internationalization of financial operations even at national centers." The "Ordinary User"

As communication expansion and expense in the Philippines increasingly becomes associated with corporate business and security, the "ordinary user," including the small entrepreneur, is effectively becoming disconnected from relatives or associations in the rural provinces or close relations in the U.S., the Middle East.
or elsewhere abroad. This form of personal disenfranchisement through pricing mechanisms comes at a time when export oriented industrialization and worsening economic conditions have forced more and more industrial workers and peasants to abandon their ways of life and families and move in search of employment. And where once local businesses and the public alike could rely on postal and telegraphic "walk-in" services, the demand to maintain and improve those services could potentially be voiced by non-corporate interest groups.

Today telex has replaced post and telegraph as the primary mode of long distance communication, leaving public communications in the neglected and under-budgeted staffs of the Bureau of Posts and Bureau of Telecommunications, both of which share a reputation of scandalous inefficiency. Telex and leased channel in 1978 accounted for 81 percent of Globe Mackay's rising international revenues, and 77 percent of Philippine Telegraph and Telephone (PT&T) 1979 domestic revenues (a 30 percent increase over 1978), 35 percent of whose 1200 subscribers are concentrated in the metro Manila area. Fifteen years ago it was the telegraph that accounted for about the same proportion of these companies' revenues with "walk-in" customers representing the bulk of the business.

Rates also discriminate against common people. Telex charges for those able to rent highly expensive terminals amount to $0.01 per word while current telegraph rates would cost an average Filipino income earner his daily wage for a domestic 25-word
message. The same message sent to relatives in California would cost him almost a week's wages. Furthermore, the frequent breakdown of telegraph equipment, not upgraded in 15 years, is yet another disincentive. Message communications for the masses is said to have gone back to the personal courier system. 40

In recent years during the "upgrading" of telephone exchanges by PLDT and its former main competitor, Retelco, phone rates have spiralled out of reach of all but the small affluent classes. In early 1982 basic application charges ("investment requirements") were doubled by PLDT and approved by the National Telecommunications Commission to P3400 ($415) for private connection and P2500 ($305) for party line. 41 These services (not including monthly billings or transfer charges) constitute the equivalent, respectively, of about 5 months and 4 months wages for the average fully-employed worker which explains the extremely low overall usership of telephone services in the country. However, the rapid increase of capital investment into the telephone system is a critical requirement at this juncture of the country's telecommunication modernization program, a direction pushed by the TNC long distance users and carriers, the Marcos government, PLDT, the West German Siemens Corporation and, as we shall discuss, by the World Bank.

Telex circuits, another long distance corporate user medium, also facilitate the transfer of information among the leading business institutions. Of the some 3,000 names listed in the 1979
Philippine international telex directory almost all are large foreign and domestic manufacturing and trade corporations, banks, governments, hotels, airlines, shipping firms, oil, mining interests, and communications corporations. In the 1980s, the international carrier executives claim, the trend will favor increasingly privatized and secure alternate voice data channels of information transmission, currently available but prohibitively expensive to all but the U.S. military and a few corporations.

The Philippine Five Year Development Plan (1978-1982) placed most of its emphasis on regional telecommunication infrastructure. Thus far, however, only 13 percent of the country's towns and municipalities are served by telephone while 76 percent of all telephones are concentrated in Manila, with a dramatic 33 percent rise in density from 7.9/100 to 10.5/100 in just one year (1978 to 1979). Other secondary business centers like Bacolod made little progress (6.2/100 to 6.3/100) or, like Baguio (4.6/100 to 4.4/100), and Mandaue (5.8/100 to 3.2/100), even declined. The planned phaseout of Butel leaves the agenda for establishing communication priorities entirely to the private sector.

Telecommunication usage cannot be looked upon as simply an accounting ledger item. Nor can usage be realistically separated from design and function of telecommunication technology, that is, from whom it is primarily intended to serve. That workers and peasants are peripheral to the mode of telecommunication access is in congruence with their peripheral status in the division of world
capitalist power, and thus it is not for them that telecommunications policy is designed, however, but rather for a different community of participants. The "ability to pay" principle is ultimately based on the ability to sell.

The management of the global economy by TNCs has come to depend on their capacity for instantaneous communications between the hinterlands and the home office which is served by monopoly control over distance-insensitive technological infrastructure and that makes transborder industrial, financial and cultural preponderance feasible. Our data indicate the high degree of concentration in the communications/information sector of the Philippines, while other studies suggest an overall pattern of monopolization in other sectors of the economy as well. As one of the primary capitalist sub-centers in Asia, the Philippines has served as a haven for foreign, particularly U.S. and Japanese, investment, with provision of reliable satellite and cable circuits as part of the package. We have shown thus far that the primary optimizers of the large investment in telecommunications have been the transnational corporations, their joint venture partners and the Marcos government. We have no detailed data on military use of telecommunications other than to indicate that the U.S. military is the largest single end user of aggregate Philippine international circuits.

While electronic communication/information technology helps to protect and expand the TNC-controlled export sector together with
other foreign dominated enterprises - banks, shipping, airlines, hotels, etc. - the Filipino is increasingly being denied autonomy in shaping personal needs and demands. For as Herbert Marcuse so prophetically envisioned, the application of advanced technology for such a mode of production embodies the repressive instrumentalization of human behavior.\textsuperscript{46} Not only is the worker being dispossessed of the means of communicative interaction over distances, but s/he is also being assaulted with continual indoctrination of invisible forces who do have these resources and who ironically appear quite successful at inducing submissiveness through the appeal of entertainment and various forms of traditional identification (masculinity, patriotism, etc.) together with newer values (e.g., individualism).

Telecommunications transfer, we may say, represents the forward wall of world capitalist expansion. Its success in integrating world centers and outposts of private TNC accumulation, as opposed to public applications, will demonstrate the strength and viability of the global production system. The Philippines clearly has adopted a role making it one of the most open sanctuaries of this model of development and this too is illustrated by the structure of ownership, control and usage of its communication channels.

The Marcos government has clearly gained a great advantage in its concentration and control of information/communication channels, clearly to the benefit of its instrumental manipulation of
ideology, language and imagery. Domestically, Marcos' family and supporters have used modern communications as a means of bolstering the regime's legitimacy, imposing only the most favorable personal images on society through the managed multi-media channels including a permanent and direct palace hookup to Domsat. To assure a minimum of critical intervention in these development plans, the media have been explicitly banned from allowing any subjects "that tend to undermine the confidence of the people in their government or its duly constituted authorities or erode the belief of the people in law and order, decrees, good customs and established practices." And to preclude anyone from criticizing Marcos' allies as proxy for the regime, the government also prohibits "subjects that dishonor, alienate or derogate...any nation with which the Philippines maintains friendly relations." But as powerful and forceful a leader as Marcos has proven to be, the Philippines has not embarked on this path of developing telecommunication infrastructure unguided. In the following chapter we discuss how the larger arena of telecommunication policy and planning has been shaped, who have been its principal actors, what are some of its related consequences and what ends its objectives are intended and likely to serve.
NOTES TO CHAPTER FOUR


5. Interview, Manila, November 14, 1979.

6. Interview, ITT/Philippines managing vice president, Manila, February 14, 1980.

7. Philippine Constitution (1973), Article XVII, sec. 3(2).

8. Ibid., sections 2 and 6.

9. Philippine Overseas Satellite Corporation, "A Project Study on a Domestic Satellite Communications System," (Manila: n.d., ca. 1973), pp. 1.3, 13.2, 13.3. A July 10, 1980 interview in Washington, D.C. with a World Bank official involved in planning satellite radio education programming revealed that the Bank was dissatisfied with the weak planning outline of the Philippines and hence was reluctant to release funds for such a project. As the official phrased it: "The Bank is not willing to think hardware first, software second."

10. PLDT at the time constituted about 90 percent of Domsat's sales, RPN the other 10 percent. Data from interview with PLDT planning executive, Manila, January 24, 1980.
11. Ibid.

12. DataFil (Manila), June 16-30, 1978, citing the Philippines National Census and Statistic Office survey of 1975, indicated that 10 percent of all households owned TV sets, with a heavy concentration in Manila.


19. Ibid., pp. 27, 41. This source establishes that even in metro Manila, the majority (some 60 percent) of radio audience is of lower socio-economic class background.

20. Ibid., pp. 27, 49-54; and Report of the Broadcast Media Council, pp. 5, 10. A BMC "Resolution No. 379-06" reflects the foreign cultural imperialism and the complicity of the Marcos regime:

...whereas, radio musical programs continue to be dominated by foreign musical materials...it is hereby resolved, to require [sic] all radio stations to broadcast at least three original Filipino musical compositions in every clock hour of a program with a musical format.


22. Interview with executive vice president and general manager of PT&T, the largest domestic data communications firm, Manila, February 29, 1980.

23. Ibid.; also claimed by interviewees: RCA-Philcom general manager, Manila, February 11, 1980; ETPI vice president for marketing, Manila, February 8, 1980; and ITT-Globe Mackay vice president for marketing, Manila, February 27, 1980.

24. PT&T Financial Statement, 1978 and 1979. PT&T's telex revenues rose 29 percent in 1979. RCPI's telegraph revenue is taken from its 1978 Financial Statement, based on 93 percent derived from its telegraph operations as reported in interview with the firm's vice president, Manila, February 12, 1980. He noted that public (telegraph) versus private use of RCPI communication services had gone down from 5:1 in 1970 to 3:1 in 1980. See also Butel 1978 Annual Report.


32. Interview with Globe Mackay marketing manager, Manila, December 11, 1979; and with other executives cited in note 86.


34. Interview, RCA-Philcom marketing manager, Manila, January 22, 1980.


37. Ibid.
38. See, for example, special report in Bulletin Today (Manila), March 4, 1981.

39. Philippines, NTC, communication carrier audited financial statements for 1978; PT&T Financial Statement, 1978 and 1979; PT&T and Capwire Telex Directory and Manual, Manila, 1976. Almost all non-Manila users are located in large cities and most of these are subsidiaries of Manila-based TNCs, joint venture corporations or government agencies. About 65 percent of all PT&T revenue, however, is generated from Manila, according to the corporation's vice president and general manager. (Interview, Manila, February 29, 1980.)


41. Time Journal, April 20, 1980. For dollar equivalents the exchange rate of 8.2:1 was used.

42. World Bank/International Finance Corporation Office Memorandum No. 78 (Washington, D.C.: June 6, 1980). This 7 page report indicated the Bank's support for Philippine proposals for telecommunication "rationalization" and suggested $500 thousand in initial consultancy fees to help in the reorganization "in view of the adverse effect of underdeveloped communications on the economy, the present inefficiencies and the considerable contribution the Bank/IFC can make in institution building..."


44. A Filipino academic and businessman, Augusto Caesar Espiritu, views ASEAN as a cooperative but potential economic alternative to the monopoly of TNCs. Two sociologists from the University of the Philippines tend to see the Philippine economy as hopelessly compromised by Japanese and U.S. TNC joint venture subsidiary penetration. Augusto Caesar Espiritu, et al., eds. "A Filipino Looks at Multinational Corporations" in Philippine Perspectives on Multinational Corporations (Manila: University of the Philippines Law Center, 1978), pp. 1-97; and Randolf S. David and Mamoru Tsuda, "The Politics of Major Japanese-Filipino Joint Ventures: A Sociological View" in Multinational Corporations

45. This was reported in interviews with numerous TNC and joint venture telecommunication managers.


47. Philippines, Board of Censors for Motion Pictures, Guidelines on Film and Television Production and Exhibition (Manila: National Media Production Center, 1975), pp. 19-20. Almost identical wording is found in the official restrictions that have been placed on print and radio media. See Philippines, Department (now Ministry) of Public Information, Department Order No. 1, Manila, September 25, 1972.
CHAPTER FIVE

THE WORLD BANK IN TELECOMMUNICATION TRANSFER

Reason has found its resting place in the system of standardized control, production and consumption. There it reigns through the laws and mechanisms which insure the efficiency, expediency and coherence of this system.¹

In trying to understand the underlying assumptions of the model of technological development being urged upon the third world, there is need to reference some of its leading proponents. In this chapter, therefore, we discuss the ideological/academic legitimation of "modernization" offered by leading liberal theorists and, in the Philippine context, the major actors involved in the application of transnational development theory. From their justifying framework we consider the leading role of the World Bank in telecommunication transfer. We will discuss not only its ways of facilitating the necessary credit transactions but also its direct participation in the restructuring of social life, that is the Bank's role in adjusting the human to the new material forces toward what it recognizes as optimal outcomes.

The claims of ideological neutrality made by leading liberal intellectuals to describe the nature of contemporary technology and
the role of the World Bank in carrying out a supposedly disinterested mandate for economic transformation can not from a critical perspective be accepted at face value. Despite the widespread acceptance of such claims, even from among "left" intellectuals, we find fundamental theoretical errors concerning the relationship of human interest to science and technology and numerous indications of contradictory thinking about such notions from among the most active agents for its problem solving-oriented policies.

A prolixity of literature has recently emerged forecasting "post-industrial" scenarios of sterilized technological bliss based on the fullest activation and integration of electronic communication networks. Inasmuch as high technology has come to represent for many the contemporary elixir for achieving the controversy-free society and transnational corporations the modern deliverers, intellectuals defending this worldview deserve special consideration.

One of the most widely known futurologists of this inclination is Daniel Bell who envisions the current period eventually bypassing what he calls the "economizing mode" and changing the character of people's work from manufacturing to service industries. Bell projects a world derived from techné and rationality, a society whose primary basis of interaction is that of a "game between persons," a benevolent order communal in character
and built on cooperation rather than competition. The technologically-based social relationships inherent in such a polity would require collective organization, according to Bell, "a politics of consensus."³

Bell's futuristics, however, proceeds from his blunt assertion that "History is not dialectical." He argues against the marxian tradition that takes the holistic view of society and substitutes his own typologies of the social order, what he claims are

three distinct realms, each of which is obedient to a different axial principle. . . . the techno-economic structure, the polity and the culture. These are not congruent with one another and have different rhythms of change; they follow different norms which legitimate different, and even contrasting, types of behavior. It is the discordances between these realms which are responsible for the various contradictions within society.³ (Emphasis original.)

Bell's separation of these "realms" disjoins what more critical thinkers such as Gouldner, Marcuse and Ellul, and of course Marx himself, have recognized as the dialectical interrelationships of the material form (technological media), its social content (message and symbol formation) and the political economic (interest articulation) superstructure. Bell has assumed that the idealized interests of technocrats are gratuitously employed in reshaping instrumental relationships in a process unmediated by conflicting interests, and that such changes follow an "order [which] is linear
in that the principles of utility and efficiency provide clear rules for innovation, displacement, and substitution." What Bell and other "end of ideology" thinkers ignore, says Alvin Gouldner, are technocrats' **material** interests. Gouldner argues that, in actuality, "The technologists' wish-fulfilling fantasy of being free from the control of purely political, economic, military, or banking interests is a **technological ideology**, a project mistakenly defined as an already achieved condition."\(^4\) (Emphasis added.)

Bell has also noted that modern technology "for better or worse" has instrumentalist and centralizing tendencies, an assumption that sees repressive outcomes arising only "if the society decides to use it in that way."\(^5\) He does not elaborate on the human component (interest) in "The Society" that will prevail in determining technological applications, nor does he consider that application itself is a function not only of a posteriori consideration but of **design (use) aspects**, including the social relations of and in production, that are programmed into the finished instrument, most specially in the late Taylorism mode of advanced technological production.\(^6\) Bell's conclusions are consistent, however, within his ontological framework of separating political from cultural and technical structures.\(^7\) His assumptions about the basis of how society is constituted, in a manner similar to that of Milton Friedman's consensual view of capitalism and of other liberal thinkers, are bereft of problematical considerations of the supposed marketplace
determinants of public welfare. He fails to address questions concerning the organization of power and empowerment and its reification in all areas of the social formation. This limitation can only lead Bell to form arguments based on the understanding that the society is a singular homogenous representation of human desiderata and that the electoral process legitimates designated "representatives" in accordance with democratic principles.

This functionalist theory of society holds to the false precept, according to one critic, that "technology and organization have become the self-sustaining bases of production and affluence . . . the belief that scarcity has been truly and permanently transcended by and through capitalism . . . ." Moreover, Bell directly puts forth the idealized positivist notion that "Scientific knowledge is not ideology . . . but a public explanation subject to renewed tests of verification." The separation of technology from political interests allows him to fragment, compartmentalize and mystify the nature of technology's sociological character and, at the same time, socializing effects on society; an ideology that lends support to the subjugation of basic human interests to the supposedly neutral and indeterminate value of automated artificial "intelligence."

The conclusions reached by sociologists like Bell are, as the Frankfurt School critics have argued, not simply misinterpretations, but reside fundamentally in "the technologizing of sociology" and "in the nature of that subject matter and the position which is
assigned to sociology in contemporary society." It is this regulating function of society, to which "modernization" school sociologists commit their intellect, that critical sociologists see as the essentially unexamined purpose and direction of the discipline. This functionalist orientation ultimately takes on a repressive character through which, as Marcuse warned, "domination perpetuates and extends itself not only through technology but as technology, and the latter provides the great legitimation of the expanding political power, which absorbs all spheres of culture." Ideologically related to the sociological claims of Bell are those of the "post-industrial" economist, John K. Galbraith. It is Galbraith's contention that advanced "knowledge," as an outgrowth of 20th century technology-based industrialism, has come to replace "capital" as the central factor of the productive process, as an historical necessity. It is the momentum of technology as the core element of production forces that has pushed the reconstruction of capitalism (which he defines as entrepreneurial dominated accumulation) into a form that impels the withering away, as it were, of the historical capitalist role, replacing it with concentration of capital under the jurisdiction of advanced operational "technostructure." This approach, as critiqued by H.T. Wilson, ignores the essential structure of capitalism, narrowly focussing instead on the specific person of the capitalist. It fails to recognize that mature capitalism as a system (which includes advanced supercorporate technostructure) still retains an
exploitive class character and that it remains capitalist in the manner in which it divides, downgrades and disenfranchises various human labor constituencies. 13

In defending the transnational corporation Galbraith has recognized the enormous scale of power which it wields, yet he also conceives of the peculiar form of rationality that helps maintain its hegemony in the world market as logically consistent with a code of ethics that both serves collective human interests and transcends historical, cultural and national boundaries. Thus he concludes in one essay that where TNCs invest host nationals should tolerate what he considers the inconsequentiality of corporate ownership and instead concentrate on trying to win themselves management positions within the transnational enterprise. He suggests that critics should accept the idea that the TNC "cares most about his home country and labor force - these are its primary interests" - and that when it does go abroad it brings "a more rapid spread of technology or better international division of labor, greater productivity, greater aggregate employment . . . the old case for international trade." 14

Technology Transfer

We intend to respond to the claims Galbraith, Bell and others have used to defend the TNC's role in technology transfer,
particularly with respect to our interest in communication infrastructure in the Philippines. It first should be pointed out that innumerable studies have documented that TNCs operating through legal, though manipulative, mechanisms have managed to negate those categories of change in third world countries that Galbraith has used to justify their presence. Using extensive data on "less developed countries" Ronald Muller clearly demonstrates the general pattern by which TNCs have used their overpowering access to local resources toward capital intensive investments to eliminate jobs, expatriate earnings, take over local industries, monopolize patents, siphon royalty and other special use payments and restrict international trade - all of which prove harmful to the host country's balance of payments, finance flows and technology and capital accumulation. 15

Even in the so-called "miracle" economies (of which the Philippines is not included) where there is evidence of domestic capital accumulation (e.g. Brazil, south Korea, Taiwan), recent economic trends make it appear that "dependent development" cannot escape downturns that accompany their reliance on the currently recession-bound metropolitan countries. Peter Evans has argued in the case of Brazil that even given "growth area" development, the vast majority of Brazilians (with GNP per capita less than $400) have not availed of its widely proclaimed "economic miracle": literacy is low (60 percent) even by Latin American standards; the concentration of national revenues has been directed away from rural
areas, which need it most, to the center; 80 percent of the population live at a subsistence level, among the lowest on the continent, with real wages decreasing; an extremely high infant mortality exists (double that of Cuba, Mexico or Argentina); intense military repression has taken place (censorship of the media, imprisonment of writers, intellectuals, opposition legislators and massive torture); and 5 percent of the population holds 40 percent of the total income. Put in this context, the modern bureaucratic style of the Brazilian "revolution" or even the dramatic takeover of a foreign production outlet (such as the Hills Brothers purchase) has to be viewed from the global dynamics of the respective roles of national bourgeoisie, the role of the state and foreign capital.

In the specific case of the transfer of telecommunication technology to the Philippines, a would-be new "Brazil," we wish to examine not simply questions of formal accumulation of domestic capital, which we see as inadequate to discussing "development," but rather the larger package of issues, in particular those most directly affecting the division and transformation of labor. Technological developments that have occurred in transportation and communication have helped lead to such an "increasing subdivision of work processes," according to one major study, that a "world-wide industrial reserve army" has been created with consequences in the third world favoring extremely low wages, long work weeks, high labor intensity (forced productivity), rapid labor turnover.
capacity, and optimal exploitation of labor according to age, sex, skill, submissiveness, etc. Telecommunication technology also facilitates production that is insensitive to geographical factors which may have severely destabilizing effects on traditional work habits and locations. The study also notes that the refinement and fragmentation of work created by new industrial technology and its requirement for labor organization has substituted lower for higher skill ("deskilling") at lower wages and thereby caused severe disruptions in patterns of labor market participation.

Marx discussed how each development in the process of industrial mechanization brought with it the breakdown of the division of human labor hierarchy while at the same time subjugating labor to a more de-humanized relationship to the production process:

Modern Industry... sweeps away by technical means the manufacturing division of labor, under which each man is bound hand and foot for life to a single detail-operation. At the same time, the capitalistic form of the industry reproduces this same division of labor in a still more monstrous shape...

Marx went on to describe the new form of subservience of man to machine, how

...Modern Industry, and the social character inherent in its capitalistic form, dispels all fixity and security in the situation of the laborer; how it constantly threatens, by taking away the instruments of labor, to snatch from his hands his means of subsistence, and by suppressing his detail-function, to make him superfluous.
Contrary to Galbraith's claims about the benefits of the TNC-induced international division of labor, other writers have described how the refinement of technology produces a monopoly of knowledge in the control and execution of the labor process "which reduces the worker to a mere servant of the production process, which is managed exclusively by capital." The latter study of Frobel, Heinrichs and Kreye provides elaborate data and description of the new industrial process in third world "free trade zones" and has found that "The integration of world market production with the [third world] domestic economy is limited predominantly to the utilization of the labor force and infrastructure." Analyzing foreign capital flows to the Philippines that are directed toward export-oriented industrialization, one writer sees three sets of demands as part of an internationally sponsored economic rationalization plan:

[1] - the unrestricted flow of foreign investment and profits for labor-intensive manufacturing;

[2] - dismantling of the protective tariff structure and system of local subsidies that remain the only means of survival for many Filipino firms;

[3] - and, most important, the provision of cheap, unorganized labor assembled in tax havens known as "export processing zones."
The World Bank in World Development

The carrying out of this economic rationalization plan is guided by the World Bank's ideology of development. The Bank, as leader since 1971 of the Consultative Group of Philippine lenders, in fact has been a primary planner in the formulation and implementation of the Philippines' overall economic development program. As one study indicated, World Bank and affiliate International Development Association loans and credits extended to the Philippines in the FY 1974 to 1978 period was 4.5 times the value of all Bank assistance from FY 1946 to 1973 and actually bypassed the U.S. government as the leading source of direct economic assistance by 1975. 24

A major thrust of the Bank's participation in the Philippines has been to move the economy toward export-oriented industrialization and rural infrastructural projects. Employing the patriarchal language of helping the poor countries to get on their feet through the expert, non-partisan assistance of its advisors and various lending sources, the Bank has come under criticism from numerous sources for its failure to come to terms with the basic political economic nature of third world poverty. Critics see the role of the Bank as fostering an international division of labor under the hegemony of the core capitalist powers. 25 That some socialist countries like Poland and more recently China have made efforts to avail of the Bank's largesse appears to support
Wallerstein's contentions about the transcending dominance of world capitalism, though not necessarily the extent of integration of socialist states that he seems to envision. Largely funded and directed by U.S. capitalist interests, the Bank projects a strict positivist and neutralist orientation towards its international advisory and lending policies. As one of its division heads explains:

"The World Bank can provide a developing country with an independent, unbiased technical and financial overview, and can serve a significant coordinating function."

One of the Bank's essential recommendations has been in support of an export project which got off the ground with an initial loan of $12.5 million to "help fund the creation of new export processing zones, modernization of industries for exports." These recommendations have been enthusiastically endorsed by the Marcos technocrats, opening up the gates of the economy to foreign corporations with incentives that include approval of 100 percent foreign ownership, foreign technicians during the first 5 years of operation, priority for foreign exchange, no restrictions on foreign imported materials, tax exemptions on capital gains, capital equipment, raw materials and, for "pioneer industries," sales of finished products.

The Bank/I.M.F. in 1979 also asked for the opening of the Philippines to greater foreign competition, specifically by removing
protective tariffs, eliminating subsidies for local entrepreneurs, adding further incentives to foreign investment and building additional export processing zones.\textsuperscript{30} The Central Bank Governor at the time, Gregorio Licaros, welcomed the I.M.F.'s intervention, calling it a way to "keep the economy in line."\textsuperscript{31} By 1981 three zones were already in operation in Bataan, Baguio and Mactan with plans for several additional locations in the works. Teodoro M. Pena, chairman of the Export Processing Zone Authority, projected that the zones, already with 7 electronic equipment manufacturers, would move more rapidly in the direction of high technology and advanced electronic equipment in order, he bluntly and ironically warned, to compete against the mainland China export market "with their cheap labor."\textsuperscript{32}

Moreover, the technology which TNCs are encouraged to bring to the EPZs, such as that of the "progressive car manufacturing program," is diversified production taking place in separate Asian regional centers, preventing any one country from taking over full scale manufacturing. EPZ workers are exploited through low wages, poor living conditions, little knowledge transfer and the absolute ban on the right to strike.\textsuperscript{33} And as James Petras has argued, what is striking about the export-oriented platforms of third world countries is not how much they have moved away from traditional patterns of raw material exports-finished goods imports, but actually how much these patterns still persist.\textsuperscript{34} Indeed, the Philippine EPZs may now be manufacturing or assembling more
desirable finished commodities, like Ford automobiles or even Timex watches, but these goods are prohibited from being directly sold on the local market, another indication of how little the export production program priorities reflect quality of life interests of the domestic work force.

Banking on Telecommunications

Central to the operation of free trade zones not only in the Philippines but around the world is the need for functional integrative links which telecommunications provide. It is for this reason that TNCS and the World Bank have urged and encouraged the updating of information and voice communications in the Philippines to "world class standard." It is significant that the World Bank became active in the Philippines telecommunications sector shortly after Marcos began to put together the executive-dominated, authoritarian martial law apparatus. This interest of the Bank in Philippine telecommunications corresponded to the period of U.S. military intervention in Indochina (and of McNamara's continuous leadership in the Defense Department, 1961 to 1967, and the Bank, 1967 to 1981) in which TNC communications/electronics technology played vital tactical functions. The Marcos coup, in fact, helped overcome obstacles put in the way of global integration by certain nationalist elements determined to slow down further foreign
economic domination and the Bank-supported "ideology of development."35

Implementing its global development strategy a Bank/I.D.A. memorandum of June 11, 1973 distributed among Philippine telecommunication officials following an inspection tour of communication/information installations in the country expressed serious reservations over the fact that

franchises for the operation of telecommunication systems in the Philippines have been approved by Congress on a non-exclusive basis. . . . Lack of control and coordination in the sector has resulted in uneconomic duplication of facilities, poor network design, high costs and indifferent standards of service.36

The memorandum called for a national telecommunication network:

The correct long-term solution for reorganization of the [telecommunication] sector is considered to be full integration of all services. If this is not immediately possible, then as a first step the integration of local networks should take place and they should in future operate on an exclusive [monopoly] basis. The number of entities operating local systems should be reduced as operations are consolidated. [Emphasis added.]

To assure Bank/I.D.A. supervision and control over the proposed integration plan, through the official authority of the State, the memo added:

As a condition for Bank lending we should require acceptance of the principal [telecommunication] sector objectives by Government and of the
individual entities being required to meet the Bank's normal management and procurement requirements and being able to function in a viable manner. [Emphasis added.]

A policy study undertaken the following year by a government "inter-agency committee on telecommunications" under the office of the Executive Secretary repeated the Bank recommendations, calling for a policy to "achieve an integrated development of the industry."37 The inter-agency report also shared the Bank's view that

Monopolization of trunkline [local] network operations can bring about sooner modernization and expansion of the telecommunications system and thereby push up telecommunications in the desired level of development as the other vital sectors of the economy.38

One of the more recent World Bank proposals adopted by the Philippine government is the merger of the two largest telephone entities, PLDT and Retelco. The Bank's view was that

Together, P.L.D.T. and Retelco provide 91.6% of existing telephone service. If they merged, and if the resulting private (or public) company adopted the public service objectives listed under paragraph 4 above, and were managed as an efficient public service development enterprise, [sic] the national development objectives of the sector might be achieved. The resulting company would have to initiate a rapid integration and expansion of long distance and local facilities, could buy up or absorb existing smaller companies, and could accelerate expansion into unserved areas of the country.39
Within 8 months the merger had proceeded accordingly with PLDT taking over Rete1co automatic telephone exchanges in the greater Manila area. 40

Other Bank directives have also found their way into Philippine telecommunication policy and planning. For example, the doubling of telephone connection fees by PLDT in the Manila area in early 1982 (discussed in Chapter 4) was a direct result of recommendations made in a World Bank telecommunications mission report in July 1980 which complained that inefficient telephone calling habits caused by the "extensive use of party lines" was blocking the fuller provision of long distance service. The Bank's prognosis has been to price out the inefficient users; as the mission report stated, "price is not used to efficiently allocate scarce network call traffic capacity." 41 The World Bank chief of telecommunications, Robert Saunders, has urged as a general formulation that the solution to the perceived problem of

large telephone and telex waiting lists and system call traffic congestion during daytime business hours [is] ... a pricing and investment strategy which includes relatively high connection fees and monthly rentals for urban area subscribers ... and accompanying high busy hour call charges. 42

In a rare concession of the political economic nature of the Bank's planning considerations, Saunders noted in 1980 that

Ideally, monthly rentals should be the primary means for attempting to allocate telephones to high value subscribers since rentals can influence existing subscribers as well as new ones. Politically,
however, it is usually much easier to increase access charges to those who are demanding connections, than rental charges to those who already have service. (Emphasis added.)

In early 1982 PLDT's access charges were doubled.

In line with these World Bank integration plans the Minister of Transportation and Communications, Jose P. Dans, expects the Philippines to spend $1.5 billion "to modernize its communications system" and confidently predicted that "within the next four or five years transportation and communication will have one of the biggest budgets in the national government in terms of infrastructure." However, despite the already prevailing influence of the Bank in redesigning the Philippine telecommunication infrastructure, little financial support has yet been forthcoming, although "a tentative provision of $50 million has been proposed ... for inclusion in the 1984 lending program." Minister Dans, himself, acknowledged that major changes in the telecommunication system were being initiated by the World Bank. In a letter to the then Finance Minister, Dans reported that the national telecommunications master plan has been prepared as the basis for a request for assistance in securing funds for, first, a technical consultancy arrangement and, second, the development of a comprehensive telecommunications backbone system for the country. It is submitted that the conditions imposed by the World Bank, in its 1973 and 1976 official reports and in its unofficial report, have been or are in the process of being met. (Emphasis added.)
The Bank's interest in providing financial assistance is quite explicitly based on the demand for overall control of infrastructural planning which it feels it had not sufficiently attained despite extremely cooperative efforts of Filipino technocrats. In response to PLDT requests for Bank assistance, for example, the Bank's response in 1973 was as follows:

PLDT considered that there might be a case for Bank financing of cable and telephones in its present financing plan and up to an amount of perhaps U.S. $7.5 million. Limited financing on this basis would give the Bank sufficient leverage in institution building. Before funding could be considered we should require PLDT to accept the policy changes outlined above. 47 (Emphasis added.)

The earliest proposals in this direction came in the 1950s from the International Cooperation Administration (predecessor of U.S. AID) and the International Telecommunications Union (ITU), and Marcos in 1969 responded by setting up a "reorganization committee" that recommended full control of the telecommunications system by the private sector. In 1973, following the advice of ITU, the Philippines established a new Communications Board similar in design to the U.S. FCC. 48 The Bank determined in 1980, however, that the Board's regulatory power, especially over the common carriers, was too weak to provide "adequate standards of service." 49 (Ironically, a demand by a U.S.-dominated financing agency was calling for a stronger regulatory environment for communications in a third world country at the same time that the dominant
political-economic current at home was for weakening the FCC.) Also signalled was the Bank's impatience with the inadequacies of the eight-year old dictatorship:

As a result of the inadequate legislative framework and poor control the telecommunications sector suffers from fragmentation, uneconomic competition, failure to obtain scale economies in procurement, and difficulty in obtaining finances for essential development.50

The Marcos government has carefully attempted to implement the Bank's integration proposals, initially allowing the Santiago (Retelco) group to consolidate national telegraph, telex and data transmission under his TSI enterprises as Government telephone and telex (Butel) was phased out. As noted earlier, PLDT has since absorbed the Santiago group's telephone holdings, and a move has been under way to force its control over the other 66 entities, mostly small town private telephone companies.51 We have also seen how the Benedicto and Cojuangco groups have formed joint ventures with the transnational telecommunication conglomerates in satellite, cable, telephone and television projects. And we have discussed how the big business sector, concentrated in Manila and in the new export processing zones, has been the focal point of telecommunication infrastructure investment. The Bank's role in telecommunication infrastructure until recently has been largely advisory. However, in a Bank/IFC mission report in June 1980, a
joint project of the Bank/IFC-Philippine Ministry of Transportation and Communications was proposed, stating that its

"...recommendation is that in view of the adverse effect of underdeveloped communications on the economy, the present inefficiencies and the considerable contribution the Bank/IFC can make in institution building, during the period of rationalization, Bank/IFC participation in financing the consultants and in future development of the sector is appropriate." 52 (Emphasis added.)

The Bank's advisory role in Philippine telecommunication planning is an important element in rationalizing global production for maintaining the viability of capitalist expansion and in establishing sufficiently palatable rules of conduct to keep Philippine governing elites in a comfortable though subordinate position. The threat of instability to this arrangement are clear to both sides, however, and explains why the Bank would express concern at the "increasing concentration of manufacturing employment in the main industrial centers." 53 The Bank/IMF have since 1962, in fact, forced a series of exchange rate devaluations on the Philippine peso along with local financing for foreign owned industry, tariff reductions, export and investment incentives, all in conflict with accumulation by national businessmen - that have made it virtually impossible to develop anything other than a pattern of dependent manufacturing and labor concentration. 54

Organized transnationally, the advanced forms of capital, science and technology remain under the direction of the western industrial
centers rationalized under "economies of scale," while cheap land, raw materials and unskilled or semi-skilled labor are contributed by the third world as superfluous factors of production utilized in the name of "comparative advantage" and productive efficiency.

The most refined aspects of modern technology have made location and direction of production less important, according to one study, while new forms of labor organization have reduced complex undertakings to more fundamental, fragmented units of work. With hundreds of millions of the third world labor force quite literally starving for jobs, the TNCs have at their disposal a vast reserve army of unemployed competing to take on any work assignment regardless of the social disequilibria so effected. New modes of transportation (air cargo, containerization, specialized carriers) and telecommunications (including data access, processing and transmission) have helped make possible an international superstructure of capital accumulation and valorization, overwhelming all efforts to develop distinct, rational or autonomous alternatives.

Banking on Education

Under the expedient of a centralized mode of decision-making under the Marcos martial law government, the World Bank found a
convenient social framework for transforming the country's workforce towards what it claims

improve[s], quantitatively and qualitatively, the knowledge and skill necessary for performing economic, social, and other development functions. . . . To satisfy these objectives, developing countries will need to build and maintain their institutional capacities to design, analyze, manage, and evaluate programs for education and training.57

Both the World Bank and the Asian Development Bank (ADB) as well as other American institutions have given serious attention to the education sector, especially in technical, vocational and agricultural education. (See Table VIII.) A new national education direction was established in 1969 with the creation of a Presidential Commission to Survey Philippine Education (PCSPE) which brought in planning teams from the World Bank, the Ford Foundation together with U.S.-trained Filipino technocrats and a number of American Jesuits. Out of this came commitments from the World Bank/IDA and ADB which participated in seven education projects from 1973 through 1981 costing $207.7 million plus the equivalent of $423.3 million from matching Philippine government and private sources.58

Adopting World Bank/Ford Foundation recommendations for an integrated technical training approach, the PCSPE created a National Manpower and Youth Council (NMYC), currently under the aegis of several presidential cabinet officials. The NMYC was charged with creating "training institutions, and formulating such plans and
TABLE VIII

WORLD BANK/IDA AND ASIAN DEVELOPMENT BANK
LOANS AND CREDITS TO THE PHILIPPINES, 1973-1981
(In U.S. $ Millions)

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Purpose</th>
<th>Total Cost</th>
<th>World Bank</th>
<th>IDA</th>
<th>ADB</th>
</tr>
</thead>
<tbody>
<tr>
<td>1973</td>
<td>Agricultural education</td>
<td>17.7</td>
<td>--</td>
<td>12.7</td>
<td>--</td>
</tr>
<tr>
<td>1976</td>
<td>Textbook, teacher-training, curriculum, mass media study</td>
<td>51.6</td>
<td>25.0</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>1977</td>
<td>University of the Philippines, agricultural education</td>
<td>45.3</td>
<td>25.0</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>1978</td>
<td>Primary educational radio, teacher training</td>
<td>3.9</td>
<td>2.0</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>1979</td>
<td>Engineering education</td>
<td>25</td>
<td>--</td>
<td>--</td>
<td>16</td>
</tr>
<tr>
<td>1981</td>
<td>Elementary education</td>
<td>448</td>
<td>100</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>1981</td>
<td>Technical and vocational education</td>
<td>38.5</td>
<td>--</td>
<td>--</td>
<td>27</td>
</tr>
<tr>
<td>Total (1965-1981)</td>
<td></td>
<td>631</td>
<td>152</td>
<td>12.7</td>
<td>43</td>
</tr>
</tbody>
</table>

programs as will ensure the efficient allocation, development and utilization of the nation's manpower and thereby promote employment and accelerate economic and social growth." With World Bank financing, the NMYC set up ten regional training centers and three technical institutes, producing over a ten year period (1969 to 1978) 85 percent of its graduates in vocational, agricultural and industrial skills as compared to 2.4 percent with management training. (See Table IX.) Management education has usually been the preserve of elitist universities like the Jesuit Ateneo School of Business and the foreign subsidized Asian Institute of Management and University of the Philippines School of Economics.

A number of critical Filipino scholars have argued that the NMYC objectives, despite the appeal of developing better skilled manpower, are constrained by the reality of the economic preponderance of foreign TNCs which ultimately determine the definition of employable skills. NMYC's overall effect on employability has not been responsive to the labor situation, with official and conservative unemployment figures having risen from 4.6 percent in 1979 to 15 percent by early 1982, with real income declining over 50 percent since the martial law declaration and a skewness in income distribution matched only by Latin America. Poverty levels, using conservative U.S. AID data, increased from 36.1 percent in 1971 to 45.3 percent by 1975, which among numerous other significant indicators suggests that despite the rapid influx of foreign capital as a response to de-controls,
### TABLE IX

NATIONAL MANPOWER AND YOUTH COUNCIL GRADUATES IN THE PHILIPPINES, 1969-1978

<table>
<thead>
<tr>
<th>Programs</th>
<th>Graduates</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vocational Programs</td>
<td>64,655</td>
<td>29.99</td>
</tr>
<tr>
<td>Agricultural Skills</td>
<td>60,161</td>
<td>27.91</td>
</tr>
<tr>
<td>Industrial Skills</td>
<td>58,523</td>
<td>27.06</td>
</tr>
<tr>
<td>Regional Manpower Training Centers</td>
<td>12,382</td>
<td>5.75</td>
</tr>
<tr>
<td>Special Programs</td>
<td>6,549</td>
<td>3.04</td>
</tr>
<tr>
<td>Integrated Skills</td>
<td>5,732</td>
<td>2.66</td>
</tr>
<tr>
<td>Management Skills</td>
<td>5,177</td>
<td>2.40</td>
</tr>
<tr>
<td>Cottage Industry</td>
<td>1,156</td>
<td>.54</td>
</tr>
<tr>
<td>Trainers Skills</td>
<td>1,052</td>
<td>.49</td>
</tr>
<tr>
<td>Service Skills</td>
<td>339</td>
<td>.16</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>215,526</strong></td>
<td><strong>100.00%</strong></td>
</tr>
</tbody>
</table>

the consequences for the Philippine working class as a whole have been negative if not disastrous.

In an extensive study on the new international division of labor in 103 countries, Folke Frobel and others found that the objectives of worker education in the capitalist third world labor markets follow certain patterns. The key characteristics of such "world market factories," according to the study, emphasize four features:

(1) Training is usually in "specific elementary functions" such as assembly of components, operation of punching machines, the running of automatic looms while semi-skilled jobs are very limited;
(2) Skilled work is mainly in subsidiary operations such as in tool making or maintenance and even this kind of training is offered only when such skills are not available;
(3) Training for technical and office staff is very rare, comprehensive training (such as buying, marketing and transportation know-how) needed for running the company is avoided; and
(4) There is no significant local research and development that occurs.64

These patterns are found in the aspect of technology transfer that directly impacts on education of labor in the Philippines. And the kind of training that occurs in the telecommunications sector
suggests some of the implications of high technology on a third
world economy in general. A PLDT vice president, for example, in
discussing the training of local personnel involved in the transfer
of Siemens electronic switching and exchange equipment pointed out
that only a handful of high level engineering managers get any
training at all, and these primarily in operational functions. The
PLDT executive noted that the company's engineers with some training
in computers were dependent on Siemens for "software," and a
PLDT union officer added that those engineers who received training
in West Germany were obligated to either work for PLDT for three
years or repay their travel expenses.

A Domsat engineer-executive similarly commented on the work
relations engendered by the import of Japanese-made satellite
antennas and other foreign ground station equipment. The Filipino
personnel at these ground stations, he cited, merely monitor the
operation of the equipment, and although they might have engineer
titles and educational credentials they are little more than
semi-skilled laborers in a highly automated operation over which
they have extremely little design or functional input. It is
commonly mentioned among Filipino engineers that TNCs that bring
telecommunication technology to the Philippines are reluctant to
give any but the most rudimentary form of training and usually
without the aid of detailed manuals. For these reasons and for pay
scale disincentives, a brain drain crisis in all technical fields
has developed with nurses, doctors, engineers and skilled
technicians flocking to the Middle East and other greener pastures. Most of them are expatriated by way of employment services run by the Philippine government, a policy rationalized as one resolution to the balance of payments problem.

The World Bank tends to validate these policies by treating the worker as, what Marx called, a "detail laborer" in a commodity-oriented division of labor. It is the Bank's attachment to a particular political economic structure "which makes science a productive force distinct from labor and presses it into the service of capital." The presumptive notions of egalitarian development by internationalist institutions like the World Bank and its distribution of rewards through education, as Samuel Bowles points out, ignore the social relationships of societies and the relationships of education, accumulation and inequality.

The capitalist class has little interest in educating labor in ways that will improve their value beyond marginality, beyond learning of factory discipline. Technical education permits the exchange of labor components that corresponds to the Bank's rationale for the international standardization of telecommunication equipment and leads to "simplifying technical training," creating a "flexibility of staff" and the "interchangeability of supplies and spares." The emphasis by the Bank is on process over participation as educational objectives. As Bowles argues, the tendency among capitalist aid donors is to reduce allocations for primary education in favor of higher education, and the World Bank
invested between 1963 and 1974 four times as much in the latter over the former. In more recent years, however, the Bank has begun to take a more long-range view of education in line with the expanded role of world capitalist production requirements and its need to regulate the flow of labor power on a generational basis. Frobel et al. pointed out,

The potential and actual labor force must be appropriately prepared, disciplined, and mobilized to play its assigned role in the world-wide expansion of capital. This implies new developments in the educational policies for schools and other institutions to provide for the training of a large part of the future labor force: not education as a precondition for self-determination, but rather as a preparation for factory work.

Banking on Youth

The preparation for integrated global hegemony requires not only the training of labor power as part of what the Bank considers the "political, administrative and economic preconditions" needed in order "to maintain a positive climate for growth"; it also depends on the enlistment of future generations for local management, non-militant workers and obedient citizens. Toward this latter objective the Bank has devoted considerable resources. From FY1963 to 1978 the Bank/IDA together with UNESCO were involved in 192 education-related projects in 81 third world countries with assistance valued at $2.6 billion and with rapid expansion of this
sector projected for FY1979 to 1983 valued at $4.5 billion. Viewing the need for linkage between what it considers "training" and "education," the Bank understands their value in functional terms, expressing the concern that "many [third world] students are educated beyond the requirements of available jobs" and that these differences "often leave students unprepared for their subsequent work experiences." It is not only that this determination assumes an ahistorical, universal character of educational need, but it also uncritically places external actors in the role of defining fundamental social choices without reference to Filipino society, culture or politics.

In 1981 the World Bank extended a $100 million loan to the Philippines as part of the government's ten year education development program "designed to strengthen policies, management and instructional programs for elementary education." Between 1982 and 1985 60 subprojects are to be financed that will provide 11 million textbooks, and 11,000 classrooms, new curricula, teaching materials, equipment, staff training, control over the number of teachers and classroom evaluation criteria. Acceptance of a highly centralized ten year education program (1981 to 1990) was, in fact, a condition imposed by the Bank before the loan could be considered.

Education has been re-prioritized. In the pre-martial law period education was perennially the largest segment of the national budget, usually over 30 percent of the total. By 1982, of the
national budget of $7.4 billion the education sector received approximately $500 million (7 percent) while the military was directly allocated over $1 billion (14 percent). As another indication of shifted priorities, the curriculum changes that will be forthcoming appear heavily biased toward western notions of education. Only three subjects are to be taught in the first three elementary grades, Pilipino, English and mathematics, and the only other subject for the remaining three grades will be a mix of four other subjects.

Critics have argued that the absence of a solid social studies and humanities foundation is likely to distort the curriculum away from analytical and national bearings in favor of purely functionalist objectives. One Filipino writer sees the social science textbook aspect of the external assistance program as a way of lending legitimacy to the regime through the resocialization of youth to the ideology of Marcos' "New Society" (now "New Republic") and to an acceptance of a rewritten version of history. This version, she claims, treats the U.S. and Spain as "accidental colonizers" and portrays TNCs as wholly benevolent - an interpretation compatible with World Bank patronage. Furthermore, the curriculum standardization that is being pushed by U.S.-trained educators at the top has tended to favor students from high-income families while the government neglect of public education and support to private schools appears to be limiting and undermining options for career selection while reducing wage and status rewards of the skilled labor force.
One of the results of the Presidential Commission to Survey Philippine Education "Ten Year Education Development Program," established in 1972, was the creation of a new area of the Ministry of Education and Culture that would enjoy a degree of autonomy in carrying out a national program of educational reforms. The Educational Development Projects Implementing Task Force (EDPITAF) has been designated as the institutionalized "executing agency for all [World] Bank Group education projects." Earlier Bank loans and credits to education have been directed primarily at agricultural, vocational and technical education but the more recent (1981) and largest single education loan of $100 million went to elementary education. This new direction is in line with the Bank's newer "basic needs" approach, but it has also extended the Bank's presence considerably compared to its earlier concentration on the "modern sector."

One of the long range objectives of the World Bank in the Philippines is to use communication satellite for formal and informal education applications. Experiments undertaken by Bank-sponsored Philippine agencies in radio education have not been encouraging thus far, their own reports admit. One Philippine government report noted that rural radio education had little to recommend it, citing problems of lack of training of program planners, absence of evaluation, the fact that all planning was done at the national level and that there existed "virtually no involvement among the listeners" despite a central objective
intended to "foster closer working ties among the target audiences and the different private and government institutions working towards the improvement of rural conditions." The report also alluded to the basic conflict of political values involved, referring to "the peace and order problem in some areas of Mindanao." What is interesting here is that while this government report cites low levels of mass participation and resistance movements as major inhibiting factors, it is hard to find any World Bank planning document where social questions are treated as problematic to development. Rather, the Bank, like other western loan dispensing agencies, tends to defocus the active human agents involved in the activity of development, relegating conflict to the rubric of "political" and their own respective interests to the presumptive status of dispassionate "solution" finders. Hence we find the Bank delivering statements claiming a disinterested, putatively philanthropic, participation in the third world education as follows:

In summary, the World Bank, in becoming involved in the telecommunications sector in developing countries, focuses its efforts on institution building and on helping to facilitate efficient and equitable economic growth.

The creation through "presidential decree 6-A" of the education task force, EDPITAF, in 1972, was part of the structural remolding that Marcos and the World Bank undertook under the concentration of powers bequeathed by martial law to apply
telecommunications to the national (re)education campaign. A central focus of the new educational orientation was the development of manpower, and the new decree overcame the restrictions of a pre-marital law act (R.A. 6142) that had limited the extent of external sources in educational projects. A study undertaken by EDPITAF looked forward to setting up a nationwide education support system backed by World Bank funding (comprising 59 percent of the total) that would include 52 satellite earth stations for "unified and comprehensive coverage." Government intentions to introduce satellite television applications via Domsat have been resisted by classroom teachers who perceive it as an instrument to undermine their importance and eventual employment, although the main constraint was the response of an inter-agency group, advised by the World Bank, who considered the project "too risky." 

The rationale for Bank support to elementary education is again related to the Bank's overall approach toward transnational economic integration of the third world work force. In the 1960s the Bank was largely involved in educational loans for "hardware," but in the 1970s the attention shifted toward an overall national evaluation of the education sector and made this approach a "prerequisite for financing." This kind of overview allows the Bank to establish the goals for education, the first of which, a Bank education sector policy paper claims, is to create "a trained labor force equipped to handle technical and managerial problems." But we have already seen that few students actually
received managerial training. The Bank has substituted a form of technocratic rationality in lieu of recognition of the social aspects of development, the fundamental questions of production relations and political participation. As a source of educational funding and leadership the World Bank will not likely put such social values on the development agenda, a denial which gives the Bank great leverage in setting the rules of future development while holding out a modicum of hope and perquisites to nationals who take up its tasks.

The World Bank will continue to promote information technology both for formal and informal education, and more direct support for satellite program delivery is scheduled to come with the 7th education project in the mid-1980s. A "pre-investment study on communication technology for education" undertaken by EDPITAF under World Bank auspices looked toward 3 options using either existing or new broadcast stations and broadcasting either by non-commercial or a mix of commercial and non-commercial TV and radio stations. An early study undertaken by Domsat also looked to the educational sector for filling a major portion of its television broadcast capacity with videotape and tele-courses for rural audiences. Cost and time overruns, however, have slowed implementation of even the purely commercial satellite applications.

The Bank, in the meantime, has pushed for radio transmission of educational training programs and evaluation for elementary school children and their teachers in the provinces of Leyte and
Pangasinan and provided $2 million for this purpose. This would be the beginning of a highly centralized program of monitoring student and teacher behavior through the instrument of a curriculum directed by the Bank and administered out of Manila via communication satellite. The response to the "summative evaluation" of this project by Philippine project counterparts is perhaps more instructive than the results of the radio teaching program itself. According to official results of pre- and post-test scores of children and teachers involved in a Bank-sponsored experiment in the teaching of the national language, Pilipino, neither high textbook-to-student ratios nor radio-assisted teaching programs for the children nor radio-instructed continuing education training for their teachers had any significant effect when compared to (control group) outcomes obtained from traditional methods of teaching.95

Ironically, the evaluation concluded that

In sum based on the over-all comparison of means, however, it would appear that improvements in the posttest scores resulting from the treatment variables do not differ markedly from improvements arising from the present teaching situation which do not enjoy any of the add-on technologies considered in the design.96 (Emphasis added.)

What is perhaps more astonishing is that such a blunt admission of failure did not deter the Bank from announcing its $100 million education project for the Philippines within a year, assistance that would go to providing textbooks, further training for managers, planners and school staff, introduction of a new curriculum, teacher
monitoring, and evaluation, administered in part through 216 man-months of foreign consultantships to promote planning, testing, management, data systems, workshops and publishing. A repeal of restrictions that formerly applied to foreign involvement in the education sector can be assumed to have been a condition for the World Bank loan.

The Bank-Marcos technologizing approach to integrating the education sector fits tightly into the larger global Bank-TNC rationale for developing the auxiliary production centers and manpower reservoirs which we have discussed. By introducing telecommunications for administering the training of children, the Bank's aim is directly related to the technology-based strategy for education that is dominant within the elite sector of the core capitalist states, pulling the periphery as a whole more deeply into the vortex of the center. The short range objectives of such education techniques are expected to include quick returns in the form of having tangible and exotic media such as classroom radio, TV and videocassette recorders which help support a particular notion of progress together with classroom test scores designed to validate their utility. This tends to cast the state and the Bank in the role of "modernizer." A second immediate objective, one emphasized a great deal in the Philippines, is the use of capital-based technology for fostering the image of "nation building." The World Bank, for example, discusses the effectiveness of TV "for achieving national unity" but is silent about what sort of consensus is
formed when control of the instrument is in the hands of a repressive state apparatus.

A concurrent proposed communication satellite education project funded by the Bank is called "Communication Technology for Rural Education" which has as its objectives (1) the use of a "2-way multi-media learning system" and (2) integration of rural development agencies. The proposed staffing of personnel for proposed state organized rural education forums would be appointees of the provincial offices who would in turn be directed by the guidelines of participating ministries and departments in the national government. Regional training centers and extension workers would be hand-picked by these appointees while selection of local model peasant leaders would require listings for provincial, regional and national approval. 101 We can envision here not only a vast network of bureaucratic pork barrel but one with enormous political control at the top under a regime that has not had authentic electoral opposition in over a decade. It is noteworthy, though a point we can not discuss exhaustively here, that the two case studies cited on which a Bank-sponsored "national educational communication system" proposal for the Philippines were based were Nicaragua under the Somoza regime and Iran under the Shah, two governments popular with "institution builders" but not sufficiently so with their own people, hence their inability to implement the "modernization" model of the center. 102
There are also direct material benefits to consider which accrue locally from education loan transfers. In Marcos' international financial transactions, one does not have to search very far to find cronies close to the palace. PICOP, with 70 percent of all pulp and paper sales in 1977 and which gets most of its earnings from textbook sales, is a joint venture between Marcos associates and substantial American corporate and banking interests. Two of the three paper suppliers are also American, the third owned by close associates of Imelda Marcos. World Bank-funded textbook distribution, currently controlled by interests also identified with Imelda Marcos, is slated to be taken over by government, giving the regime substantially more direct control over the distribution of teaching materials than it has ever known.

As the head of the Consultative Group of countries and international agencies which oversee assistance programs in the Philippines, the World Bank has played a key role in strengthening the dependency links of the Marcos government and preempting or alienating alternate courses of development outside its hegemonic political economic imprimatur. However, the Bank has had to admit both the narrowness and the tenuousness of its program, conceding in a secret political analysis that "the 'technocrats' have been strongly associated with the incumbent administration and with the current economic strategy" and predicted that "their (at least temporary) removal from positions of policy making is likely, should the government change hands." The Bank also made an ironic
admission that under an opposition political takeover, "An
industrial program based on foreign investment would in all
likelihood come under strong attack."\textsuperscript{105} It were almost as if the
Bank did not believe its own rhetoric.

In Chapter Six we will discuss the overall strategic
importance and purpose of TNC and World Bank supported
telecommunication technology transfers with particular reference to
political and technical control and the labor process. Technical
rationalizations, with rare revelations of political motivations as
shown above, have had a deeply penetrative effect on the Philippine
political economy, down to the socialization and ideological
formation of children, but as we shall argue these efforts are
likely to contribute to polarizing the material conditions of
society by further shifting the meaning of "development" and "nation
building" in order to accommodate the needs of sophisticated though
desperately aggressive capitalist power constituents.
NOTES TO CHAPTER FIVE


3. Ibid., p. 10.


5. Daniel Bell, "Communications technology - for better or for worse?" Harvard Business Review, May-June 1979, p. 36.


7. Bell, Cultural Contradictions, particularly the "Introduction."


12. This is the central theme of The New Industrial State (Boston: Houghton Mifflin, 1967).


18. Ibid., pp. 127-128.

20. Ibid. p. 487.


22. Ibid., p. 379.


27. The U.S. paid 25.5 percent and 21.5 percent of all contributions to the World Bank and the I.M.F., respectively, in 1978 and the president of the Bank by common understanding has always been an American. See World Bank, Annual Report, 1978, Appendix F, p. 147, and IMF, IMF Survey 7,23 (December 13, 1978), p. 381. The Reagan administration, however, has not been as amenable as past U.S. administrations toward supporting Bank aid without tougher restrictions, which has brought out high level debates on how much value the Bank holds for U.S. economic and political interests in the third world. See Multinational Monitor, February 1982 and November 1981.


34. James Petras, "A New International Division of Labor?," Merip Reports, February 1981, pp. 28-30. Although Philippine non-traditional exports had made a dramatic leap of 27 percent growth from 1979 to 1981 and is now the leading export earner, the Philippine government says that the country is still heavily reliant on traditional exports (sugar, wood products, coconut, copra, minerals, etc.) that are "taking its grim toll." See Times Journal (Manila), February 11, 1982; Philippine Letter, September 15, 1981; and Bulletin Today May 19, 1981.

35. On the eve of martial law the media were filled with reports directed against the U.S. government and allied agencies, including the World Bank. The mass roundup of journalists, students politicians, teachers, radical economists, labor and peasants, etc., attests to the scope of Marcos' (and probably the U.S.) perception of the threat.
36. C.R. Dickenson to Mr. C.P. Vasudevan, OFFICE MEMORANDUM, International Bank for Reconstruction and Development/International Development Association, June 11, 1973. Cheryl Payer's analysis in her book on the World Bank that the Bank's strategy in support of infrastructure, such as roads, is to facilitate easier access to raw materials to perpetuate external domination can also be applied to telecommunications. The Bank strategy has consistently been to negotiate with as few telecommunication entities in the Philippines as possible, preferably one, to enable it to push forward its national and global planning program for integrated production. See Cheryl Payer, The World Bank: A Critical Analysis (New York: Monthly Review Press, 1982), chapter 4.


38. Ibid., p. 27.


43. Ibid., p. 9.

44. Philippines Daily Express, February 7, 1981.

46. Dickenson to Saunders Memorandum.

47. Dickenson to Vasudevan Memorandum.

48. Ibid. The Memo also noted that the Philippines had responded to "the various recommendations that have been made, particularly those of the latest ITU advisor . . . for setting up a Communications Board . . . [that] would have exclusive powers for licensing and control of telecommunication common carriers and radio services along the lines operated by the FCC in the USA." (Emphasis added.)

49. Dickenson to Saunders Memorandum.

50. Ibid.

51. Times Journal, April 15, 17, and 18, 1982. As part of the integration plan, Minister of Communications Dans called for a single European standard for telephone equipment which brought on claims from local equipment contractors that the move was unconstitutional.

52. Dickenson to Saunders Memorandum.


54. See Robin Broad, "Opening the Door to the Philippines," Southeast Asia Chronicle, December 1981, pp. 10-13. Broad cites a statement of then Bank president McNamara that the Philippines "had implemented nearly all the recommendations on export promotion made in the Bank's industrial sector report."


60. Ibid., p. 8.


66. Interview, Manila, February 27, 1980.


69. Ibid., pp. 788-792. Bowles argues that the education system is established precisely to "pattern the structure of schooling after the social relations of capitalist production."


74. World Bank, Education Sector Working Paper, pp. 79, 94.

75. Ibid., p. 9.


77. Ibid.


79. Ibid.

80. Ibid.


82. NASSA Research report.
Ibid. This report along with a number of critical Filipino academics see a connection between the PCSPE, the World Bank, the Ford Foundation, Ford Motor's involvement in the then current Philippine "Progressive Car Manufacturing Program" and the institutional links to Robert McNamara.


In one document, the World Bank, Educational Sector Policy Paper, pp. 86-87, there are listed the "Objectives of World Bank Assistance to Education." Typically they are reported in the passive voice, such as: "Basic education should be provided for all children and adults as soon as the available resources and conditions permit. In the long term, a comprehensive system of formal and nonformal education should be developed at all levels." The use of the passive voice in this way tends to mask the identity and intention of the actor(s) in such a way as to lend credibility to the technical panaceas which the Bank is prepared to provide, an approach that usually demands clouture on social and political discussion of the "problem."


Ibid., "Foreword."
91. Interview, Manila, February 19, 1980. The interviewee, a consultant to the satellite education project said that the Bank in the mid-1970s favored a cross-country approach and preferred to replicate a radio education program that had been introduced in Iran and Nicaragua. Without Bank support the "Edusat" project was thereby aborted.


93. Ibid., p.42.


96. Ibid., pp. 13-14.


99. Johan Galtung finds that "in accepting cultural transmission the Periphery also, implicitly, validates for the Center the culture developed in the center, for it will then continue to develop culture along with transmitting it, thus creating lasting demand for the latest innovations." This strategy, in fact, was made quite explicit by President Kennedy. See Kennedy quote in Chapter 3, page 1. Also see Johan Galtung, "A Structural Theory of Imperialism," Journal of Peace Research 8,2 (1971), p. 93.


102. Ibid., Bibliography of Executive Summary.


104. Anonymous, "Some are Smarter than Others," a documented pamphlet on interlocking business associations of the First Family of the Philippines, reportedly written and circulated by business people in Manila, 1979. The Orosa family is listed as the controlling interest in the Philippine Education Company which runs the country's textbook distribution services.

CHAPTER SIX

TELECOMMUNICATIONS AND THE INTERNATIONAL DIVISION OF LABOR

Capitalist technology and the capitalist division of labor were... developed not because of their productive efficiency in itself but because of the efficiency in the context of alienated and forced labor: work subjugated to an alien goal.

Telecommunication transfer serves, Andre Gorz, above, argues, as does technology as a whole, the capitalist division of labor. We have discussed its participatory aspects, and we also wish to consider its social consequences. In this chapter, then, we discuss the relationship of telecommunications to the Philippine social infrastructure, focusing on three concerns that reflect on the broad long range effects of its impact. These are:

(1) the effects on the Philippine internal base for science and technology, what does advanced computer technology from the west as a backbone of production mean for Philippine research and scientific and technical expertise?

(2) the effects on the internal labor process, in what ways are telecommunications and closely related technologies likely to transform the social relations of Philippine production, i.e., how does telecommunications relate to the international division of labor?; and
What circumstances have prevailed in introducing advanced communication technology to, putatively, serve the idea of Philippine "national defense" or "national security"?

Inasmuch as technology transfer and the general role of the World Bank in facilitating the process are supposedly carried out as welfare to the "less developed," it is necessary to ask, what and who are being developed by such altruism? In applying the political economic approach we share the marxian understanding of the centrality of political economy to the overall social process of production and reproduction in the spheres of materiality and culture. As Marx expressed it,

The class which has the means of material production at its disposal, has control at the same time over the means of mental production, so that thereby, generally speaking, the ideas of those who lack the means of mental production are subject to it.²

Marx also recognized the intimate relationship of dominant ideological values within a society and the idealized visions of those who seek to propagate them:

The ruling class ideas are nothing more than the ideal expression of the dominant material relationships, the dominant material relationships grasped as ideas; hence of the relationships which make the one class the ruling one, therefore, the ideas of its dominance.³
The scientific and technological foundations of a particular society, therefore, serve to illustrate the general character of domination, while the transformation of labor engendered by its structural requirements relate specifically how direct producers, whether manual or intellectual or both, are subject to its social demands. "Knowledge science," in part, represents the capturing of information channels and the means of portraying state intentions, e.g., the need for growth, for foreign investment, for security, and is for most third world states a key instrument of legitimation, the use of which is well understood as a way of protecting the systemic order.

The Philippine Science/Technical Infrastructure

Looking at telecommunication transfer within the general technology transfer context, there are fundamental limitations to the "new international economic order" arguments calling for more generous terms of trade. It is abundantly evident from the World Bank's and other international public and private interests in Philippine telecommunications that the tasks to which new infrastructural media will be put have global implications that are intensive and extensive and which have not been examined by the leadership of the "Group of 77." Avoidance of these issues will likely place this leadership in an antagonistic relationship
vis-a-vis a growing structurally alienated class of producers further marginalized by techno-functional rationalizations. The centrality in western technological expansion of telecommunications wedded to the computer, what we call, "telecomputercations," (or what some call "telematics") is fast becoming a dominant factor of production in world capitalism. Its extension to the third world represents further penetration of western political, economic, social and cultural life erstwhile separated by relative physical isolation. Politics as a system of conflicting group and personal interests has been steadily losing ground to a more rationalized systemic order of managers and worker-consumers. On a global scale the growing gaps in expertise together with the centralizing tendencies of information technology have reduced the significance of the sovereign nation state as a social formation, particularly in those areas of the world peripheral to the locus of capitalist power. The most peripheralized sectors within world capitalism have been the third world working and unemployed poor, an historical continuity of colonialism on a global scale.

An interpretive framework for discussing telecommunication functions and overall purpose is not one employed in the official literature of development agencies which typically hold up the diffusion model as one producing for the welfare of the poor without reference to who participates in defining needs. Our data lead to the conclusion that the primary beneficiaries of telecommunication transfers to the Philippines are transnational enterprises in
manufacturing, trade, banking, mining, transportation, communications, leisure and service industries, etc. There is a growing literature, of different political orientations, that comes to a common assessment that very few Filipinos have availed of joint venture endowments, and a few studies have begun to document the dominant control aspect of technology transfer, particularly by U.S. and Japanese firms. Runaway indebtedness of the Philippines, increased tenfold in as many years, has greatly weakened Philippine bargaining terms vis-a-vis its creditors and investors and virtually surrendered whatever alternative planning options might otherwise have arisen.

The future burden on the Filipino people that misguided restructuring will bring can not be measured only in terms of financial mortgaging. Authoritarian management has occurred in all aspects of everyday life, and further consolidation of the center as the ultimate source of decision-making for the future will mean less autonomy and articulation of demands from the public. The centrality of power has been greatly augmented by telecommunication technology by way of digital telephone, video display units, telex, data processing and transmission equipment, co-axial and fiber optic cables, satellite television and satellite security systems, all centered within the OECD countries, and participation in the international market system requires associate membership in the OECD-controlled information distribution cartel. Knowledge about the most modern means of communication, rapidly becoming the
dominant technology of production and reducing the importance of mechanical innovation and labor productivity, is highly secretive and almost totally removed from public scrutiny even in the core capitalist states. By the 1960s NASA space research and later the COMSAT bill had assured some of the largest U.S. transnational corporations the cartelization of future technology and functional monopolization of new world factors of production.

We have noted that it was during this period that the United States aggressively developed computers and electronics geared toward "electronic battlefield" warfare in Indochina in which the Philippines served as a key link for the military's satellite communications network. We also described how communications specialists like Lerner, Schramm, Pool and Pye and U.S. AID found ready acceptors of a communication curriculum and technology in Philippine universities and government information agencies that laid the foundations of a high technology instrumentalist model of decision-making. The "developmentalist" approach fixed the idea upon many western-educated Filipino social scientists that electronic media highly correlated with such indices of "modernization" as urbanization and political involvement and thereby rationalized these avenues of information delivery as a national model.

It was not a new approach but one framed upon the historical infrastructural pattern under colonialism that provided international capital with the most efficient access to the country's
productive resources. And though the pattern of metropolitan exploitation was well understood among a growing body of Filipino labor and intellectuals by the early 1970s, the national political forces were not consolidated sufficiently to effectuate new negotiating terms, a weakness which Marcos with U.S. backing was able to seize upon. The Philippine state had always been represented by the principal comprador interests, but the Marcos coup had now allowed a coterie of family and associated capital investors to gain far easier access to local and foreign finance and state protection based on cooperative investment with transnational corporations. New larger scale capital formation with or without formal state ownership has since been geared largely toward the international export sector, bringing with it new communicative requirements and complex technical rules that place the third world in unfamiliar territory and in a more dependent relationship.

In his analysis of capitalism as a world system, Wallerstein, among others, repeats Marx' projection on the centrality of transport and communications technology as a means for conducting the flow of trade and investment within its domain. Wallerstein further proposes that "the size of a world-economy is a function of the state of technology and in particular of the possibilities of transport and communication within its bounds." (Emphasis added.) Other writers specifically concerned with the function of communication technology in the third world, such as Rita Cruise O'Brien, have observed the capitulations of local
scientific communities to the requisite social demands of its transfer. She sees the creation of a new professional ethic that empowers a small number of engineers but which on the whole widens the social differentiations among the various technically educated categories and more so among the general population. The scientific inquiry into technical process which is supposed to demarcate the engineer from "technician" is virtually entirely lost in the acceptance of turnkey technology, and the most knowledgeable categories of third world technical specialists are thus deskilled to a status which the chairman of the University of the Philippines physics department calls "a nation of fixers." However, even reducing Filipino engineers to "fixers" implies a degree of knowledge transfer that is clearly not the case for computer and semiconductor-based industries of which telecommunications is the propelling force. The inability to adapt these technologies to the requirements of a society that might prefer an alternative set of social-functional applications is described by two science writers who point out that

There is no way in which semiconductor devices can be tinkered with at home; no way by which a skilled craftsman could improve their performance. The mode of operation of these devices is so complex and intricate, the scale so small, the interactions so subtle, that all old-fashioned inventiveness proved of no avail.

In the case of the Philippines which has, what some observers call, an "oversupply" of well-trained engineers, they are not being utilized to develop a national scientific base. The
better trained have recently gone to the Middle East to help fill the glut of skilled labor jobs produced by the enormous telecommunications and other infrastructure contracts being developed in the region by TNCs. By 1980 the Philippines was already the world's seventh largest labor exporting nation which in 1979 brought foreign currency remittances valued at some $1 billion (compared to $1.74 billion in total merchandise export receipts). Claiming to protect labor from exploitation by private overseas placement firms, the Ministry of Labor and the government Overseas Employment Development Board have helped expatriate 500 thousand workers and seamen from 1974 to mid-1980 who were required to repatriate 70 percent and 30 percent of their salaries respectively. Seventy percent of the workers have not returned. 8

All executives interviewed within transnational and domestic telecommunications corporations conceded that turnover of skilled engineers was a serious problem, and a few also admitted that extremely low salaries was a major cause of their leaving. At Domsat it was ruefully noted that of their few engineers who have returned to the Philippines most end up working for transnational corporations or setting up their own consultancy or distribution companies. But even Domsat executives admitted to moonlighting as subcontracting agents to smooth the purchase of satellite equipment from TNC telecommunication firms. The obvious conflict of interest is merely winked at where TNC domination over national development is accepted as an unalterable fact of life. 9 ITT-Globe Mackay has
recently been actively recruiting female communication technicians who are considered as unlikely to heed the siren call for their needed skills in the Middle East. For TNCs the Asian female workforce in general tends to be more desirably compliant in accepting low wages, poor working conditions and non-unionized shops.

The fundamental problem of technological and scientific dependency, however, as articulated by the president of the Samahang Pisika ng Pilipinas (Association of Philippine Physicists), is the country's distorted scientific orientation toward applied rather than basic research, an adaptation to the structural and institutional hegemony of western corporate research and development. The distortion manifests itself, he says, in neglect of salaries, fundamental research, grants, scholarships, etc. As a result there has been a serious loss of Filipino research physicists, most of them educated in the west, such that only 5 of 13 in the country are still involved in basic physics research while 15 others have permanently emigrated, mostly to the U.S.\footnote{10}

Another writer on technology transfer, Jack Behrmann, also finds that the Philippines has a relatively well-trained technical force (in "oversupply") yet fails to support indigenous science. The government has promoted virtually no R & D in local companies and has refused to push foreign corporations in this direction. He found that in the Philippines the only R & D likely to take place is in adapting the foreign to the most basic marketing necessity, citing the adjustment of paint content to local weather conditions
as an example. He points to the absence of regulation over quality controls and chastises the government's Technology Resource Center for doing little more than searching for local joint venture partners, licenses, and ways of establishing royalty payment guidelines on imported technology.\textsuperscript{11}

On the planning level, the National Science Development Board (NSDB), a Philippine government body entrusted with setting national science policy, professes the need for "appropriate technology" but does little to assess the circumstances that would allow for its indigenous flowering, instead blaming the lack of national consciousness on the "technological gatekeepers' [who] often related more easily with their foreign counterparts than with their local peers."\textsuperscript{12} In establishing national priorities, an official NSDB country report presented to the UN Conference on Science and Technology for Development in 1979 referred to the objective of "secur[ing] foreign scientific and technological knowledge from foreign sources for evaluation relative to local needs" by way of "appropriate technical-assistance programs." The report also expressed the need for further "integration of existing international systems" through "unification and standardization of systems and procedures"; for improving the "quality of information"; for more pilot projects using the technology of the international systems; and for limiting areas in science and technology in order "to rationalize the assistance extended."\textsuperscript{13} Notable in this evaluative statement is the focus on rendering foreign assistance
through mechanisms established by the prevailing capitalist industrial countries and the absence of any expressed commitment toward autonomous development.

Given the existing technology control pattern in the Philippines, however, it would not be realistic, perhaps, to propose otherwise. As pointed out by one major paper of the government Technology Resource Center (TRC), the author of which has since resigned and left the country, there are few ways by which technology can legally enter the Philippines that is not via intra-TNC channels. He notes that 94 percent of patents in the country are owned by foreigners (U.S.: 60.9 percent), and even in the pharmaceutical industry where the two largest companies (in sales) are 100 percent Filipino-owned, their drug patents are 100 percent foreign-owned. Some 90 to 95 percent of TNC patents in the third world are never used for any other reason than to keep out foreign competition.

Licensing technology to third world countries is another TNC market control mechanism used when product development is not desired or its export value is exhausted, in which case the licensee in the Philippines most often is a TNC subsidiary or a joint venture arrangement. The Filipino author also cited a proposed presidential decree in December 1977 on "compulsory licensing" which the TRC came up with and which he helped design, an agreement used in many countries that automatically opens a patent to the public after two or three years. The decree would also have imposed TRC terms on
licensing agreements to direct them toward more "appropriate technology" with protection for local licensees, and proposed a prohibition on a number of common TNC "restrictive clauses" that restrain the production, distribution, competition, purchase, invention and valuation of patents and commodities. Additionally, there were proposals on royalty ceilings paid to foreign corporations and numerous other incentives to local industrial and potential public interest participation. In the end, however, on the strength of protestations from TNC and U.S.-Euro-Japanese government representatives who saw a national bourgeois challenge to their monopoly position, the proposed presidential decree 1263 was taken from TRC control, placed in the hands of the Ministry of Foreign Affairs and subsequently dropped. The objective of establishing more equitable licensing terms and an agenda for "appropriate technology" considerations was thereby defeated. The author concluded that genuine technology transfer is impossible in the absence of the state having genuine autonomy over its disposition. 14

We discussed in Chapters 2 and 3 the historical aspect of the capitalist growth process and how the leading TNC actors have developed the newest forms of technology to domesticate, integrate, centralize and cartelize science as its empowering and legitimizing instrument in the structure of production and social relations. The rapid "product cycle" of electronic-based technology and the pressures of global expansion of TNCs have extended the
international division of labor to a fuller integration of third world export labor. Hitched to the global production process to the extent that it is currently capable of integrating itself, the Philippines under President Marcos has not demonstrated the willingness to assert any significant degree of scientific or technological autonomy. Unable to reproduce the large, technology-intensive laboratories of the West yet committed to introducing the latest "state of the art" equipment, the government has in effect participated in the colonization of the domestic scientific community by surrendering whatever mode of indigenous industrial research previously existed under the import substitution model to the design and intentions of their TNC investors.

One Filipino science writer discusses the general social and technical consequences of this direction. He claims that

even the very little research and development being done in our universities bears little relation to our development problems. In the industries, research and development is almost nonexistent. And, finally, we import technologies without considering whether or not similar technologies are available or could be developed locally, and without analyzing the socio-economic and ecological impact of these technologies.15

The role of the NSDB, he says, is that of a showcase, that in reality its technology transfer approach is

largely treated as an investment proposal and its technical aspects are only minimally examined, if at all. It is therefore not surprising that no
effective measures have . . . evolved for the meaningful adaptation of the imported technology, with the consequence that the growth of our indigenous technology has been seriously hampered. 16

As in the case of patent control cited earlier, there are numerous restrictive agreements that the TNC imposes on the third world country that structures a pattern of inequality, particularly in high technology transfers. In late 1978 Japan's Overseas Economic Cooperation Fund signed a Y157 million (about $650 thousand) loan agreement with the Philippines to start a "rural telecommunications development project" in northern Luzon. Although no import restrictions are permitted on procurements, the agreement stipulates that telecommunication suppliers, contractors and consultants may only be from "eligible source countries." These refer exclusively to Japan and "developing countries," a way of untwisting loans that is patently misrepresentative. 17 And, in fact, Nippon Telecommunications is the only contractor involved in the project. Even on the most rudimentary forms of communication transfer the self-serving element is evident. AID, for example, has stipulated that paper donated to the Philippines for use of publication of American authors requires the return of royalties. 18

What constitutes the far more serious set of consequences of these kinds of contractual arrangements is the greatly enlarged potential they allow to transfer the western consumption model intact without benefit of mediation or adaptation to the needs of a physically and culturally undernourished people. In place of more
collective grassroots solutions to massive poverty and inequality and a broader development of local resources and knowhow, the corporatist diffusion of communication technology appears not only inappropriate but, as Cees Hamelink argues, enhances private consumerist values that promote greater functional inequality, exacerbate class differences and strengthen the privileged class. Moreover, as the director of the government Technology Resource Center of the Philippines, a U.S.-trained political scientist, points out, the meaning of "appropriate technology" is highly ambiguous, particularly in the absence of a clear technology development program to guide choices. However, while the choices he leans toward affirmatively include narrowing "the widening gap between rich and poor countries" and stronger technology delivery demands by planning agencies like the NSDB, he fails to examine the social choices involved. In our thinking it is the social effects of technology transfer, intended or otherwise, that determine its "appropriate" character.

Telecommunication Technology and the Labor Process

There are two aspects of the export processing-transnational communication model affecting ordinary people, workers, that we wish to consider here. One is the relationship of new telecommunication infrastructure to the number of jobs and two, its relationship to
the changing quality of those jobs preserved or created. Telecommunications and its "grounded" technology, the computer and its software, are likely to be radically destabilizing on societies that have neither the participatory nor the mature scientific institutional structures to accommodate their social and economic demands on a basis of common understanding.

A fundamental contradiction of telecommunications is its advanced technique and physical capacity which is monopolized by TNCs and buttressed by patents and other legal protective mechanisms, that has forced the lowest rungs of the international division of labor upon lower paid, more vulnerable third world workers. In some cases labor intensive communications have yielded to cost cutting in operating expenses. The decline of older technologies like public telegraph and radio message communications in favor of business oriented telex is reflected in the severe reduction of the workforce of Philippine Telegraph and Telephone from 1500 in 1972 when telex was introduced to 1200 in 1975 to 496 in 1980. New telex switching systems are expected to rationalize still further cuts in employment. 21

It is now evident, for example, from the experience of workers at Bell Telephone in the U.S., which has recently expanded into new information services, that computer-based communications has heralded great changes in the workplace. Currently in a growth phase, Bell employment has been increasing but, according to one research analyst, will likely respond by the mid-1980s to corporate
competitive market pressures and the efficiency of new computerized equipment with layoffs. In the 1970s the U.S. (and the Philippines) began a rapid shift toward electronic switching systems (ESS) that brought stored program control to telephone call switching and now permits greatly increased capacity, simplified installation and maintenance, and a high degree of versatility not found in previous switching equipment.

Telephone operators have been greatly affected by these changes as switchboards have given way to electronic consoles with most switching and billing for long distance calls automated, resulting in the loss of 100 thousand operators' jobs. Expansion of telephone facilities, especially in conjunction with its newly developed links to other telecommunication enterprises may very well create many new jobs in the years ahead but the fastest growing sector is likely to be the highly specialized management positions, with continuing heavy losses in skilled craft categories. Growth in the non-management sector, anticipated at 10 percent overall in the next decade, is expected to expand only unskilled, mainly clerical, positions.

The erosion of the skilled crafts among telephone workers has come about largely through the capacity of management to develop a technology efficient in its task simplification, labor displacement capabilities. ESS switching not only vastly outpaces the call handling capability of its predecessor electromechanical systems but also has the capacity for self-diagnosis when breakdowns
occur and forcing centralization and separation of monitoring and repair functions. Switching repair personnel have been scattered and monitored through automatic switching control centers that have converted the worker-dominated central office with video display terminals. Operated by blinking, eye-strained technicians, computerized communication technology has effectively turned them into clerical workers. Harry Braverman described how the routine of the modern day office worker has come to resemble more and more her/his factory counterpart,

subjected to routines more or less mechanized according to current possibilities, that strip them of their former grasp of even a limited amount of office information, divest them of the need or ability to understand and decide, and make of them so many mechanical eyes, fingers, and voices whose functioning is, insofar as possible, predetermined by both rules and machinery.

The export of fully packaged telecommunication technology to third world countries has even more profound labor displacement effects where the indigenous science and technology base is adaptively weak as in the Philippines. Filipino technicians forced to work under the difficult anti-labor laws and poor wages and working conditions under the Marcos dictatorship, have even less bargaining power in holding onto relatively newly acquired technical skills when imported labor displacing technology is introduced. The privately owned monopoly, Philippine Long Distance Telephone Company (PLDT), the peripheral counterpart of Bell, has introduced
ESS equipment from Siemens Corporation of West Germany and the Company plans a rapid move into fiber optics to satisfy the demands of international traffic. Filipino union leaders have complained of the physical separation of workers through job fragmentation which has had effects similar to those in the U.S. of isolating skilled workers, de-skilling the majority, incorporating more decision-making power in management-controlled computers, subjecting workers to more rigid computerized supervision and on the whole making it more difficult for unions to resist deteriorating conditions of employment. In the Philippines there is the added yoke of a new labor code adopted in 1981 that allows management lockouts and denies public utility workers, including those in telecommunications and export processing zone and other "vital" industry workers, the right to strike.

PLDT's operating income during the ten year period 1969 to 1978 rose at an average of 21.3 percent annually while overall employment increased annually at 7.4 percent. But Free Telephone Workers Union officers say that wages have not kept up with these growth statistics, largely because the principal tool in management-worker relations, the right to strike, is absent, and enforcement is overseen by a Marcos-appointed Supervisor of telecommunication industrial relations, Army General Zosimo Carlos.

Union leaders also say that "quality of work" demands that have become a central question in more advanced industrial countries are impossible to press when wages are extremely low. Attempts by
PLDT workers in 1981 to create a *de facto* slowdown were suppressed by government intervention. Moreover, as in core capitalist countries but on a more repressive level, the controlled mass media have been unsympathetic to labor demands in general. Control over media stories concerning labor disputes is maintained through controls by the Ministry of Public Information. 29

Working conditions for third world telecommunication workers can not be separated from the production of its essential components, the semiconductor industry, from which derives an international division of production and labor. A number of studies develop the thesis that electronics has formed the foundation for exponential growth of transnationalized capitalist accumulation and valorization led by TNCs. 30 One of the consequences of global expansion of the microelectronics industry has been to tie together subeconomies of the third world into a rationalized fragmentation of production, akin to the labor process within the industrial states and within the factory itself, creating as it were a global assembly line. The World Bank explains that, "telecommunication networks may be described as the central nervous systems of complex societies, transmitting information and commands between their various parts." 31 Given the center countries' control over these technology networks, the role of third world countries has been almost entirely in the assembly stages of integrated circuit (silicon chip) production, with hardware and software retained securely among the industrial giants.
The relatively labor intensive areas of telecommunications or telematics lay in the tedious and stressful semiconductor assembly processes of bonding microscopic hairlike aluminum or gold wires onto almost invisible silicon-based circuits, baking the tiny chips in 600-1000 degree ovens and testing them with chemicals and electric currents.\textsuperscript{32} While the research and development and capital intensive stages of the semiconductor industry are carried out in the West, specially in California's "Silicon Valley," the assembly stages mentioned above are largely performed by third world workers. According to one in-depth study on the semiconductor industry, this area of production is particularly suited to integrated export-oriented development:

To many Asian governments - excluding Japan - a strong semiconductor industry is central to the strategy of industrialization through the export of light manufacturing goods. Foreign assemblers employ thousands of Asian workers, they generate foreign exchange for the local economies, and their modern plants and space-age products project an image of advancement.\textsuperscript{33}

The study also indicates a sexual as well as class-based division of labor in semiconductor production, some 90 percent of the 200 thousand Asian chip assemblers being poor, single, young women. Traditional social and economic exploitation of women in Asia make them ideal workers from the perspective of TNCs, since they tend to shun organizational militancy and unionization and be vulnerable to various forms of social control. Several studies on
Asian female electronic workers describe the extremely low wages, the poor shopfloor health conditions, the use of gimmicks to force speedups, the promotion of beauty contests and other forms of cosmetic consciousness, sexual harassment by male supervisors and the ease of rapid labor turnover that leaves women workers in early retirement with weak eyesight, without skills and often tainted by various social stigmas for having left their villages and returned wearing heels, makeup and jeans and other outward signs of western lifestyle.\textsuperscript{34}

What is perhaps more significant are the ways in which these globalized third world assembly line workers have become related to their counterparts in the U.S., also predominantly of third world origins - Latino, Chicano and Asian - while the managers, engineers, technicians and marketing personnel are primarily male.\textsuperscript{35} Like overseas semiconductor assemblers, American production workers, some 60 thousand in California alone, are young and female\textsuperscript{36} and are hired on the basis of the expectation that they will not form unions or make collective demands on employers. Moreover, the very real threat of moving the plant to Asia or Mexico coerces American workers into accepting conditions of work, including low pay, over which they have little voice. Silicon wafer fabrication and assembly also requires the use of organic solvents, acids, metallic carcinogens, epoxies, photoresist chemicals and other dangerous toxins such as cyanide and arsenic which workplace health and safety monitoring groups have linked to severe side effects, including birth defects and cancer.\textsuperscript{37}
It appears that U.S. workers' fears may be realized. One study indicates a pattern of employment in electronics that shows an increasing shift of production jobs to the third world at the expense of the center with increasing concentration of skilled and management positions among remaining operations in the U.S. According to the study this will bring further division of labor in terms of "offshore" third world women in production activities and white males in white collar roles. The 6.5 billion peso (§870 million) outlay for ESS equipment, largely from Siemens, in the Philippines may therefore be a boon to some sectors of the German workforce, but, inasmuch as none of the manufacture of the equipment will take place in the Philippines, probably constitutes few if any advantages for Filipino labor.

Third world "offshore" electronic assembly plants have become attractive because of "push" and "pull" factors. The "push" has been the competition among foreign electronic product manufacturers, specially in the semiconductor and other older generation consumer goods such as radios, stereos and black/white television receivers, while the "pull" on these manufacturers has been the attraction of non-union, compliant, cheap labor markets and access to foreign sales. "Pull" incentives include hourly wages ranging form $0.62 in Singapore to $0.17 in Indonesia, with the Philippines offering $0.32. Easy transport of lightweight components and materials with a high value-to-weight ratio offers another incentive to go abroad as air shipment facilitates global integration of plants and offices.
These attractions brought a wave of offshore electronics firms to east and southeast Asia beginning in the early 1960s in Hong Kong, south Korea, Taiwan and Singapore, rapidly proliferating by the late 1960s and moving into Indonesia, Malaysia, Thailand and the Philippines (see Table X), and by the late 1970s the door was also opened by the People's Republic of China. The first electronics corporation to begin operations in the Philippines was the California-based Intel Corporation, followed by 21 other electronics/telecommunications offshore plants including the giants of the industry, RCA, National Semiconductor, NCR, Westinghouse, Burroughs, Texas Instruments, Timex, Telefunken, GTE, Hughes Aircraft, General Electric and IBM. According to the trade journal, Semiconductor International, the Philippines in 1981 held the "largest concentration of American semiconductor companies outside the United States." There are also three major mainly-Filipino-owned and joint venture semiconductor firms, but these are fully dependent on contracts with foreign electronics corporations, usually the same corporations providing the equipment and raw materials. One consequence of this dependence has been the tendency toward mass layoffs whenever the unpredictable international electronics market slows down. Nonetheless, electronics continued to surge into the early 1980s as the Philippines' fastest growing industry, instigating the expansion of new export processing zones in Baguio and Mactan, rising to the top at $134.4 million among the country's
### TABLE X

**U.S. OFFSHORE ELECTRONICS PLANTS IN THE PHILIPPINES AND EAST/SOUTHEAS T ASIA, 1976**

#### Philippines

<table>
<thead>
<tr>
<th>No.</th>
<th>Year Established</th>
<th>Country</th>
<th>Plants</th>
</tr>
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<tbody>
<tr>
<td>1.</td>
<td></td>
<td>AMD</td>
<td></td>
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<tr>
<td>2.</td>
<td></td>
<td>Burroughs</td>
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<tr>
<td>3.</td>
<td></td>
<td>Control Data Corp.</td>
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<td>4.</td>
<td></td>
<td>Dataram Corp.</td>
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<td>5.</td>
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<td>GE</td>
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<td>6.</td>
<td></td>
<td>GTE</td>
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<tr>
<td>7.</td>
<td></td>
<td>Hughes Aircraft</td>
<td></td>
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<tr>
<td>8.</td>
<td></td>
<td>Intel</td>
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<tr>
<td>9.</td>
<td></td>
<td>IBM</td>
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<tr>
<td>10.</td>
<td></td>
<td>International Rectifier Corp.</td>
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<tr>
<td>11.</td>
<td></td>
<td>Litronix</td>
<td></td>
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<tr>
<td>12.</td>
<td></td>
<td>NCR</td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td></td>
<td>National Semiconductor</td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td></td>
<td>RCA</td>
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<tr>
<td>15.</td>
<td></td>
<td>Rheem International</td>
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<tr>
<td>16.</td>
<td></td>
<td>Square D</td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td></td>
<td>Westinghouse</td>
<td></td>
</tr>
</tbody>
</table>

#### East/Southeast Asia

<table>
<thead>
<tr>
<th>Country</th>
<th>No. of Plants</th>
<th>Year Established</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hong Kong</td>
<td>46</td>
<td>1961</td>
</tr>
<tr>
<td>Taiwan</td>
<td>45</td>
<td>1964</td>
</tr>
<tr>
<td>Singapore</td>
<td>30</td>
<td>1967</td>
</tr>
<tr>
<td>Malaysia</td>
<td>23</td>
<td>1972</td>
</tr>
<tr>
<td>South Korea</td>
<td>19</td>
<td>1964</td>
</tr>
<tr>
<td>Philippines</td>
<td>17</td>
<td>1974</td>
</tr>
<tr>
<td>Thailand</td>
<td>8</td>
<td>1974</td>
</tr>
<tr>
<td>Indonesia</td>
<td>6</td>
<td>1972</td>
</tr>
</tbody>
</table>

**TOTAL** | 194            |

**Source:** Mary Allison Hancock, "Electronics: The International Industry," Working Papers of the Culture Learning Institute, East-West Center, Honolulu, 1980, pp. 29, 30, 59.
non-traditional manufactured exports for the first quarter 1980, and helping to push non-traditional export goods foreign exchange earnings ahead of traditional export goods for the first time by year's end. 45

We can not here develop an analysis of the significance of these new sources of foreign exchange except to point out that it has not solved a continuous three year balance-of-payments crisis to which the IMF/World Bank has had to respond with a recent series of "structural adjustment" loans under a "reform program" which the IMF/Bank has overseen, a move that buys time for the regime and gives the Bank/IMF increasing leverage in overall economic decision-making. 46 The official slowing growth of indicators in 1981, including a record single year government spending deficit ($1.3 billion), a balance-of-payments deficit ($560 million), trade deficit ($2.53 billion), real GNP (2.5 percent), debt-service ratio (22.6 percent), inflation (13 percent) and accumulated foreign debt ($15.84 billion), pressed the labor sector hardest. Official unemployment by early 1982 had doubled since the beginning of 1980, with 70 thousand jobs lost in 1981. 48 Strikes and street demonstrations led by labor groups showed major strength for the first time since the martial law declaration. The business press in the Philippines found labor by early 1982 becoming "more militant and more defiant." The government responded with repression and arrests of the more visible trade union leadership. 49 Were it not for escape valves offered by permanent migration (largely to the
U.S. and Canada) and manpower export (largely to the Middle East), the labor situation would perhaps be even more tempestuous.

Apart from these broad statistical and street media indicators of the manifest unrest in the Philippine political economy, there have been on-hand observers who describe the daily conditions of the telecommunication assembly worker. The 1981 PLDT Annual Report cites a ten-year (1972-1981) average growth rate in "salaries and wages" of 22.7 percent (as compared to a rate of 20.5% for all "operating expenses"), but the Report's failure to differentiate management from labor hides monthly wage scales for workers that in 1980 ranged from P410 (about $50) for apprentice categories to P1,010 ($125) for "senior lead mean" with across the board increases pegged by the Ministry of Labor at $33, $17 and $17 after one, two and three years of service, respectively. In the Philippine television manufacturing industry, which is heavily dependent on imported components, materials constitute 74 percent of the total cost of production, according to one study. The study also indicated the extremely low portion of local production costs attributable to direct labor (2.4 percent) and estimated 1977 average monthly payroll for TV manufacturing workers at P526 ($70). Electronic workers' starting wages in the Philippines averaged about $40 monthly in 1979, and about $75 after 2 years of employment. At a (Catholic) Bishops' Conference held in Manila in 1976 it was determined that an urban family of four (which is below the Filipino average) required a minimum income of P3,500 ($470) per month.
The growing poverty in the Philippines has been particularly evident in the urban areas which have felt the brunt of a conservatively estimated 15 percent drop in real wages from 1960 to 1975 and which experienced a rapid 60 percent rise in the level of poverty between 1971 and 1975. Inflation was a major contributing factor, according to AID, which effectively reduced Manila wages by 36 percent between 1970 and 1975 (and agricultural workers' income by 29 percent). It is in these urban industrial areas where, according to the World Bank, the trend has been toward "increasing concentration of manufacturing employment."

Telecommunications as infrastructure and information technology in its rudimentary production phases serve to help establish the proper conditions for carrying out "international factories." As finished technology, telecommunications creates the means for TNCs to divide production processes in different physical locales with coordination firmly centralized in home countries. The actual processes of semiconductor assembly have been called "an international industry par excellence" inasmuch as it encourages easy geographical division of high technology and labor intensive stages. It needs no remote production locations and therefore permits simple and light-weight air freight access. As intermediary goods, semiconductors are usually allowed the waiver of high tariffs, and as non-seasonal items it is easier to physically separate distribution and retail outlets from production centers. Also, since it is an important U.S. export industry, foreign
production centers are important access areas to international retail markets. The prime importance of peaceful working environments to the carrying out of global capital expansion and integration is explained by the Marcos government under the rationale of the need to protect vital industries. The wider "peace and order" role that third world states carry out and the gross violations against the human rights of workers which are implicitly legitimated under its rubric is also closely related to certain functions of telecommunications which are discussed in the following section.

It is useful to note here, however, that the very polarizations of wealth and other disparities in the labor process deriving from the radical separation of mental from manual work bring forth rending contradictions. One writer sees these contradictions in the labor process resulting in the breakdown of the global production system. He argues that high levels of unemployment caused by the general shift to capital intensive technologies will force industrially developed countries to respond to internal pressures by setting up barriers against imports from the third world. Also, automation of the production process which eliminates the need for labor power produces goods, such as TVs, that are of superior quality to labor-intensive processes. Finally, the demand for better quality products through automated techniques and the diminished value of peripheral labor markets will induce cost-saving withdrawals to home country production locations and
will likely bar third world electronics production bases like south Korea from entering the developed countries, instead favoring entry exclusively by other industrial powers. 57

These developments, if at all probable, would not likely occur suddenly, and would put third world states under greater pressure to further widen incentives for foreign investment. Internal pressures from labor organizations will likely force a greater reliance on coercive state policies and technical apparatus in the name of "national security," an aspect of telecommunications transfer to which we next turn.

Telecommunications for the Security State

The expansion of Philippine telecommunications into the satellite information age was justified in reports to the President as serving three constituencies. These are (1) the commercial (broadcast, data transmission, telephone, telex, etc.) and foreign investment (needing reliable communications) sectors; (2) the educational bureaucracy under a more centralized Ministry of Education and Culture, led by an experienced technocrat, Onofre D. Corpuz, 58 and (3) the military establishment, for "national security" purposes. We discussed (1) and (2) at length in Chapters 4 and 5, and we wish to consider here the military constituency with respect to its implied and expressed expectations of information technology.
The most advanced form of communications technology for military applications globally is satellite, and Marcos' demand for it has served not only his own political formula for maintaining power but also the capitalist centers which have applied satellite to the needs of the international transfer of business and defense information. As the largest U.S. military, state propaganda and intelligence installation in the Pacific outside the continental U.S., the Philippines provides the west with a vital requirement for the conduct of cold war policies. U.S. military assistance to the Philippines made a dramatic leap forward from the occasion of the martial law declaration, and important to this assistance has been the transfer of sophisticated police and military communication equipment, including patrol car computers and VHF transceivers and base stations. These together with other advanced combat machinery and extensive U.S. training for Philippine police and military officers have been aimed at stemming internal dissidence and insurgency, and, according to a former U.S. Government intelligence analyst, have turned the Philippines into the CIA communications base for Southeast Asia.

The expansion of U.S.-supported militarism in the Philippines did not begin with martial law but was an extension of the U.S. war in Indochina spilling across the South China Sea. As discussed in Chapter 3, the placement of satellite ground stations in the Philippines was part of the U.S. Defense Department's battle plan in Indochina established with the cooperation of the Marcos
government. While Clark Air Force Base and Subic Navy facility were staging areas for U.S. air and naval combat and infiltration in Vietnam, the U.S. also widened its counter-insurgency/psychological warfare apparatus in Manila. The Southeast Asian regional headquarters of the CIA and Defense Intelligence Agency are there operating a telecommunications regional relay station at Clark and information gathering centers for Indochina and southern China, which provided most of the intelligence on the Chinese invasion of Vietnam in early 1979.62 Manila also hosts the U.S. "Regional Service Center." One intelligence information bulletin claims that "This ultra-modern printing facility functions as a part-open ICA [International Communications Agency] and part-secret CIA propaganda plant" which performed many "psy-war" tasks for the Defense Department during the Vietnam War and is today "a major listening post into the Indochina peninsula."63

One other legacy of the colonial and cold war eras is the ubiquitous monologue heard throughout the world, the Voice of America. Again, following patterns of colonial heritage the Philippines remains a key link in disseminating favorable images of the U.S. capitalist development model to other Asian countries. The relay station in the Philippines, comprising a land area of 2,579 acres and including one receiving and two transmitting sites, is the largest of VOA's 14 international locations. The "receiving site," located in John Hay Air Base in Baguio, retransmits 161.5 hours daily in 13 languages over 23 high power transmitters. Investment
in the three sites as of 1980 was $36.3 million with annual operating costs of $3.5 million. The major target area from the strategic Philippine station is China, and a former director of the VOA claims that the P.R.C. audience for the U.S. information medium "measures in the hundreds of millions - more listeners than in the rest of the world combined."

The Philippines has been a strategic military communication linkage in other ways. U.S. military and intelligence advisors, the best known of whom is CIA counter-insurgency specialist Edward Lansdale, have guided Philippine presidents through the requirements of a firm military defense pact in Asia. The most important communications/electronics organizational affiliation in the Philippines, bringing together the top representatives of the military-industrial complex, is a grouping called the Armed Forces Communications and Electronics Association (AFCEA).

Founded in 1946, AFCEA has grown to 80 chapters including 11 in the NATO region and 7 in the Pacific Basin. Its group and sustaining members constitute virtually the entire network of international electronics/telecommunications corporations together with the U.S. and NATO military hierarchy. Among the four Pacific Basin country members the Philippines is the only chapter with a national as its executive. The regional executive positions in the U.S. are represented by the largest of the military-industrial contractors including TRW, AT&T, Western Electric, GTE, Harris, Raytheon, United Telecommunications, Rockwell, ITT and Boeing
Aerospace, while the overseas branches are largely headed by U.S. military commanders. In 1981 Colonel (retired) Antonio S. Vinluan of Philcomsat was elected president of the 13 year old Philippine chapter that previously had been headed by either American military and major telecommunication corporate executives or U.S.-trained Filipino signal corps officers. Brigadier-General David Sarnoff, former board chairman of RCA, member of the Committee on Communications of the National Citizens' Commission on International Cooperation during the Johnson administration, former advisor to the CIA-supported Radio Free Europe and Radio Liberation and former president and permanent director of AFCEA, proclaimed that,

AFCEA has fashioned a community of interest so closely interwoven that whatever affects the progress of one partner is reflected in the progress of the other.

Among the network of partnerships of which Sarnoff spoke, the Philippines, the biggest Asian chapter with 460 members, represents one of AFCEA's firmest allies. The AFCEA Manila charter "objectives" states that the organization serves "United States citizens and Allied nationals working toward national security involved in the development, manufacture and operation of equipment in the fields of communications, electronics, computer sciences, teleprocessing, intelligence systems and photographic techniques." The Association also claims to have "no commercial or political interests or alliances." Yet from reviewing the Manila
chapter's previous presidents and its 1978-1979 officers, who include executives from PLDT, RCA, Philcomsat, chiefs of communications-electronics sections of the Philippine Constabulary and Philippine Army and domestic electronics distributors for big foreign firms, and considering the restricted membership to U.S. "free world" allies, it is clear that the Philippine chapter was established precisely to foster mutually enhancing commercial, political and military objectives.

An important instrument for carrying out U.S. foreign policy objectives has been the TNCs themselves. ITT is well known among them for its role in destabilizing the Allende government in Chile, but the association of the giant telecommunication corporation and military intelligence goes considerably further back in time. Perhaps the most extensive study on ITT revealed the close cooperation between the corporation's main growth architect Sosthenes Behn, a retired colonel in the U.S. Signal Corps, and the Hitler government, which led to the placement of Nazis on the board of directors of ITT's German subsidiary. ITT also maintained close wartime ties to the pro-Nazi Peron government in Argentina and Franco regime in Spain while at the same time playing a key intelligence function for the U.S. government. In recent years ITT has had such consultants as Eugene Black (former World Bank president) and John McCone (former CIA head). In 1979 the Justice Department dropped perjury charges against an ITT public relations officer in its investigation of the conglomerate's overseas
operations because, according to the New York Times, the Government "wished to prevent the disclosure of information about the names of CIA station chiefs, station locations and contacts and relationships in Latin America."\textsuperscript{73}

Relevant to any analysis of military technology transfer is the part that illegal payments by manufacturers play in the transaction, perhaps even guiding the perception of "need." The significance of illegal payments by TNCs; rather widely disclosed by U.S. Senate and elsewhere in the 1970s, is that where personal enrichment is a major consideration for major transactions, the way is opened for well-financed strategic interests to define the issues and to block entry to more competitive, less compulsory bargaining arrangements. An Arthur D. Little study on telecommunication transfer found that sales of international equipment often involve trade agreements to sell arms that include promises to buy telecommunications equipment as one of the conditions for approval, and similar agreements involving reciprocal trade (the seller of telecommunications equipment agrees to buy raw materials or agricultural products in return), etc.\textsuperscript{74}

The report estimated that "30-40 percent of all international telecommunications equipment contracts are awarded on the basis of political/diplomatic considerations."\textsuperscript{75}

ITT, considered the world's biggest conglomerate, is now known to have made "questionable payments" overseas in the 1970s amounting to at least $20 million, and GTE, one of the largest global
telecommunications corporations, was similarly involved to the amount of at least $14 million, the Philippines in both cases among the recipients. It is not known whether the Philippine military, an important telecommunications client, was on the receiving end. However, it was listed in 1979 by the Philippines Securities and Exchange Commission as a major stockholder of ITT's telecommunication service carrier, Globe Mackay even though two years earlier it was not listed at all. It was also in 1979 that a former career U.S. Army Signal Corps officer, Colonel Alfred K. Ganschow, became president and general manager of ITT-Globe Mackay. Ganschow was also a planning operations officer of the U.S. Government Defense Communications Agency before taking the Philippine post, suggesting possible intelligence responsibilities or connections attached to an ostensibly civilian commercial executive function.

We found more direct foreign penetration on the operations level, with Americans with military and TNC backgrounds holding key positions in the Philippine owned commercial telecommunications system, raising questions about underlying Philippine claims to "national" security. There has, in fact, been a continually tight interface of foreign, predominantly U.S., and local telecommunications expertise. The Philippine Telegraph and Telephone Corporation, a major domestic record carrier, (then a Benedicto group enterprise) was part of Philcomsat in 1970 and run by an American, Charles J. Horne, as executive vice president. Horne, in
Technical backgrounds of telecommunications employees are also suggestive of organizational identity and orientation. Among the 16 candidates that Philcomsat was considering to fill "key positions" in its domestic satellite project, 15 were from Philcomsat, while 11 of the 16 also listed membership in AFCEA, six had backgrounds in GTE, one in ITT, one in GE, four in Page Communications (a big U.S. communication engineering firm in Iran at the time), two in the VOA, two in the U.S. military and one in the Philippine Armed Forces. 80

The significance of American participation in Philippine telecommunication management was that it steered policies into areas with unanticipated outcomes for Filipino partners and led to tensions that partly explain the eventual shift to alternate (national) TNC linkages. During the U.S. war in Indochina (at a time when U.S. supremacy in telecommunications was still unchallenged), Duarte expanded Philcomsat's distinctly military
character by marketing 30 of the 40 leased circuits to the U.S. military, an arrangement that seriously undermined the company financially after the U.S. pullout from Thailand and Vietnam. Britt, as vice president for operations, originally secured an agreement with U.S.-dominated Intelsat to lease space on the IV series satellite for use by Domsat. Britt, together with Potter, had also represented Philcomsat in 1974 discussions with Indonesia, charged with investigating the option of using the Indonesian "Palapa" satellite that was scheduled for a 1975 launch. The result was that Britt and Potter opted for the Intelsat space vehicle which included a far more expensive requirement for 11 meter antennas (most likely to be supplied, as the Philcomsat antennas were, by their former employer, GTE) rather than the 4.5 meter antennas sufficient for the high powered Palapa satellite. Discussing the cross purposes of two countries' business interests, Philcomsat management later, under Filipino control, concluded that "It was a mistake to send Americans to Southeast Asia [i.e., Indonesia] to represent the Philippines."

On the Philippine side, the creation of key personnel and institutional supports in commercial communications assured that modern telecommunications would serve the national security interest. In 1969 Manuel B. Syquio was appointed by the Marcos government as board chairman of Philcomsat. Like many other Filipinos in important communication positions, Syquio moved to Philcomsat from a "reliable" military background. Typically, he
had served in the signal corps of the Philippine Army (AFP), had trained at Fort Leavenworth for a command and general staff course in 1953 (later at Fort Monmouth) and became AFP chief signal officer in 1957. In 1960 Syquio became an executive of International Harvester MacLeod/Philippines (100 percent U.S. owned) until his subsequent appointments to Undersecretary of Defense, to Secretary of Public Works, Transportation and Communication and to Philcomsat.  

Under an authoritarian base of power by early 1973, a semi-official spokesman for the Marcos government reported that the AFP was "setting up a communications system with instant and reliable communications for presidential command and control under all conditions" to enable the President to reach "Philippine Constabulary provincial commanders in any place in the Philippines on a 'direct distance dialing' basis." This, the report said, was part of the "rationale for the President's launching of a Ph6 billion ($250 million) five-year telecommunications expansion program." The plan, undertaken by the proposed merger group of PLDT and Philcomsat and supervised by a U.S. military-GTE contingent as discussed supra, included, as disclosed in a "confidential" Philcomsat report to the President, "a project for a new domestic satellite communications network." The plan was to implement the government call "for the integration of telecommunications" and to make use of television, telephone, telex, high-speed data and
facsimile. The confidential memorandum further encouraged Marcos' endorsement by noting that

Project Donsat also envisages the use of transportable earth stations, which can be air-transported and quickly set up in any area of the country in support of communications for the Chief Executive, for mining or oil explorations and for the military in connection with the national security and national disasters. (Emphasis added.)

Despite TNC partner shifts, the Philippines continues to be tied to the military-industrial objectives of the world's largest arms merchant, the United States, and serves as a strategic outpost of the U.S. Pacific defense perimeter. The stabilizing effects of Marcos' martial law regime from a military viewpoint provided a more reliable ally as opposed to one undergoing internal political conflict. For this reason U.S. military assistance to the regime (the ninth largest among 62 recipient countries in 1976) during the 4 years immediately following the martial law proclamation ($166.3 million) was more than double the 4-year period immediately preceding it. Aside from the transfer of modern weapons the U.S. has provided training for over 15 thousand Filipino military men from 1950-1975 under the International Military Training Program, including most of the officer corps. In 1976, 251 Filipino Army officers received training abroad under the U.S. Military Assistance Training Program (1,167 since martial law was declared). What is increasingly obvious about these forms of assistance is that the
object of their use is no longer rationalized as external (e.g., against China), and that "national security" is now directed, instead, at the growing movement of dissident Filipinos. This is argued in an important study on Philippine militarism which cites former Senator Strom Thurmond reporting before the Senate Armed Forces Services Committee that

The mission of JUSMAGP(Philippines) is to assist the Philippine Armed Forces in attaining the capability to maintain internal security . . . . During recent years the primary effort of JUSMAGP has been to assist the Philippine Army in increasing the number of combat battalions.88

In third world urban areas U.S. communication technology has been highly instrumental in support of right wing police functions. AID's "Public Safety" program through 1971 had already trained or supplied over 1 million foreign policemen "in routine police matters" as well as "in paramilitary and counterinsurgency techniques developed in response to the threat of civil unrest."89 From 1961-1971 the Philippines received $4.2 million of "public safety" assistance and $12.3 million overall, 1957-1974, before the program was phased out.90 About half of this form of assistance, provided to over 50 other countries, was for specialized police equipment that included radios, walkie-talkies and computers for "centralized data banks on political activists"91 that has led to the arrest, torture and murder of thousands of non-combatant men.
and women without benefit of trial. AID described its program in the East Asia region (including the Philippines) this way:

Specifically, the Public Safety programs will focus on the development of key institutional elements such as communications networks and training systems; on better administration and management leading to the effective use of resources; the improvement of rural paramilitary police ability to prevent and deal with guerilla activities; the provision of effective police services at the hamlet level; the improvement of urban policing, including the humane control of civil disturbances and riots.92

While AID's "public safety" program may have terminated, other AID-supported programs, such as the International Narcotics Control Program, have replaced them. It is also evident that the target of these assistance programs, like recent U.S. military arms transfers, is not a foreign enemy but Filipinos themselves who have opposed autocratic rule. One recent extensive study on global arms sales by Andrew Pierre found that "the principal motivation for increased new [Philippine] purchases in the latter half of the 1970s was not any external threat, which is practically non-existent, but the Muslim insurgency in the South." Marcos asked the U.S. for $1 billion (later reduced by 50 percent) as payment for the use of its bases, half of this as military assistance, and Pierre found in this agreement that currently "the United States is making available substantial defense equipment, which, in effect, is a form of rental for the bases."93
The "modernization" program of the Philippine military, including its communications technology transfers, is indeed directed largely against the Filipino Muslim south but is also focused against the expanding bases of the communist New People's Army. A Philippine AFCEA publication indicates that

The AFP has embarked on an ambitious 5-year telecommunication modernization program aimed at upgrading and expanding the existing military communications network nationwide. Present troposcatter links in Southern Philippines will be replaced by a digital microwave network. Existing step-by-step telephone exchanges in at least 4 AFP camps will be totally replaced by new digital switching facilities as part of the telephone modernization program designed to provide distance dialing capability within the AFP telephone network.94

Central to these "modernization" plans is the specialized equipment and training that foreign TNCs and military are ready to provide. Rockwell International, for example, one of a number of major U.S. weapons contractors, trained 10 AFP officers and enlistees in 1979 "in connection with the acquisition of digital equipment for the Mindanao Microwave System."95 As part of Japanese reparations payments to the Philippines for damages incurred in World War 2, Nippon Electric shortly after the martial law declaration introduced microwave UHF and military telephone exchange equipment "to improve the semi-integrated communications system of the Bureau of Telecommunications and of the Armed Forces Command Center" and set up for an "integration system [that] would
permit the President to dial and directly call up any provincial governor or provincial commander. Speaking before the Philippine AFCEA chapter at the Manila Polo Club in July 1979, Rockwell vice president Don L. Miller cited the strategic importance of "very high speed integrated circuits" (VHSIC) for the enhancement of military "intelligence" but stressed the basic underlying requirement of appropriate political organization. According to Miller,

This [VHSIC] abundance of technological advancement must be managed well and efficiently. Political efforts to do so guarantee a continued place in the spotlight for electronic technology for many years to come. (Emphasis added.)

Telecommunications has also been discussed as an instrument for improving border surveillance among the ASEAN countries. The use of the Palapa satellite has been considered to establish improved links between Davao City in the Philippines (a strong NPA area) and Menado, Indonesia that would handle voice, telegram, ship-to-ship, ship-to-shore and communication with patrol crafts. Similar proposals for defense communications between the Philippines and Malaysia have also been discussed between them focusing on links between the oil exploration region of Palawan in the Philippines and Sabah, which is a major base of insurgent Filipino Muslims.

We can not give a full account here of the strategic relationship of arms transfer, including its most sophisticated
electronic battlefield hardware, to the overall role of telecommunications in the Philippines. One detailed study that looks at the general relationship of TNCs and military telecommunications technology shows that arms transfer has become a major source of international capitalist exchange and that TNCs with vast reservoirs of state R & D funding have been the major producers of the global weapons industry. The study also points out that electronics is the most secretive and protected aspect of military technology transfer because it constitutes the most formidable edge in contemporary military superiority, concluding that "The development of military electronics widens the security and power gap between those who command the new technology and those who do not."  

The question of "national security" for the Philippines ultimately turns on whom those with power, authority and legitimacy define as "the enemy." The close integration of foreign capitalist states and foreign private interests with peripheral counterparts on the basis of overwhelming inequality is integrally related to how the process, sociology, and evaluation of personal and social needs are determined. Social interaction in the Philippines is conditioned by its historical colonial political economic linkages and its contemporary dependent relations upon core capitalist states, specially the U.S. For this reason, the appropriate unit of analysis for telecommunication or other form of technology transfer can not be a single country, much less one based exclusively on
technical relationships. In the name of security or privacy, information or open discourse concerning the terms of technology and other capital transfers is hidden from the public domain. TNCs and their military clients around the world cover their claims to vast private accumulation and repression in a lexicon of "nations," "national security," etc., a convenient fiction employed to disguise their class makeup and intentions. It is not a leak proof vault, however, because disinformation and oversecurity seem to generate their opposite intentions. For example, against the generally favorable evaluation issued for the public by the World Bank on behalf of the Marcos regime, a leaked "secret" Bank report admitted its real in-house reservations that despite rises in foreign investment, "in 1980... more than five times the annual average for the previous decade," the Philippines faces problems of serious political instability:

The combination of Marcos' declining popularity, the tenuous support for the traditional politicians, and the absence of support for the technocrats leaves a vacuum that may well be filled by the military... Furthermore, one consequence of the military's greater involvement in the operation of state-controlled enterprises has been that the armed forces now have greater institutional stakes in maintaining this system intact, and therefore may be more prone to intervene in order to protect these interests.101

This projection not only reveals major implications for World Bank/IMF involvement in the regime's economic survival but also suggests future requirements of the telecommunications
infrastructure to help maintain what the 5-Year Plan sees as a "nationwide telecommunication regulatory system... [for] vigilance in the interest of national security."102

Where once these issues were resolved through the expediency of single nation colonial domination, today the Philippine economy operates with a set of multiple international actors as well as profound divisions among its own people. The U.S. TNC scandals in the Philippines in the mid-1970s certainly weakened U.S. TNC bargaining power vis-a-vis the Philippines but is really only a reflection of larger world forces emerging out of the full reconstruction of western European and Japanese capital that has qualitatively affected the relations among the capitalist states that are once again conflicting over national vs. international approaches to the division of power, labor and technology. The future of Philippine "security" will take on new meanings as the world context changes - and in response to those who come forward to shape the new material and communicative basis of exchange between the center and periphery.
NOTES TO CHAPTER SIX


3. Ibid.


5. Rita Cruise O'Brien, "Technological factors in internal communications," Media Asia 5,2 (1978), pp. 103-106. O'Brien points out that in third world countries the introduction of advanced technology tends to create a small professionalized sector, a "professional mystique" and the hegemony of engineers, further dividing the ranks of technically trained workers. She argues that transfer of technology can not be separated from technical, economic and social issues. Advanced technology is more than equipment, it involves a new form of social organization.


11. Jack N. Behrman, Industry Ties with Science and Technology Policies in Developing Countries (Cambridge, MA: Oelgeschlager, Gunn & Hain, 1980), pp. 57, 133, 149, 157. The absence of an analysis of technology transfer from the perspective of capitalist dynamics is a basic weakness in Behrman's approach. Without it the foibles of peripheral capitalism certainly do often appear "irrational." Another study on technology transfer by a critical third world researcher who worked for the Philippines Technology Resource Center strikes much closer to the political economic conflicts that bring about poor planning choices in the peripheral setting. See George Aseniero, "Multinational Corporations and Technology Transfer" in Multinational Corporations in the Philippines eds. Wilfredo Clemente et al. (Manila: Technology Resource Center, 1979), pp. 43-103.


13. Ibid., "Introduction."


16. Ibid., p. 9.


20. Wilfredo Clemente, "Technology Transfer in the Philippines," paper presented at preparatory conference for UNCTAD V, Tagaytay, December 9-11, 1978. We have been arguing that technology transfer can only be fully understood in the context of the forces that are involved in shaping the market system and its concomitant value structure. Stephen Hymer argued that, "It is not technology which creates inequality; rather, it is organization that imposes a ritual judicial asymmetry on its use of intrinsically symmetrical means of communications and arbitrarily creates unequal capacities to initiate and terminate exchange, to store and retrieve information, and to determine the extent of the exchange and terms of the discussion." (Emphasis original.) See his, "The Multinational Corporation and the Law of Uneven Development," in *Economics and World Order: From the 1970's to the 1990's*, ed. Jagdish N. Bhagwati (London: Collier-Macmillan, 1972), p. 126.


25. Howard, "Brave New Workplace," pp. 23-24. Vincent Mosco, a sociologist now at Temple University, proposes that it is not simply a matter of technical consequences that workers are undergoing job strains, rather it is change brought about by the "recognition among ruling class interests that information resources are becoming more vital to capital, for accumulation, legitimation, and repression..." See his, "The State and Information Resources: Theoretical Perspectives and Political Practice," a paper presented at the Annual Meeting of the Association for Education in Journalism, Boston, August 10-13, 1980, p. 19.


28. PLDT, Annual Report, 1978. These figures do not reveal what categories of employment were so affected. One study shows that the United Kingdom telecommunications industry lost 23 thousand jobs from 1974 to 1978 while the U.S. Western Electric workforce was reduced from 39 thousand to 19 thousand from 1970 to 1976, jobs, he claims, that are not likely to find their way to the third world. See Raphael Kaplinsky, "Micro-electronics and the Third World," Radical Science Journal No. 10 (1980), p. 40.

29. Interview, Manila, February 27, 1980.


40. Business Asia, April 30, 1976.


42. Ibid., p. 59; Ibon (Manila), No. 47, July 31, 1980; and Semiconductor International February 1981, p. 74.


45. *Ibon*, July 31, 1980; and *Bulletin Today* (Manila) May 19, 1981. Of the total of $5.79 billion in export earnings for 1980, $2.92 billion (50.4 percent) was in non-traditional exports.


50. Interview, Free Telephone Workers Union officer, February 27, 1980.


52. Ibid., p. 78; Grossman, "Women's Place," p. 10; and Interview, FTW Union. According to the World Bank, 52 percent of families in the Philippines had 6 or more members. See its study, *Aspects of Poverty in the Philippines* vol. II (Washington, D.C.: December 1, 1980), pp. 10-12. (Dollar conversion rates are based on 7.5 pesos in 1976 and 8.0 in 1980.)


58. Corpuz is currently the Minister of Education and Culture. Previously, he had been director of the Development Academy of the Philippines (a high level government research center), president of the University of the Philippines, director of the Fund for Assistance to Private Education and a member of the Board of Governors of the East-West Center in Honolulu. In The Philippine Official Review (Pasay City, Philippines: M & M Publishers, 1967), p. 348, Corpuz is listed as having been a regular lecturer at the Armed Forces of the Philippine Training School, the National Defense College, and the Command and Staff School, Philippine Armed Forces and an occasional lecturer at the YMCA, Knights of Rizal and the National Intelligence Coordinating Agency - the Philippine counterpart of the FBI and CIA combined.


61. John Marks cited in ibid., p. 34.


63. Ibid.
There have been four important post-War Philippine-U.S. military agreements: the Military Assistance Pact of 1947 which has provided arms, ammunition, supplies, equipment, a Military Advisory Group and the training of Filipino officers; a Military Bases Agreement, 1947, allowed the U.S. to retain sixteen bases in various parts of the country and to enjoy certain extraterritorial rights of jurisdiction thereon, subsequently redefined to rental agreements; the Mutual Defense Treaty of 1951 provided that in the event of an armed attack on either country, each was obligated to "act to meet the common danger in accordance with its constitutional processes"; and the SEATO agreements of 1954 established to block the spread of communism within the region.

The other Pacific Basin members are Japan, south Korea, and the Marianas.

74. Jack E. Cole and George S. Li, "An Analysis of Domestic and Foreign Small Earth Station Markets," an Arthur D. Little study for Office of Telecommunications, U.S. Department of Commerce (Washington, D.C.: 1976), p. 122. This study also noted (p. 122) that the sale of telecommunication equipment to other governments is often a condition for agreements for U.S. arms transfers, according to a review commissioned by the U.S. Office of Telecommunications.

75. Ibid.


77. Philippines Securities and Exchange Commission, financial statements and records sections, Globe Mackay Cable and Radio Corporation file.


79. Philippine Communication Satellite Corporation (Philcomsat), Memorandum, May 7, 1974; and interview, Philcomsat executive, February 26, 1980. Also see discussion John Britt in Chapter 3.


81. S.J. Duarte to M.H. Nieto, Memorandum, Philcomsat, April 4, 1974; and interview, Philcomsat executive, February 26, 1980.

82. See Rebecca Jones, "Satellite Communications: Indonesia's Bitter Fruit," Pacific Research and World Empire Telegram, May-June 1976, p.3, who notes that the Indonesians paid over $2 million per 4.5 meter antenna ground station (much of it
in "questionable payments"), while Stanford University designed 100 similar stations for Alaska which cost a total of $12 million, or $120 thousand per station. The Philippines originally estimated the cost of 11 earth stations (1 using a transportable 4.5 meter antenna and 10 using fixed 11 meter antennae) at $14 million or $1.27 million per station. Another study estimated that the cost of 5 meter earth stations in 1975 would have been $50 thousand and down to $25 thousand by 1980. See Norman Abramson, "Summary: Palapa for Data Communications," unpublished paper, University of Hawaii, n.d., ca. 1978. On other cases of questionable payments to TNC military contractors, see U.S. Senate, Multinational Corporations and United States Foreign Policy, Hearings before the Subcommittee on Multinational Corporations of the Committee on Foreign Relations, 94th Congress, First Session on Political Contributions to Foreign Governments, Part 12, May 16 and 19, June 16 and 17, and September 12, 1975 (Washington, D.C.: 1976); and Helena Tuomi and Raimo Vayrynen, Transnational Corporations, Armaments and Development (Tampere, Finland: Tampere Peace Research Institute, 1980), p. 131.

83. Interview, Philcomsat executive, Manila, February 26, 1980.

84. The senior vice president of Domsat is a retired colonel of the Armed Forces of the Philippines, trained at Fort Monmouth, N.J. in communication electronics. Philcomsat is run by several retired U.S. signal corps officers, and its Board of Directors includes the Minister of Defense, Juan Ponce Enrile. Armed Forces (retired) Colonel Antonio Crisostimo is vice president of RCPI, the largest private telegraph operator. Former Colonel Zosimo Carlos, assistant director of the Telecommunications Control Board, is now a General and deputy commander of the 2nd Army Infantry Division. The president of Retelco, Severo Santiago, was a U.S. signal corps officer for the Allied Intelligence Bureau during World War 2, officer-in-charge of Okinawa Wire Communications System, and a member of the Rotary Club and an American Legion post commander. The director of the National Telecommunications Commission (counterpart of the FCC) was (as noted in Chapter 3) commander of the Philippine Civic Action Group in Vietnam.


87. Domsat, Memorandum to President Marcos, February 8, 1974.

88. Cited in Bello and Rivera, The Logistics of Repression, p. 15. Other data on U.S. military arms and training for the Philippines are from this essay unless otherwise noted.


90. Ibid., p. 232; and Bello and Rivera, The Logistics of Repression, p. 29. Total Office of Public Safety assistance for 1961 to 1971 was $282.8 million (Trojan Horse, p. 225), primarily to Southeast Asia (two-thirds) and in particular to Thailand and Vietnam. About one-third ($3.9 million) of the total Philippine allocation was given from 1969 to 1973 (Logistics of Repression, p. 29), contributing to the climate of police/military repression.

91. Stein and Klare, Trojan Horse, p. 226.

92. Ibid., p. 225.


94. AFCEA Quarterly Newsletter (Manila), October-December, 1979.

95. Ibid. Rockwell International, maintains 120 subsidiaries in 30 countries and has been a major participant in "public safety" programs for the Brazil police and the secret intelligence system of Iran, under the Shah, for monitoring civil and military communications in the Gulf region. See Tuomi and Vayrynen, Transnational Corporations, pp. 143, 150, 190.

96. Times Journal (Manila), February 15, 1973; and interview with NEC managing executive, Manila, December 18, 1979. This
transfer, valued at $10 million, represented Japan's final reparations payment to the Philippines, and was delivered to the Department of National Defense and Philippine Constabulary.

97. AFCEA (Manila), "Souvenir Program," p. 15.


100. Tuomi and Vayrynen, Transnational Corporations, p. 53.


CHAPTER SEVEN

TOWARD A CONCLUSION

We have covered a great deal of space, sea and terrain in this study in an effort to discuss some of the wider parameters of communication technology that find scant attention in most academic literature, including mainstream communication studies. That little has been written using this approach is no wonder since the critical and political approach to communications is one encouraged neither by the TNCs who control the long distance telecommunication media, national and international, nor by the major print media, most of them also under TNC control. And relatively few academics are apparently willing to bite the corporate hand that currently feeds much of university research.

Our foci have been temporal, spatial and critical looking at a particular period of Philippine history during which transnational corporations and their partners have come to impose themselves in new ways upon peripheral social formations. We have employed the more critical dependency writers in this task, particularly those who share the world capitalist perspective. There are several conclusions we have reached that substantiate this perspective as it
relates to the mode of production in the third world and to the specific role of advanced communications technology.

From the understanding we share with the marxian, particularly critical marxian, methodology, we posed several questions derived from the dialectical and historical relationships of politics to economics, of ideology to capital, and of science and technology to production. We investigated the ways in which a particular part relates to the whole of international communications; what are the specific linkages that bridge that relationship; what discourse is taken up over the dominant media and by what speakers; how and in what ways these usages are organized and appropriated within an historical perspective; and what are some of its social consequences. Undoubtedly, there are many other ways in which these questions might be posed or arranged, and we make no claims on absolute truth in these matters. Yet we have discovered along the way what seems to be a striking clarity and coherence among these and related questions that fit within the general political economic framework with which we began.

There are many levels of communicative discourse, and an abundance of literature and interests in communication as a field of study are testament to this. However, it was the absence of explanation or curiosity about the aspects of communication related to the organization of work, leisure and power in society that led to our studying a larger canvas. As TNC control over communications has become increasingly obvious, there have arisen major challenges
to the "developmentalism" paradigm of techno-functionalism and the apolitical explanations of its intentions and objectives. There are several interpretive associations with "structural analysis"; our's contests the technological determinism of "developmentalism" which is itself a classless, linear, hegemonic attempt at structural analysis.

In our Philippine study we found that the evolution of telecommunications closely followed particular phases of political economic history shaped by the forces of world capital. Telegraphic transfer was used by U.S. troops in the quelling of the Philippine revolution and was expanded by U.S. Army engineering corps with the consolidation of its imperial conquest. Once this military objective has been achieved and an infrastructure laid down, the private corporate sector came in with commercial electronic media, eventually passing on its older capital to local owners and operators while maintaining control over the advanced and leading technology sector. From a core capitalist perspective, communication has now arrived as the leading production technology internationally.

In the 1980s "leading edge" technologies have been extended to embrace a considerably wider spatial and functional network of core economies and subeconomies under transnational industrial and finance capital. An international bourgeoisie and its subaltern partners have cooperated in various peripheral production settings and infused communication/information channels as instruments of
U.S.-western European-Japanese domination. Telecommunications thereby support in the name of "national integration" a web of production centers and subcenters, helping to make the peripheral economy more dependent on its structural linkages to core capital states and on the flow of productive and ideological materiel that cross over them.

As long as the Marcos government accepts private ownership as the mainstay of Philippine economy, TNCs will continue to find intermediaries to the local economy according to a rule system with which they are most familiar. RCA, ITT, C&W, Siemens and NEC have thus linked themselves to key personal power brokers in the local economy, and the preservation of this arrangement is one in which TNC, state and local bourgeoisie all have vital stakes, though not equal stakes. For its part the regime and its backers enjoy the perquisites of their own perpetuation while the TNCs enjoy captive classes of producers and consumers.

Information transfer mechanisms have dominant-dependent relationships on several levels. One is obviously the great direct financial costs to the third world to invest in TNC manufactured and supplied automatic, digital, voice/data/record/broadcast telecommunication systems, particularly in light of their debilitated economic bases. A second is the indirect financial costs of infrastructural support systems: for terrestrial cable laying, road building and for office requirements - from Xerox duplicating equipment, to ITT PABXs, to Sony VTRs, to Siemens teleprinters, to
IBM computers, to Canon calculators, etc. Each separate support technology is concentrated in the hands of a few giant global corporations, but the whole of the communication/information system is integrated functionally, and increasingly financially, within an international inner circle. A third is the dramatic change that automated production technology will have on the workplace, making jobs and the quality of jobs more and more determined by expansion and ultimately by foreign managerial decision-making. Four is the concentration of information access that establishes new rules and rates for conducting communication, particularly over long distances. A fifth, and the most difficult dependency issue to evaluate, is the social cost of allowing TNCs the means by which to continue formatting and programming what ordinary people read, hear, watch, wear and ultimately taste. Even when the cultural packaging is altered as it often is for local appeal, such as the use of the Pilipino language in advertising, the use and style of popular media remain essentially formulated from outside, though all too frequently deceptively characterized as depicting either local or "universal" phenomena. Advertising, and the consumerist cultural inculcation behind it, has clearly succeeded in circulating capital and commodities from Madison Avenue to Manila and beyond.

The historical proximity of the Philippines to its colonial mentor is found reflected in the leading role of Philippine communications in relation to the rest of east and southeast Asia.
and within ASEAN, one that is continually incubated via the U.S.-Japanese-European expansionary pipeline. The gust of satellite and submarine cable building in the past 6 years has not occurred because the Philippines necessarily took the initiative. We noted, in fact, how historically U.S. military interests and TNCs "requested" a communication network in the Philippines as part of the wider electronic battlefield in Indochina. Today, the U.S. military, the TNCs and international banks remain the primary users of telecommunications on all levels from launch to transmission to record technologies.

The integration of technology at the functional level is the practical aspect of larger material interests. This becomes clear at the level of the two main information uses, marketing and management, which we have documented to be dominated again by the TNCs. We see then that telecommunications contain productive, distributive and circulatory attributes and that all three are highly concentrated by ownership and application. For the Philippines, impoverished in its own technological and scientific foundations, this suggests a much greater degree of dependency under the particular model girding it, the export production program, than under even the previously unsuccessful model of import substitution; unsuccessful, we suggest, under the human life and macro-economic indicators which we have applied.

Given this structure of domination we can assume a transformation of society in the social sphere, that is to say,
foreign political economic domination over everyday life through the instrumental applications of telecommunications and affiliated technologies. Telecommunication access for the "ordinary user" has withered in favor of high technology resource allocations for TNC users, with special access rights and with direct tax and duty subsidies going to the international carriers and particularly favoring the Benedicto (Marcos) - Cable & Wireless communication group. And the preponderance of TNC ideology through the private ownership of broadcast transmission and sponsorship of programs gives them special privileges in organizing the political and material values of the populace.

The declining physical and cultural life of the majority conflicts with these infrastructural sources of control at a fundamental level. But there has not arisen in the Philippines a major debate on the role of technology, the conflicting issues focussed on more hand to mouth concerns. However, even the better-fed classes, including the government technocrats, for the most part have raised few demands about the transfer of turnkey technology beyond certain equity arrangements and assurances of its "state of the art" calibre. This gives some indication of where they stand on the question of technology dependency. It would seem that the Philippine national bourgeoisie as a whole tends to accept this form of hegemony, which is also understandable given their socialization to western capitalist culture, rewards and ideas of legitimate grounds and forms of contention. Marcos' prime minister
is a Wharton M.B.A. graduate and many of his other leading technocrats have high-powered U.S. university and military training credentials.

The effect of this structure and substructure of hegemony is to suppress the agenda for the larger issues of domination, allowing Marcos to play the "nationalist" by responding to some of the economistic demands. The demand for higher military base rentals, rather than the removal of foreign military, is thus made into a significant event. Various occasions for inaugurating new telecommunication technologies, as noted in Chapter 3, likewise were cast as major national achievements, disguising the problematic nature and purposes of such transfers, which we see as relating to the global rationalization of production and division of labor rather than to national development. These circumstances are not specially unique to the Philippines but rather are part of an internationalization of domination founded on core state cooperation and peripheral marginalization for which third world workers, including those on the "off-shore" semiconductor assembly lines, are providing the surplus and paying the costs.

The contradictions of this advanced division of labor become apparent after examining some of the direct social effects of core state telecommunication workers. The extension of production to extraterritorial export processing zones has occurred concurrently with rising unemployment and recession, bringing greater pressures upon the core economies. At the same time the core industrialists
and financiers realize that the withdrawal of capital and commitment from its peripheral outposts will undermine the legitimacy and power base of some of its firmest allies, including the Philippines, leading to instability and revolution. Even the socialist state formations like Poland, we would suggest, are not immune to overextending their dependence on world capitalism and then finding themselves quaking from internal management crises. The lessons of "Solidarity" are instructive.

The scientific and technological preemption of third world productive forces includes not only the direct transformation of factory machinery but also the processes of industrial labor. In the way that the conveyor belt socialized early industrial labor, the microscope and computerized work station atomize them. The factory environment, in fact, may no longer be logistically necessary from certain capitalist perspectives. Smaller units of production physically separating workers and monitoring and pacing their work routines and output by computer is becoming the new production standard, a weapon that management is able to use to extract greater surplus while asserting greater shop or office floor discipline and authority - modern day Taylorism.

The significance of technological dependence for third world nationalism is also of considerable magnitude. Under a regime that has surrendered most of its independence in shaping its physical environment, the state leadership of the Philippines has compromised its claims to national autonomy. The nationalism that survives in
the post-Marcos era will probably consist of varying efforts at recovering the country's patrimony. Threatened by mass-based nationalism, "national democracy," which tends to be spontaneously anti-imperialist, the Marcos government is in the position of having to negotiate on behalf of world capital to protect its credit rating and its local power base. If anything, the confidence the U.S government currently projects, evocative of the old imperialist alliance, has given more clarity to the issues. Under such an outspoken assertion of core power, it becomes increasingly difficult for the Marcos government to disguise the international role of the Philippines and his office. If challenged by workers and increasingly industrialized peasants, government controlled ideological channels and collective consciousness formation would either have to incorporate new "world citizenry" themes or respond to intensified alienation with greater threats of repression in order to protect the privileged class position of the "New Society" elite power structure.

The critical understanding that we brought to the debate on technology leads to a conclusion that its immanent dialectical conflicts are no less than those of the larger social context in which it functions, even if less obvious. To suggest, however, that technology by itself has become the transforming agent of history would be to give animate status to the inanimate, perhaps the crudest form of anthropomorphism. Corporate capitalist ownership of technology has historically included the appropriation of use
functions, and increasingly this appropriation has structured markets based on functionally integrative data networks whose storage units are being taken over by private TNC-controlled groups like the Information Industry Association. The end uses of telecommunications (or "telecomputercations") under ideal conditions might in some ways resemble McLuhan's "global village," although McLuhan failed to consider the repressive state functions that such a technological nerve network would engender.

The form and content of technology are, then, related to the particular social organization that governs its use. A "post-ideological" representation of this reality might indeed be the severest manifestation of its manipulative potential by inducing believers to participate in, even value, their loss of identity and critical consciousness. Bell and others have seriously misrepresented technology as being devoid of political and social class interests. Even if a facsimile of such a society were to exist, it would not emerge out of capitalist enlightenment but as a rebellion against it and all its instrumental ordering of human behavior. The ideological tenets of the "technological imperative" have, however, bred an unquestioning faith in the beneficence of computers and the acceptance of specialization and expertise as categories of progress without much public debate on the specific goals that are to be pursued or the resources that are to be invested.
If technological secrecy undermines the well being and participation of ordinary people in the core context, the periphery is devastated by its growing participatory decertification. The Marcos government is caught in a contradictory situation of needing a continuous technological fix in order to remain modernly attractive for TNC investment while at the same time having to make greater concessions to foreign "development" and credit institutions despite the failure of their putative welfare projects. The relative autonomy of the Brazilian state that Evans discusses is not the appropriate context for discussing more marginalized countries like the Philippines which are still in the stage of trying to build a local capital base. Declarations by the Philippine Communications and Transportation Minister of the government's intention to force an integrated telecommunication system based on the German digital equipment standard means the immediate obsolescence of North American standard local telephone franchises and equipment in the 12 regions of the country in favor of a private national monopoly, PLDT. This direction, unpopular with small entrepreneurs, could build wider political alliances between the leftist National Democratic alliance and lower level bourgeoisie.

If the economic base weakens further, the resort to ideological remolding and repression will intensify. The Marcos regime already has most of its youth in uniform, either in military service, ROTC, "citizens army training" at the high school level or the national loyalist youth corps, Kabataang Barangay, led by
Marcos' eldest daughter. Under Benedicto's national tri-media enterprises and palace connections to domestic satellite and cable, the regime can rely on easy access to the public for any values or imagery it may wish to inculcate. Telecommunications, the most advanced instrument for peripheral social penetration ever devised, tends to take on a totalitarian character in the hands of such instrumentalist regimes. And like client state wars fought on behalf of imperialism, such regimes may be providing the test sites for later repressive technological applications within the center.

The concentration of information systems, including its "entertainment" and "news" formats, augurs new scenarios for ideological remolding, and within the U.S. the rewriting of "the American dream." The transfer of this technology to societies not sufficiently trained in either the technical or critical understanding of its uses or potential has imbedded its hegemonic design, regardless of what the social formation happens to call itself. The transformation of social functions and the transformation of knowledge designed to accommodate those functions are included in the educational restructuring programs that the World Bank has sponsored in the Philippines and other third world countries. The growing Bank patronage to the Philippines indicates its view of the high degree of Filipino adaptability to this model.

Marcuse may have been himself somewhat "one dimensional" in his interpretation of the repressive nature of technology and its capacity to take over the stewardship of human behavior and in his
understatement of human resilience - and perhaps this was his intention. Clearly, the anxiety ripples from his philosophical writings on the subject brought critical thinkers closer to an understanding of contemporary forms of class power. Marcuse has been criticized for ignoring class dynamics in his arguments, and we have tried to reassert class structure within the critique by discussing some of the direct effects of high technology on ordinary people, workers. However, it is difficult, perhaps futile, to contemplate the technological alternatives to the current pattern in the absence of a liberating social dynamic led by commitments to collective human liberation. The critique of science and technology within an advanced capitalist setting does not imply, however, that the human persona extended electronically over great distances through the sensitive appropriation of nature necessarily means a loss of human potential. Under certain forms of international and local social organization the same scientific insights that have unfolded might be rearranged toward applications (technology) that enhance the participation of people in a cornucopia of meaningful ways. We have not attempted to capture the ways in this study but look forward to reading critical marxian thinkers who may try.

The threat to peace and equality that the neutron bomb poses to humanity lies not only in its genocidal doses of destruction but also in the realization that it leaves behind fully intact for the survivors the material structure of advanced capitalism. Whatever material existence may remain after the heat of the ultimate battle
wears off will present the biggest challenge to the species in trying to humanize instruments that were devised to counter national and social liberation movements. And whatever circumstances may arise to bring about a qualitative transformation of social awareness may very well require a giant step "backward" before we can move ahead and redesign tools with built-in appreciation for social welfare over personal profit. Bertolt Brecht once wrote:

From new transmitters came the old stupidities.
Wisdom was passed on from mouth to mouth.

The social liberation of communication will show us the way.
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