

**DEVELOPING SOCIETIES  
IN THE INFORMATION AGE:  
A CRITICAL PERSPECTIVE**

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## AUTHOR'S PREFACE

The 2000 Okinawa Summit of G7/G8 nations described information and communications technology or ICT as “one of the most potent forces in shaping the Twenty-first Century...fast becoming a vital engine of growth for the world economy.” In the same breath, the summit decried the existence of a digital divide between rich and poor nations and that the major challenge posed today is to bridge this widening chasm.

Five years later, in his much read and quoted treatise on globalization, *The World is Flat*, Thomas Friedman of the New York Times declared that the competitive economic playing fields between and among First World and Third World countries are now leveling due to the mainstreaming of the Second World (Russia, China and their satellites) coupled with the widespread adoption of new information and communications technology. Friedman alluded to global supply chains linking New York City executives, Silicon Valley engineers, Bangalore programmers, Tainjin assembly line workers, Delhi call center operators and Manila product analysis engineers to the global consumer, each of whom gets a slice of the revenue pie.

No doubt there has been a leveling of the playing field. Unfortunately, the game is not between rich and poor nations but among corporations and establishments from all over the globe sharing a common economic ideology.

Has this evening out of the playing field bridged the digital divide? Has it led to a more equitable distribution of wealth? Has it alleviated poverty?

Within the backdrop of the current economic crisis, the Third World collectively remains the ghettos and slums of today's Global Village. They are developing societies in the Information Age.

The digital divide does not pertain merely with technological access but to economic access as well. It is not just about digital

inclusion but, more importantly, political inclusion. It should not be addressed merely by the provision of digital opportunities but by social opportunities as well. We have become so enamored with technology that we have made it occupy a central place in the scheme of things.

Consider for a moment mankind as one society. This society is made up of an elite community on one hand who are globally networked through ICT (the Web, cellular phones, broadband and wireless technology) and the rest of humanity, on the other, scattered across the planet. The privileged group works with information while the rest supply the world with industrial labor, raw materials and food. Yet the former control eighty percent of the world's economic resources and thus enjoy most of the world's wealth. Lack of foresight has led many to believe that such a situation is beneficial. After all there ought to be a sector that would feed the world and provide it with the needed raw materials while the elite work with information and knowledge.

Consider once more the world as one economic organism. Conventional wisdom forwards that a malady in one part results in a state of illness to the entire being. It leads to the lack of wholeness and perhaps even to its demise. Should we not then address the inequities of the Information Age?

This volume provides the theoretical framework for a critical perspective on informatization and its impact on developing societies and emerging economies. It is based on my dissertation titled *The Information Rich and the Information Poor: Two Faces of the Information Age in a Developing Country*, which was conducted from 1983 to 1986. Much has changed since 1983 but the framework remains valid.

One obvious difference is that information societies were not as ubiquitous then as they are now, that information technology did not exert as much influence in our lives then as it does now. In 1983, the Cloud did not exist. Neither did Skype, 3G mobile phones and rich media content. Not even the World Wide Web was present. There were no virtual worlds, social networks and online transactions. Yet, information economists were already describing dysfunctional states attendant to an information-based economy, i.e., information overload,

bureaucracy, invasion of privacy, IPR infringement and attendant social inequities.

To many of us, this last issue is the most crucial and deserving of critical analysis. Thus, it has become the focus of this volume.

This is not to say, however, that informatization, in general, and information societies, in particular, should only be seen from a critical perspective. There are other equally valid views of these phenomena, including advocacies that optimistically herald their advent as precursors of a more evolved global system and social order.

The academic dialogue in this field within the virtual walls of the UP Open University is vibrant, diverse and dynamic. We, at the UPOU Faculty of Information and Communication Studies are committed to pursuing this narrative comprehensively, initially through a three-part continuing education program on the non-technical dimensions of ICT inclusive of the ethical, legal and social concerns that form the basis of the ICT4D movement.

It is in this spirit that this book was produced as an integral part of the program's courseware but more importantly as a contribution to the ongoing discourse.

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**ALEXANDER G. FLOR**

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*For  
Dr. Antonio G. Moran  
who introduced me  
to critical theory*

## CHAPTER I. AN EMERGING ASYMETRIC STRUCTURE

*Despite all the vaunted technological and economic progress of modern times,  
there are probably more poverty-stricken people in the world today  
than there were fifty years ago.*

*Eugene Staley  
Stanford University*

### LOS BAÑOS

Fifty years ago, Los Baños, a town roughly sixty-five kilometers south of Manila, was like any other rural town in the Philippines. Pristine in its rustic beauty, it was bounded by the hills of Mt Makiling on one side and the shores of Laguna de Bay on another. It was peppered with fruit trees, hot springs and pools of mineral water. It also contained the College of Agriculture campus of the University of the Philippines.

Then came an influx of foreign aid specifically earmarked for campus development and the establishment of international, regional and national research institutions. Today, Los Baños is an enigmatic place especially when seen in the context of conventional social science theory. Within this town are a number of communities existing side by side, yet exhibiting contrasting, even disparate traits and patterns of behavior, the most odious form of differentiation being poverty. The *kaingin*<sup>1</sup> community in the Makiling uplands is probably the most impoverished lot. Not lagging behind in terms of poverty are the duck raising community in Bayog, the farming communities in Putho, and the fishing community in Mayondon.

Affluence, however, is not unheard of in this town. In fact, the cost of living in Los Baños approximates that of Metro Manila. Members of the College community, a community of educators, researchers and students of the University of the Philippines Los Baños, are often outraged with the prices of commodities, which should normally cost less in provincial areas. In fact, some communities here

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<sup>1</sup> *Slash and burn or swidden farming*

are embarrassingly too affluent when compared with others such as upland barrios of Bagong Silang and Timugan.

## **A DIGITAL DIVIDE WITHIN AMONG COMMUNITIES**

How did this condition, best described as an asymmetric social structure, develop? What differentiates the elite communities from the underprivileged ones, aside from wealth and the quality of life?

A recurring trait observable among the elite communities in Los Baños is the abundance of information and communication resources. In fact, the international science community --- perhaps the wealthiest, yet the least conspicuous among the Los Baños communities --- is best off in terms of information and communication resources. Likewise, a recurring trait observed among the underprivileged communities in Los Baños is the lack of information and communication resources.

Los Baños has been immortalized in the media as the seat of the Green Revolution, specifically food production technology that is feeding the rest of Asia. It may very well be the first community in Southeast Asia exclusively devoted to the generation, analysis, storage, retrieval and utilization of agricultural information. Early on, the university town placed its premium on information epitomized by the College of Agriculture's trilogy of functions - instruction, research and extension - later adopted by other UP colleges and state universities. Its role as an information community in a predominantly agricultural country expanded greatly with the coming of international organizations such as the International Rice Research Institute, regional centers such as SEAMEO Regional Center for Graduate Study and Research in Agriculture and national agencies such as the Philippine Council for Agricultural and Resources Research and Development.

Note the following statistics:

1. Eighty percent of the workforce is composed of information workers.
2. Seventy percent of UPLB faculty members are doctoral degree

holders.

3. Los Baños is home to four international think tanks or consulting firms.
4. During his term as President, Fidel Ramos, although neither a Los Baños native nor alumnus, had in his Cabinet three secretaries and three undersecretaries plucked from the UPLB faculty.

This volume submits that the economic and political elite communities in a developing country, such as those found in Los Baños, are information rich communities. Likewise, underprivileged or deprived communities are almost always information poor. This newly emergent dichotomy or what in fact may be the real *digital divide*, is a function of a social environment that considers information as a primary resource. Furthermore, this divide is exacerbated by a dominance system that characterizes relationships between and among rich and poor countries in this globalized world. Lastly, the aforementioned situation is the best argument for the adoption of a set of value premises on information and communications technology for development or ICT4D.

## CHAPTER II. NEW AGE, NEW SOCIETIES

*Today, what counts is not raw muscle power or energy  
but information.*

*Daniel Bell*

Social observers declare that human civilization is now in a new age -- the Information Age. This new era is now drastically affecting every aspect of the lives of individuals, organizations and societies all over the world.

Attendant to the Information Age are a number of phenomena, the information explosion and the communications revolution included. Ironically, it is partly because of these phenomena that we are now aware of the tremendous inequality that is said to exist within and between nations and societies, an inequality brought about by a dominance system of relationships among rich and poor countries.

Perhaps the Information Age is conducive for this dominance system. Perhaps this dominance system, in turn, accounts for an emergent dichotomy which now characterizes most Third World societies, the "information rich - information poor" dichotomy.

Before, it was quite adequate to categorize societies as sacred or secular, mechanical or organic, *Gemeinschaft* or *Gesellschaft*. These typologies were slowly discarded to be replaced by the rural-urban dichotomy. Today, these classifications may lose their relevance in the light of new evolving social situations and environments. Whereas the folk-feudal and rural-urban typologies may have developed from the Agricultural and Industrial Ages respectively, the information rich - information poor categorization emerged out of the Information Age.

Casual observations support this view. As we described in the preceding chapter, a number of communities that are traditionally classified as rural, for all intents and purposes, do not display the characteristics of such. Provincial based research communities and university towns in the Philippine countryside are prime examples of these. The Los Baños Science Community, for one, bustles with information-related activities. Furthermore, almost always, they

manifest symptoms of cultural subservience. (For instance, a person who completes his doctorate degree in a Philippine institution is considered inferior in certain academic circles. It seems that the consensus among them is that a genuine PhD is one obtained from the United States or in Europe, even if graduate programs here exhibit equal or, in some cases, higher rigor.)

Societies or social systems are often classified according to their patterns of social organization. These classifications are almost always dichotomous. Confucius categorized societies as either "the great similarity" or "the small tranquility." Tonnies (1887) introduced the *Gemeinschaft-Gesellschaft* typology.

Redfield's two-part classification consisted of the folk-urban concepts. However, these typologies tend to become inadequate if not outmoded. We are now in the Information Age wherein the world is transformed into a global village and power relations are no longer confined within national or regional boundaries. Certainly, social systems are altered as well as the theories that attempt to explain them.

Social science theory, specifically sociological theory, is dynamic, situational and changing --- a systemic reaction to particular social situations by intellectuals thinking in particular philosophical traditions and paradigms (Kinloch, 1971). The emergence of new social environments may necessitate the restructuring of social theories. This work attempts such a reconstruction. And it does so cognizant of the limitations attendant to undertakings of this nature.

It should be noted that like all other attempts in theory construction, this book can and will only provide a partial interpretation or definition of reality. Somehow, the total picture cannot be completely definable in a manner agreeable to everybody. Sociological theory, as described, is a product of particular social situations and specific philosophical traditions and paradigms. The propositions forwarded in this work should be taken within the context of critical theory.

## TURBULENT FIELD ENVIRONMENTS

These limitations, however, should not reduce the significance of analyses of this nature, if only to anticipate social consequences. It is now generally acknowledged that we are living in an environment where change occurs with increasing rapidity and complexity, a condition described by Emery and Trist (1965) as a "turbulent field" environment.

Turbulent environments have three causes (Allen, 1978):

1. An increase in the urgency of problems because of the lack of "lead time" to solve them.
2. The tendency of today's problems to occur not in isolation but to interact violently with each other.
3. The failure of old models and theories to cope with modern day problems.

To cope with "turbulent field" environments, Wedemeyer (1978) suggests that *feedforward* information be employed "to reduce uncertainty and increase equilibrium in the control process." Feedforward implies the anticipation of certain developments given certain situations and contexts. As early as 1970, Toffler declared:

*It is becoming acceptable, in academic circles, to talk about the future. Before now, it seemed unscholarly, unscientific, and even "unserious". Some of the new energies are pilling over into and influencing the social sciences, the humanities, and other disciplines, forcing them again and again to ask, "What are the hidden side effects, the long range consequence of any action?"*

Feedforward information is the product of anticipatory methodologies. Such information becomes invaluable to the planner, decision maker, or policy analyst for them to adapt to turbulent-field environments. Feed forward enables one to anticipate consequences of

certain conditions or events in terms of lower order and higher order impacts.

The concepts dealt with in this book are evolving and are concerned with unconsummated social phenomena. The Information Age has started and no one knows quite surely what it has in store for the world, especially the Third World. This analysis may generate policy options, which may provide the alternative of avoiding problems before they become irreversible.

## **CHAPTER III.**

### **SHIFTS IN RESOURCES OF POWER**

*Who holds the wealth in an Information Society?*

*Roberto Verzola*

This chapter describes the global shift in resources of power from land, labor and capital to information. The actors have remained essentially the same. The elite continue to hold political and economic power as well as dictate social structures. The change is more on the nature of resources that are being controlled.

These propositions are based on ideas conceptualized by theoreticians of contemporary social sciences among them political scientists Renato Constantino and Johann Galtung, futurists Daniel Bell and Alvin Toffler, and economists Fritz Machlup and Marc Porat. First and foremost of these ideas is the concept of the Information Age.

### **THE INFORMATION AGE**

Human civilization has entered its third era, the so-called Information Age. It is a pervasive social phenomenon, a global environment.

Before the Information Age, was the Industrial Age. Before the Industrial Age, was the Agricultural Age.

Toffler estimates the Agricultural Age to have begun "roughly ten millennia ago...it crept slowly across the planet spreading villages, settlements, cultivated land, and a new way of life." Land was the basis of society --- from economy to culture, from family to politics. Life was primarily a game against nature and was organized around the village.

The Industrial Age started "three hundred years ago, give or take a half-century" (Toffler, 1980). Bell characterizes life in the era as mechanically paced, a game against fabricated nature wherein the machine predominated and work was technical and rationalized.

Porat's description is more explicit:

*In the early industrial society, the ownership of land is democratized, and the feudal structure is completely dismantled. The new locus of economic wealth and power is the factory. In that context, the ownership of capital dominates all other variables, including that of basic educational levels. The acquisition of superior trade skills is the road to upward mobility. But without capital, few craftsmen and small businessmen ascend to the heights of industry.*

In the Information Age, capital becomes less important than information. In fact, information becomes the "primary resource."

Although referring to the same global phenomenon, the Information Age has been termed differently by different people. For instance, Toffler refers to it as the Third Wave era, the first wave being the "agricultural revolution" and the second wave being the "industrial revolution." Brezinski labels the Information Age as the Technotronic (technological-electronic) Era. However, economists exemplified by Fritz Machlup, Marc Porat and Yoineji Masuda describe the Information Age in terms of *information societies*.

## **THE INFORMATION SOCIETY**

In 1982, the first edition of *Megatrends* was printed. In that much acclaimed book, social forecaster John Naisbitt wrote of the transformation of America from an industrial society to an information society. He also declared that it was "possible for a single country to be in various states of agricultural, industrial and information societies simultaneously."

To avoid confusion, the term *information society* should be differentiated from the term *Information Age*. An information society refers to a social system while the Information Age refers to an era in human civilization, a worldwide phenomenon. Hence, it is possible for a group of people to live in the Information Age but not within an

information society.

Paradoxically, agricultural and industrial societies are necessities within the Information Age. In fact, information societies can never exist without agricultural and industrial societies supplying food, raw material and hardware needs. We shall learn later that the problem lies in the power relations between these societies.

Porat operationalized the phrase "information society" as one wherein informational activities engage the majority of the workforce and account for the greater share of economic transactions. He estimated in the late seventies that in the United States, the industrial work force has shrunk to "only half the size of the information work force."

Vimal Dissanayake, formerly from the East-West Center, differentiated the information society from the agricultural and industrial societies using the following matrix:

<b>Categories of Change</b>	<b>Agricultural</b>	<b>Industrial</b>	<b>Information</b>
Product	Food	Goods	Information
Factors of Production	Land	Capital	Expertise
Production Venue	Household	Factory	Information Utility
Actors	Farmers	Factory workers	Technicians
Nature of Technology	Tool oriented	Power technology	Information technology
Methodology	Trail and error	Experiment	Abstract theory and simulation
Guiding Factor	Tradition	Economic growth	Codification of knowledge
Prerequisite for Success	Speech	Verbal/visual/aural literacy	Computer literacy
Preferred Rule	Hierarchical/authoritarian	Representative democracy	Participatory democracy
Unifying Principle	Regionalism	Nationalism	Globalism

*INSERT FIGURE 1 HERE*  
*LANDSCAPE*

Figure 1. Timeline of Ages and Economies/Societies

It is no longer difficult to state categorically whether or not the trend towards information societies can be found in the Third World. Recent observations point towards the affirmative. In Asia, for instance, certain trends that are indifferent to political developments show that we are indeed moving towards that direction. These trends include the growing demand for mobile devices and software, broadband/wi-fi/wi-max services, and even online educational programs.

## INFORMATION AND POWER

Initially, it may be difficult to conceive how something non-material such as information could overtake land and capital as an economic resource. An understanding of the nature of information, however, would allow us to appreciate its primacy. Information and communication are integral in our environment. In 1983, Talisayon wrote:

*Viewing the human environment as an ecosystem, consisting of complex interactions and flows of materials, energy, information and value<sup>2</sup>, every human activity, both economic and non-economic, is seen as processing and transformation of one or more of these four fundamental extensive variables.*

General systems theorists have introduced the concept of information metabolism wherein communication as Thayer states, is "a dynamic process underlying the existence, growth, the behavior of all living beings...as fundamental to the living system...as the ingestion and consumption of 'food' and 'fuel' to run its physical and physiological machinery."

Control is achieved through communication. Norbert Weiner, the father of cybernetics, equated communication with control and observed that it is negatively related to entropy, the tendency for all systems towards breakdown. This function or relationship is magnified

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<sup>2</sup> In a marginal note to the manuscript of this book, Talisayon relates value to a social divide different from that of an informational or digital divide, i.e., a civilizational divide. He cites Samuel Huntington's *Clash of Civilizations and the Remaking of the World Order* (Simon and Schuster, 1996) as the source of this argument.

in the Information Age where, as Porat emphatically puts it, "Information is power."

As early as 1909, sociologist Charles Cooley wrote:

*The system of communication is a tool, progressive inventions, whose improvements react upon mankind and alter the life of every individual and institution... It is not too much to say that these changes are the basis of nearly everything that is characteristic...of modern life.*

This was written a century ago when radio was still being experimented upon and television was not even a figment of anybody's imagination. Since then, the rate and amount of communication has increased in an almost mind-boggling manner through the merging of computer, broadcast, cables and telephone technology. Hence, wealth and power are now concentrated in the economics of information. To use Porat's early example, the gross revenue of AT&T in 1977 surpassed the GNP of 118 of the 145 UN-member nations.

Thus, in the Information Age, there seems to be a positive correlation between information and power, between communication and power. The logical consequence of this is the gravitation of special interest groups to the communication/information industry and the mad scramble for communication resources. Those who will gain access to more resources would understandably hold more political and economic power. They may, in turn, perpetuate this condition by determining enabling societal structures. And, as we have noted in the preceding chapter, the predominant societal structures which seem to be gelling is that of another dichotomy: the information rich and the information poor.

## **THE INFORMATION RICH AND THE INFORMATION POOR**

The evolution of the information-rich elite and the information-poor masses has been anticipated in the sixties when Fritz Machlup started writing about information societies. Fifty years ago,

communication theorist Everett Rogers observed that “new ideas may tend to make the rich richer and the poor poorer.” People who adopt an innovation are often more educated, enjoy higher status, are more exposed to mass media, and are more literate.

The phrase information and communications technology or ICT was first used by Katzman in 1974. He opined that the uneven initial distribution of resources may aggravate the situation Rogers describes. Katzman proposed that:

*With the adoption of a new information and communications technology or ICT, people who already have high levels of information and ability will gain more than people with lower initial levels... On one hand, it raises the information level of all individuals and on the other hand, it widens the gap between the information rich and the information poor.*

Porat further furnishes a good description of an information rich individual:

*The professional technocrat-scientist-manager assumes an ascendant role...The technocrat as the new leader enjoys vertical mobility; generally has the good life, is extremely well educated, tested, and trained for both verbal and quantitative skills, is rewarded for prowess with abstract concepts and symbolic behavior; and is keenly attuned to new information about the world or his or her profession. Above all, the technocrat knows how to acquire information (p.41).*

The problem with the advent of an information rich class is the implied existence of an information poor class. In 1979, scientists attending an annual meeting held in Houston, Texas, coined the term "techno-peasant" as a label for the information poor individual. The techno-peasant is the exact opposite of the technocrat. He is technologically illiterate and is easily overwhelmed by new fields of technology. The technocrat increasingly determines the nature and quality of the techno-peasant's life.

The book that resulted from that conference described a split that "had occurred between the technocrats, a scientific elite who are really running things in this country, and the techno-peasants."

When communication techniques are applied to social problems, the political implications of the widening gap between the information rich and the information poor become critical as Katzman declares. In a World Future Society publication, Didsbury provides a succinct presentation of this argument:

*The new telecommunications media may have equally undesirable effects on the social structure. It seems reasonable to suppose that this revolution, like all revolutions, will create its own new class structure --- with all the attendant privileges and antagonisms associated with such a change. In this case, one can discern at least two classes, each of which has very unequal prospects in this new telecommunications society. On one hand, there are the information rich; on the other, the information poor (p.313).*

However, the situation is such that one does not have to wait for the evolution of the information poor underclass. The Third World is teeming with it. In the present global economic structure, the Third World becomes the natural abode of the information poor.

The world is indeed one economic organism. The perverse opulence of one nation results to the extreme poverty of another. This is not to suggest that a zero-sum game exists in the world economy, the operative term in the preceding statement being *perverse*. Excesses ultimately lead to imbalances. There can hardly be a First World without a Third World. The First World's dominance over information resources, when approximating dysfunctional levels, may actually contribute to the Third World's lack of such.

## SOCIETAL STRUCTURES AND THE DIGITAL DIVIDE

The structure of society in developing countries and emerging economies tends to be affected by a dominance relationship with powerful countries. This relationship or system of relationships, often referred to as *imperialism*, causes the asymmetrical social structures now found between and among nations, between and among societies, between and among communities. This proposition is largely based on Johann Galtung's *structural theory of imperialism*.

Galtung theorizes that the world is composed of Center (C) and Periphery (P) nations. Each nation, in turn has its own centers (c) and peripheries (p). Imperialism is conceived as a dominance relation between these nations, basing itself in a "bridgehead" which the center of the Center nation (cC) establishes in the center of the Periphery nation (cP), for their mutual benefit. Imperialism is thus "a system that splits up collectives and relates some of the parts to each other in relations of *harmony of interest*, and other parts in relations of *disharmony or conflict of interest*" (p.81).

A state of disharmony of interest is said to exist when two entities are coupled together in such a way that the gap in living conditions between them is increasing. On the other hand, a state of harmony is said to be present if the two entities are coupled together in such a way that the gap in living conditions between them is decreasing down to zero. The concept of "living conditions" is operationalized by indicators such as income, standard of living, quality of life (p.82).

Figure 2 provides a model of the structural theory.

*INSERT FIGURE 2 HERE*

Figure 2. Galtung's Structural Model of Imperialism

The structural theory may thus be summarized as follows:

*In our two-nation world, imperialism can be defined as one way in which the Center nation has power over the Periphery nation, so as to bring about a condition of disharmony of interest between them (p.83).*

The characteristics of this structure are:

1. Harmony of interest exists between the cC and the cP.
2. Disharmony of interest is more within the P than within the C.
3. Disharmony of interest exists between the pC and pP.
4. Disharmony of interest exists between P as a whole and between C as a whole.
5. Disharmony of interest exists between cC and pC but to a lesser degree than the disharmony between cP and pP.

Galtung declares:

*The basic idea is, as mentioned, that the center in the Center nation has a bridgehead in the Periphery nation, and a well-chosen one, the center in the Periphery nation. This is established such that the Periphery center is tied to the Center center with the best possible tie: the tie of harmony of interest. They are linked so that they go up together and down, even under together (pp.83 to 84).*

Information and communication, it seems, play a vital role in the relationship between the Center nation and the Periphery nation. Friedman's thesis (2005) that ICTs have resulted in level playing fields between the Centers and Peripheries is misleading. The playing field is not shared by the Center (C) nation and the Periphery (P) nation but by the center of the Center (cC) and the center of the Periphery (cP). The periphery of the Center (pC) and the periphery of the Periphery (pP) are marginalized in the process. Outsourcing arrangements between a cC player such as IBM USA and a cP entity such as IBM China may be beneficial for the bottom line of IBM and Chinese IT workers but may not be good for unemployed Americans or for Chinese rural workers. If anything, these global supply chains have validated Galtung's propositions.

Twenty years ago, Aggarwala warned of the dark side of the Information Age. The revolution in communications technology has lead to the concentration of media ownership in the hands of a few. The merger of old media establishments and new media providers into conglomerates has often been attributed to the convergence of media. However, Aggarwala quotes Bagdakian as stating:

*Only fifty giant corporations today control the American media --- newspapers, magazines, radio, television, books and movies, and that these corporations are allied in financial interest with other massive industries and with international banking...The fifty men and women who head these corporations would fit in a large room. They*

*constitute a new Private Ministry of Information and Culture...More than any other governmental source, the fifty dominant media corporations can set the national agenda...*

Galtung pinpoints communication or media imperialism as among five types of imperialism. In such a relationship, the Center nation provides news and the means of communication while the Periphery nation provides "events, passengers, and goods." The major news agencies are in the hands of Center nations, relying on Center-dominated networks such as cable, satellite and others.

*What is not so well analyzed is how Center news takes up a much larger proportion of Periphery news media than vice-versa...The Periphery nations do not write or read much about each other...and they read more about their Center than about other Centers because the press is written and read by the center in the Periphery, who want to know more about the most "relevant" part of the world --- for them... The Periphery also produces events that the Center turns into news. This is done by training journalists to see events with Center eyes...(p.92).*

Hence, information and communication resources are easily used to further the dominance system of relationships among Center nations and Periphery nations.

## CHAPTER IV. THEORETICAL FRAMEWORK

*As always when in the midst of extensive and rapid changes,  
it is difficult to assume a critical perspective from which to assess  
the significance of what is occurring.*

*Mark C. Taylor  
The Moment of Complexity*

Improvising upon the propositions forwarded in the preceding chapter and relating it to situations in the Third World we arrive at our framework.

The theoretical structure of this analysis is of the *axiomatic deductive inductive* type. Theoretical propositions were derived from a set of basic premises gleaned from the preceding chapter. These propositions, in turn, formed the bases for the conceptual framework.

### BASIC PREMISES

This theoretical framework takes, as its point of departure, the following premises gleaned from the existing literature:

1. Social systems, and the theories that attempt to describe them, are constructed within the context of specific social settings and environments.
2. Presently, the predominant social setting or environment is that of informatization.
3. In an environment of informatization, information societies may exist side by side with traditionally oriented agricultural societies or developing societies.
4. In an environment of structural informatization, there is a positive correlation between information/communication and social/political/economic power.

5. In an environment of dysfunctional informatization, the gap between the information rich and the information poor tends to increase, leading to asymmetric social structures.
6. In an environment of global informatization, information and communication are used as expedients of a dominance system of relationships.
7. Developing societies and emerging economies tend to be affected by this system by engaging in a dominance relationship with information economies. This relationship or system of relationships is generally based on *conflict of interests*.

## DERIVED THEORETICAL PROPOSITIONS

The following theoretical propositions have been derived from the basic premises enumerated thus far:

***First Proposition.*** Assuming that social systems and structures are constructed within the context of specific social environments and assuming further that the predominant social environment now is that of informatization, the emergent social structures may now be differentiated according to information related variables.

Given premises 1 and 2, the formulation of a composite typology of social systems that reflect information as a resource is inevitable.

***Second Proposition.*** If, as Galtung has expounded, structures of social systems in developing countries and emerging economies are largely affected by a dominance system (Premise 7) wherein collectives are divided into centers (c) and peripheries (p) then, social systems in a developing country tend to be polarized into two categories: one typifying the characteristics of a center (c) and the other embodying the characteristics of a periphery (p).

Furthermore, if a positive correlation exists between information/ communication and power (Premise 4); and assuming further that information/ communication is indeed used as expedients of the

dominance system (Premise 6) then the emergent social system could be differentiated according to access to information and information related resources, a dichotomy more commonly known as the digital divide.

***Third Proposition.*** Since the centers of Center nations (cCs) have information-based economies, then the centers of Periphery nations (cPs) are likely to be information societies. Hence, the cPs are presumably "information rich" like the cCs.

It is thus axiomatic for the pPs to be "information poor." This is amply supported by Premise 5, which forwards that "the gap between the information rich and information poor... tends to increase."

In summary, social systems in developing countries and emerging economies are asymmetric may be roughly classified into two types: the center of the Periphery (cP), the elite or the "haves," and the periphery of the Periphery (pP), the underprivileged or the "have nots." This work suggests that the elite constitute information rich communities. Likewise, the underprivileged or dispossessed are information poor communities.

## CONCEPTUAL FRAMEWORK

Thus far, the following concepts have been identified as constituents in this framework: informatization; dominance systems or mechanisms; and the digital divide.

The relationships between these constituents are as follows:

Informatization is the environment wherein this phenomenon occurs. Within an environment of informatization made dysfunctional by a system of dominance relationships among developed and developing societies, the divide will increase. Thus, this asymmetric social structure that we refer to as the digital divide is a function of dominance mechanisms within an environment of informatization, i.e.:

$$\text{Digital Divide} = f(\text{dominance mechanisms, informatization})$$

Dominance systems and mechanisms are said to be positively related with the information rich information poor dichotomy or the digital divide. In other words, *the more extensive the dominance system, the greater the divide or the gap between the information rich and the information poor in developing societies.*

However, to present a more holistic discussion of the relationships between these concepts in the real world, as well as their social implications, the analysis would have to adopt a set of explicitly defined value premises. Without these value premises, the discussion can only remain sterile and academic devoid of any meaningful insights and practical value. This set represents normative values that are to be associated with the ICT4D movement.

## CHAPTER V. VALUES FRAMEWORK

*In an era of multimillion dollar research projects,  
it is hard to deny that science has both value implications and value origins.*

*Robert Proctor  
Value-free Science?*

In June 1989, a group of Asian academics, researchers and policy makers met in Singapore under the auspices of the Asian Media Information and Communication Council. The meeting kicked off an East West Center financed study on informatization in Southeast Asia led by information economist, Meheroo Jussawalla.

The research framework for the regional project was proposed by the founding Dean of the Nanyang Technological University's School of Communication Studies, Eddie Kuo. The framework, which was eventually referred to as the Kuo Model named three major dimensions of informatization, namely: the People Dimension; the Economic Dimension; and the Infrastructure Dimension. The People Dimension was operationalized as education and literacy levels. The Economic Dimension referred to conventional economic indicators such as GNP and GDP. Infrastructure meant telecommunications and media infrastructure.

*INSERT FIGURE 3 HERE*

Figure 3. The Kuo Model of Informatization

These factors were theorized to be positively correlated. High educational and literacy levels meant developed telecommunications infrastructure and, likewise, high economic performance and vice versa.

Having newly returned from a stint as Visiting Research Fellow at the East West Center Institute of Culture and Communication in Honolulu, I sat in that meeting as Country Research Collaborator for the Philippines. When it was time for me to deliver my paper, I argued that Kuo's Model may not be entirely applicable to the Philippine situation because of the following observations:

- The high education and literacy levels in the Philippines were not directly correlated with telecommunications infrastructure and investment.
- The high education and literacy levels were likewise not correlated with the degree of economic development.
- Although the degrees of telecommunications infrastructure and economic development were both low, a correlation between the two cannot be immediately established.

In 1989, telecommunications development in the Philippines was one of the lowest in the ASEAN Region. While it was true that telephone density in the Metro Manila area was as respectable as in any major city in Southeast Asia, density in rural areas was close to nil unlike in Indonesia, Malaysia, Thailand and Singapore. The national carrier, the Philippine Long Distance Telephone Co., was indeed implementing a five-year (1989-1993) expansion and modernization program with half a million new telephone lines, only 25 percent of these new lines were to be installed outside of Metro Manila. Furthermore, if 1989 budgetary allotments were to reflect the priority afforded by the national government, telecommunications would be found close to the bottom of the list.

I suggested that perhaps another variable should be centrally juxtapositioned or superimposed onto Kuo's Model as far as the Philippine situation is concerned. This intervening variable is the Values Dimension, which may be operationalized through government priority indicators, subsidy levels, multisectoral participation levels, even corruption levels.

*INSERT FIGURE 4 HERE*

Figure 4. Modified Kuo Model

## **ICT4D VALUE PREMISES**

Some of us may cringe at the thought of incorporating values into empirical research. However, the phrase information and communication technology *for development* or ICT4D makes no pretensions of neutrality. It is predisposed towards a certain ideal – development. Neither will this analysis make any claims about its objectivity. Clearly, it is not.

The preceding chapter ended with a conceptual framework. As in the case of the Kuo Model, we now propose that a set of value premises be adopted by this framework.

## **Equality**

The equality premise may be formulated in terms of distribution or redistribution of benefits generated by society or, as the absence of exploitation (Galtung, 1971). This work adopts in its framework the latter concept of equality (non exploitation) as a normative value. The former concept may be impractical since diversity in needs and abilities among individuals discourage equal distribution of resources and benefits.

The primary value premise of this work is that equality is preferable to exploitation.

## **Harmony**

Harmony, as a basic value premise adopted by the framework, implies the absence of conflict. In this analysis, social value is attached to harmony while none is associated with conflict.

## **Complementarity**

Complementarity denotes the assumption of specific roles supportive to one another. Power relations are reciprocal when no party gains a distinct advantage at the expense of another. Dominance is diametrically opposed to complementarity in the same vein as asymmetric architecture undermines the stability of structures, physical or social.

This analysis has chosen to take the side of complementarity.

## **Integration**

In a world of limited resources, the concept of unlimited growth of a nation could only mean the deprivation of another. This argument is substantiated by Boulding who believes that the world, especially the developed world, should replace its wasteful "cowboy economy" with the frugal "spaceship economy" as a requirement for human survival. The "spaceship ethic" encourages integration rather than segregation or

polarization.

## **Participation and Inclusion**

Participation refers to the active involvement of the beneficiaries of development programs in all stages of program planning and implementation. It may also mean a decentralized, inclusive or non-elitist approach to policy making especially on policies that have far reaching impacts and consequences. Elitism or exclusivity, especially, in the conduct of development projects, is counter-productive. Such projects should be people oriented in theory and practice, in planning and implementation. Thus, elitism is regarded in this work as a counter value.

## **Development from Within**

Related to the value of participation is development from within. Development policies should not be imposed from the outside but conceptualized and formulated from the inside. No country has the right to dictate to another country its "terms" for development. All too often these are self-serving for a developed country and would prove not only to be disadvantageous but also inappropriate for the developing country.

## **Convergence**

The term convergence has been applied to communication models (Kincaid, 1978), media and disciplines. Convergence as an ICT4D value would refer to the fusion of interests, goals and action. It transcends or goes beyond harmony (the absence of conflict) and complementarity to mutual understanding. Convergence is equated with the process of communication. It is considered socially positive and a social necessity.

## **VALUE-PREMISED CONSTITUENT CONCEPTS**

A discussion of the constituent concepts in relation to the above value premises is now in order to reconcile these with Galtung's

propositions.

## **Information and Informatization**

Information, traditionally defined, is that which contributes to the reduction of uncertainty. This definition, although technically accurate, neglects the social dimension of information. It is the social function which adds value to information and which gives those who possess it advantage over those who do not. Thus, information should be regarded first and foremost as a *resource*.

As in the case of other resources, there exists a tendency for exploitative groups to hoard information and to use it to further their interests. Information nowadays is associated with influence and power. It is now treated as a dominant commodity under the control and manipulation of the elite.

It may be argued that information is neutral and autonomous in itself. Noble (1977) contradicts this argument in his description of technology which is essentially a type of information: "...it does not simply proceed automatically, but rather contains a subjective element which drives and assumes the particular forms given it by the most powerful and forceful people in society, in their struggle with others."

It may also be argued that power relations based on possession of information may not exactly follow the same laws as those stemming from possession of money, energy or other non reproducible resources. This may be the case, normatively speaking. Information per se is non-material. However, information per se is useless without a medium. Generally, it is a physical, tangible medium. And all too often, it is with such media wherein domination and controls are imposed by vested interests.

Along with informatization is the evolution of particular forms of social relations characterized by the competitive struggle for the accumulation of information and communication resources.

The conflict paradigm essentially presupposes an element of

advantage or "gain". Hence, in spite of arguments to the contrary, a zero sum situation may also exist even in the information arena. Empirically, this may be shown both at the macro and at the micro levels.

At the macro level, the abundance of information in some sectors, regions or areas could be correlated to the abundance of wealth and opportunities. Likewise, the scarcity of information in some sectors, regions or areas could be correlated to deprivation or poverty. The gain of some constitutes a loss for others.

Based on our ICT4D value premises, this situation should not be considered as part of the "stark realities" of the Information Age but as a dysfunction in the proper utilization of information. In other words, a zero sum situation need not exist. The gain of some can also mean the gain of others.

Information resources should contribute more towards equality than exploitation, towards harmony than conflict, towards complementarities than dominance, towards integration than segregation, towards participation than elitism, towards indigenous development than dependency, and towards convergence than divergence.

### **Dominance Systems and Mechanisms**

Dominance, in general, and imperialism, in particular, thrives on conflict, dependency, segregation and, most especially, exploitation. It is brought about by the self-interests of the elite in a Center nation.

Although it may be tempting to conclude that the elite represent the sentiments and interests of their respective countries, it may be inaccurate to say so. Modern day imperialists no longer represent nations in this globalized world. They represent the interests of the rich in the developed countries. Contemporary imperialists are bound by interests, which transcend nationalities. This accounts for groups that exist because of the need for a higher level of cooperation among such powers. It is the same will which provided the impetus for the

formation of mechanisms that would perpetuate the advantages enjoyed by the elite. These mechanisms have taken the form of multinational/transnational corporations or international organizations in the past (Galtung, 1971), the most powerful of these dealing with information (i.e. transnational telecommunications companies, international financial institutions, media organizations). These organizations and their activities (e.g. transfer pricing, monetary policy impositions and transfer of technology) constitute the empirical referents of the aforementioned dominance system. More recently, these mechanisms may be observed in the global supply chains described by Friedman (2005).

### **The IP-IR Dichotomy and the Digital Divide**

In Galtung's analysis the elite in a developing country assume the characteristics and living conditions of the elite in the Western country while the rest of the population adopt very much inferior lifestyles. It is well established that the elite in Western countries are information rich. It follows that the elite in the developing countries and emerging economies are also information rich. Likewise, it may be deduced that the underprivileged are information poor. Following through this analysis, it would appear that in a developing country, there exist two classes: one information rich, the other information poor.

However, a strict dichotomy of an information rich class and information poor class may be simplistic and, at times, misleading. A more accurate approximation of the real situation may be found in the concept of "continuum."

Indeed an increasing and marked polarization between the information rich and the information poor is fast becoming evident in our society. Perhaps, there indeed exists an extremely information rich center and an extremely information poor periphery. Yet, a continuum exists between these two extremes and any point within this continuum may only be defined and characterized in relative terms.

Following Galtung's thesis, the gap or divide between the two extremes of this continuum tends to increase over time. This tendency

is brought about externally and internally and is not only a function of technology. Externally, it is caused by vested interests, ideologically driven technology, global economic policy and standards. Internally, it is determined by an innate but marked tendency of the elite to perpetuate its advantageous status and likewise, from the "inertia" of the underprivileged. Galtung hinted at these internal contributing factors through the phrase "sorting out." He believes that, through social interaction, the elite and the underprivileged tend to sort themselves out along the continuum.

Hence, the tendency for the gap to increase is both a function of the external forces of this dominance system and the internal tendencies of both the elite and the underprivileged. According to Galtung, this gap, in empirical terms, refers to the differences in living conditions: income, standard of living, opportunities and the quality of life. In information terms, this divide relates to digital access and opportunities. Further still, it encroaches into political indicators such as participation and inclusion.

Galtung further declares that the center (in this case, the information rich) has the ability to enrich itself more than the periphery (the information poor). It is also "high on rank dimensions" in terms of absolute properties or development variables. Generally, these refer to traditional indices of modernization such as education, infrastructure, economy and exposure to the outside world. Information-wise, these relate to Internet penetration, telephone density, e-readiness, and new media literacies.

Hence, the information rich, information poor continuum would revolve around differences in the above indicators. The extremely information rich and the extremely information poor are polarized in terms of income, standard of living, education, the extent of availability of media infrastructure, the extent of use of media infrastructure, economy and exposure to the outside world.

To summarize, this work conceives of a dominance relationship between a developed country and a developing country within a globalized world. In an environment of informatization, this

relationship is increasingly being staged at the information arena wherein transnational information and communications technology corporations, international institutions, and media organizations are the main actors. Their activities in developing countries and emerging economies contribute to the existence and gradual polarization of two extreme classes, one information-rich, the other information-poor. A continuum exists between these two extremes. The gap between the information rich and the information poor revolve around differences in income, standard of living, education, availability and use of communication infrastructure and economy. This gap tends to increase over time and is a function of both external forces and internal tendencies.

ICT4D is thus seen not merely as a global initiative to leverage information and communications technology to further the development agenda. It must serve as an active force to remedy the inequities that are attendant to dysfunctional information societies.

## **CHAPTER VI.**

### **GLOBAL MANIFESTATIONS: INFORMATIZATION IN DEVELOPING SOCIETIES**

*We seek the West's technology only, not its ideology.*

*E.F. Schumacher and P.N. Gillingham  
Goodwork*

## **GLOBALIZATION**

Informatization comes with the Information Age. All aspects of society - politics, culture, business, and economy - become increasingly information-oriented. Informatization gives rise to economies and societies wherein information, naturally, becomes the dominant commodity or resource. Concomitant to informatization is the globalization of the economy as Dissanayake typologized in Chapter II. However, it takes the form of globalization guided by vested interests.

Information societies have almost always been associated with the so-called North. The South, newly developed or developing countries, are classified as either industrial or agricultural societies. Such categorization may lead one to believe that not much premium is given to information in developing countries.

However, the communications or information revolution has tended to shrink the size of the world, figuratively. Instant communication between two persons situated at opposite sides of the globe is a common occurrence. Distance no longer serves as a major factor in communication. The global village is now a reality. And so is global economics.

At no other time has it been apparent that the world is one economic organism. As the world systems theorists would have it, major economic developments in one country ultimately affect other countries. It has also been argued that in a world of limited resources, one nation can only become tremendously wealthy at the expense of another.

One can no longer speak of independent national economies. What

we have today is an information-based world economy. Rahim (1989) observes:

*The informationalization of contemporary economies is not necessarily limited to post-industrial societies. A rapid industrialization of non-western economies seems to trigger a rapid growth of their information sector. The growth of international trade in information goods and services is probably a major cause of internationalization of this structural change. Strong economic linkages of these countries with the U.S., Japan and Western Europe might be responsible for externally induced informationalization.*

Informatization is a global trend and there is a need to understand its social impact particularly on developing countries and emerging economies.

## **SOCIAL CONSEQUENCES**

In April of 1988, a faculty member from the University of the Philippines wrote a letter to a colleague from the University of Guelph, which included the following paragraph:

*To reiterate my position, I submit that in the developing world, among the social evils attendant to the Information Age is the formation of new social structures: a new elite on one hand and a new deprived underclass on the other. The latter reminds me of the critical mass of laborers and factory workers formed during the early years of the Industrial Revolution who provided part of the basis for the social theories of Marx and Engels. While the industrialists and engineers were applauding the steam engine and the factory assembly line, men, women and children were being exploited in factories, coalmines and railway companies all over Europe and North America. Nowadays, while scientists and technocrats applaud computer-telecommunications technology and information-based economies, rural folks in the Third*

*World are deprived of basic essentials because resources meant for them are drained or siphoned, directly or indirectly, to information-related activities by bureaucracies and well-intentioned but shortsighted and (at times) self-serving Western-sponsored "development" programs.*

In spite of the note's subdued rhetoric, the writer's observations may find theoretical support in current studies utilizing the knowledge-gap hypothesis and the digital divide construct.

Porat has enumerated a number of social problems associated with the information society. Among them are: increasing red tape or bureaucracy, the inability to cope, the invasion of privacy and the emergence of the information poor.

The First World does not have a monopoly of these problems. Bureaucracy is worst in the Third World. And with its teeming functionally illiterate, not to mention, computer-illiterate millions, so is the inability to cope. The invasion of privacy is another problem prevalent in developing countries and emerging economies. Symptoms of this problem range from military or national security files on private citizens to the rise in popularity and the income-earning capacity of gossip writers who make their living by baring the private lives of celebrities. As implied in the above quote, the Third World is the abode of the information-poor. In the previous chapter, we concluded that the gap between technocrats and the computer illiterate masses is progressively widening. Yet, the social consequences of informatization in the Third World go beyond these.

Informatization coupled with Third World poverty and social insecurity has resulted to a "mad scramble for information and communication resources" within the ranks of Third World businessmen and professionals. Plagiarism and other crimes on intellectual property are rampant. Project proposals showing good promise are unscrupulously "stolen."

The services of ghostwriters are in high demand. Copyright

infringement involving the print media as well as the music and film industries has become a nagging headache.

The migration of labor and expertise is another. During the ascendancy of the Information Age in the fifties and sixties, information workers from periphery nations (India, Philippines, Mexico, Brazil, etc.) migrated in large numbers to center nations (United States and Western Europe). These engineers, doctors, lawyers, educators, accountants and clerks were easily absorbed in the growing information workforce. Those were the years of the "brain drain." Information workers from the Third World came to work as information workers of the First World.

Nowadays, migrant engineers and doctors from developing countries have been replaced by migrant programmers and nurses. Yet, another trend is manifesting itself. The decreasing supply of domestic non-information labor in the First World has encouraged the migration of large numbers of people from developing countries to assume non-information related jobs. Informatization has led to a decline in the number of farm workers, janitors, nannies and housemaids in developed countries. This resulted in a high demand for non-information migrant workers. Hence, in American society one encounters more and more Mexican fruit pickers, Chinese cooks, and African drivers.

An extreme example is the Filipino domestic helper. It should be noted that many domestic workers have college degrees in education. Since, they are in demand because of their facility in the English language, they find it more lucrative to work as nannies in Hong Kong, Singapore, or Italy than to work as elementary school teachers in the Philippines. A national furor was created in the eighties when European's started using the word "Filipina" to refer to their nannies and helpers. Recently, the entire country was even more outraged when a Hong Kong Magazine columnist, branded the Philippines as "a nation of servants."

This trend for migrant underemployment is not limited to our trained teachers in the Philippines. Salesmen, dentists and other professionals from many developing countries would gladly leave their

jobs for a stint with the United States Navy. Globalization has seen it fit for the information worker from a poor country to enthusiastically migrate to a rich country to assume a menial job.

Yet, the most serious social consequence of informatization in the Third World is the siphoning of economic resources, the enrichment of one economic sector at the expense of another.

## **CHAPTER VII. NATIONAL INDICATIONS: INFORMATIZATION IN THE PHILIPPINES**

*In a society characterized by social and economic inequalities,  
access to information is also unequal.*

*Gelia Castillo  
Beyond Manila*

How should a phenomenon stemming from dominance and conflicting interests be analyzed? Should it be approached quantitatively or qualitatively? Should the preoccupation for objectivity be allowed to stifle valid insight? Where does one draw the line between legitimate critique and polemics?

Chapter V presented a set of value premises that should be adopted by ICT4D undertakings. These premises are central to the work's advocacy. It takes a definite stand against concepts, which run contrary to the value premises.

Commenting upon the *structural theory of imperialism*, Galtung stated that the theory is so rich in implications that it provides ample basis for empirical research employing synchronic statistical methods as well as diachronic case studies. He added that it would be a pity if "ideological...conflicts between adherents of different schools should lead to any systematic neglect as to mobilizing general social science for a deeper understanding of how the system works."

Since this analysis makes generous use of Galtung's theory in its framework, it also adopts his views on the necessity for "mobilizing general social science" for the analysis of this phenomenon regardless of ideological conflicts. The need to study the problem from different perspectives (i.e., quantitative, qualitative and proactive) is recognized.

### **INDICATORS**

#### **Concentration of Information Labor**

What becomes of a developing country in the Information Age?

The ascendancy of information as a vital commodity even in a developing country such as the Philippines can be discerned through an analysis of the country's labor force. For purposes of this study, information workers are defined as professional, technical, administrative, executive, managerial, clerical, sales and service workers. Industrial workers are defined as production workers, transport and equipment operators, and laborers. Hence, what is traditionally known as the service sector may include both information labor and parts of industrial labor. Agricultural workers, on the other hand, are defined as farmers and farm hands, animal husbandmen, foresters, fishermen and hunters.

Although the majority of the labor force in the Philippines is still made up of agricultural workers (49.1 %), information workers (27.9 %) now outnumber industrial workers (20.6 %). Furthermore, based on national census figures, the percentage of agricultural and industrial workers have decreased while the percentage of information workers has persistently increased.

This trend began in the early seventies when agricultural workers accounted for 51.83 percent of the total labor workforce. This figure increased slightly to 52.97 percent in 1975 then decreased to 49.17 percent in 1980. Industrial workers decreased from 21.75 percent in 1970 to 20.61 percent in 1980. Information workers, on the other hand, accounted for 25.01 percent in 1970. Their ranks increased to 26.13 percent in 1975 and again to 27.89 percent in 1980. This figure has increased to almost 35 percent in 2000.

If labor and employment are considered as adequate indices, it may be concluded that information is fast becoming the dominant commodity in the national economy.

Among the information workers in the country's labor force, the biggest sector is the educational services and research and scientific communities (Patalinghug, 1984). Census data in the mid-seventies reveal that there were already 2,629 establishments classified under this sector with an average of 36.89 workers per establishment.

Financial institutions make up the second largest sector although they account for the biggest share of total compensation per worker ratio among the major groups (Ibid, p.27). Workers from the financial sector are only half the number of workers in the education and research sector. However, being a high wage sector, the financial industry has compensation per worker ratio that is three times higher than that of the education and research sector.

Roughly 65 percent of the education, scientific and research establishments; 74 percent financial institutions; and 83 percent of the transnational corporations in the Philippines are based in the National Capital Region evidently making it the so-called "center of centers" in this Periphery country.

The largest concentration of the nation's elite may be found in the National Capital Region. It has become the abode of transnational interests making it the country's link to the global village. Being the plexus of information and telecommunications networks, it is also the best off in terms of media infrastructure and information resources.

However, it cannot be said that Metro Manila is exclusively information rich while the rest of the country is totally information poor, although it would be tempting to do so. There are a number of information poor areas in Metro Manila such as the slum communities of Tondo. Likewise, many information rich communities are scattered throughout the country. Nevertheless, it may be safe to say that most areas outside Metro Manila are information poor.

Furthermore, there exists an underlying premise that information begets greater information. Hence, the information available to an individual is a function of the information that one already has. *The more information an individual possesses, the greater is his capacity to avail of additional information.*

## **Availability of Communication Media or Channels of Information**

The availability of information may be a function of the availability of mass media, new media and other channels of information. At the macro level, Metro Manila, an empirical referent to Galtung's cP, may again be compared with the twelve other regions of the country. All five television networks in the country are based in Metro Manila. Undoubtedly, the National Capital Region has the largest number of television receivers per capita. All twenty seven national dailies are published in Metro Manila. Newspaper circulation in the other twelve regions is obviously more limited. Based on the Broadcast Media Yearbook (KBP, 2000), Metro Manila has the highest number of radio stations among the country's regions. However no comparative figures on radio ownership among regions exist.

With regard to new media statistics such as Internet penetration and cable television density, indices associated with telecommunications infrastructure (mobile, fixed and broadband) may offer a more appropriate parallel than mass media infrastructure. Generally, however, similar trends may be observed. Indeed, we have, as an exceptional case, the availability of mobile service providers in rural areas, but the ownership of these providers are limited to three companies all based in Manila, clearly a symptom of asymmetric economic growth.

Adopting the premise that the gap between the information rich and the information poor tends to increase, it may then be proposed that *the rate of increase in media availability in a center Periphery (cP) area is greater than the rate of increase in media availability in a periphery Periphery (pP) area.*

## **Access to Communication Media or Channels of Information**

Availability of communication media is obviously a prerequisite for access. For communities wherein media are relatively unavailable, access to communication media is hampered to a considerable degree.

Content analysis is one procedure in determining the degree of access to certain channels of communication. This analysis would provide a quantitative basis (column inches, airtime, number of frames, etc.) for determining what messages are given exposure and consequently, what sources are given access. Unfortunately, recent studies of this sort comparing access of sources from center communities with access of sources from periphery communities are lacking. However, cursory observations of newspaper, television and radio coverage indicate that sources from center areas such as Metro Manila have better access than sources from periphery areas. Only minor tokens of space and airtime are provided for periphery sources. For instance, provincial news are allotted insignificant placements in print, radio and television. Movie and entertainment news figure out more prominently in the media.

Considering that there is indeed a physical, spatial or temporal limit to the capacity of communication media or channels it would follow that media access has also certain limits. Traditional, conventional and new media access indeed becomes a zero-sum game between the information rich and the information poor within a system that accommodates dominance and exploitation. In other words, the more access the center has, the less access afforded to the periphery.

*An inverse relationship exists between the access of the information rich and the access of the information poor.* This function, again, presents itself as another testable hypothesis.

Perhaps, the above hypotheses may best be validated in the agricultural sector. The spread of agri-business itself is transforming agriculture into a desk job wherein the producer works with information and figures more than he does with the soil and the plow.

## CHAPTER VIII.

### SECTORAL OBSERVATIONS: INFORMATIZATION OF AGRICULTURE

*Like the production and exchange of commodities,  
agriculture will also be transformed by ICT*

*The Information Age  
Wikibooks*

We began this book with a description of Los Baños. Patterned after the land grant or “cow” colleges in America, the University of the Philippines Los Baños campus has almost always been associated with agriculture since its modest beginnings in 1909. I taught development communication at UPLB for more than 25 years. For twenty two of those years, the development communication program was under the College of Agriculture.

The Agricultural Age has brought about the agriculturalization of the planet. The Industrial Age has caused among other things the industrialization of agriculture. The Information Age is resulting in the informatization of the agricultural industry. Perhaps, unwittingly, agricultural development and aid programs have a lot to do with it.

Who profits from agricultural aid? Who benefits from so-called rural development programs? Do agricultural development projects genuinely serve the interests of the small farmer?

Since the days following South Asia's "Green Revolution" development planners and rural sociologists have attempted to answer these questions. Many have casually observed that after decades of agricultural development programs, the so-called intended beneficiaries, the small farmers, have not improved their lot. The Institute for Food and Development Policy, for one, has found reason to believe that many development projects have primarily benefited the rich rather than the poor. The possibility that these projects may in fact be counter-productive to the small farmer, the small fisherman or the upland dweller, empirical referents to Galtung's pPs, has also been seriously considered.

In an attempt to analyze this problem, a number of social scientists have embarked on critical inquiries that tended to pose ideological issues. This often led to polemical or rhetorical arguments which development planners and policy makers refused to dignify. In spite of this, critical social inquiries may be credited for their structural approach to the problem. Perhaps structures are indeed at fault here. But which structures? Class structures? Hardly. Economic structures? Quite possibly.

This chapter submits that existing practices in the agricultural industry as well as policies and procedures on the implementation of development programs, particularly those that govern agricultural aid and technology transfer, by nature, benefit an economic sector other than that originally intended. The information sector is the favored sector as contrasted to the agriculture sector, the intended beneficiary. Let us take the case of the Filipino rice farmer.

For many years, experts have pegged the causes of rice scarcity in the Philippines to inferior production technology, agricultural land conversion and uncontrolled population growth. All of these were valid observations for a time. During the seventies and the eighties, however, poor production technology ceased to be a cause of the rice problem. What with the so-called breakthroughs of the International Rice Research Institute and the millions poured into the Department of Agriculture of which we have much to say later on.

Recently, the shift to biofuel production and the implementation of rice farming subsidies have been added to the foregoing list of factors. To these, I would add another, the shift from agricultural labor to information-related jobs. In a tracer study conducted by the Technical Panel for Agricultural Education, it was determined that only two out of one-hundred Bachelor of Science in Agriculture graduates go back to their lands to farm.

From the mid-seventies onward, Filipino rice farmers were producing more and more except during the droughts that frequently accompanied that obscure natural phenomenon known as the *el Nino*.

And yet, the marginal farmer - the poorest of the poor in the Philippine countryside - was getting poorer. We may attribute this situation to the informatization of agriculture of which there are two dimensions: the market information dimension and the rise of the white-collared agricultural worker.

## **CARTELS**

In October 1990, Filipino farmers enjoyed a bumper crop of rice from the July-September cropping season. It was one of the most bountiful harvests ever recorded in Philippine history. In the province of Camarines Norte, not particularly known as a rice producing area, farmers averaged one hundred cavans of harvested paddy per hectare.

However, on November 5, President Corazon Aquino upon the recommendation of Agriculture Secretary Senen Bacani announced that the price of rice would be increased. And indeed it was, at an average of three pesos per kilo.

In fairness to the Aquino government, it should be stated that a week prior to her announcement of an impending price increase, the Central Bank was forced to devalue the peso because of a record government deficit and the increase in the price of crude brought about by the Gulf crisis. Furthermore, the Agriculture Secretary pointed out that the imported rice stocks were dwindling. But one wonders if the government is justified in jacking-up the price of rice in spite of the record harvest.

With the unprecedented bumper crop, one would conclude that a drop in the price of rice is imminent. Since the supply is high, the demand will go down and consequently, the price. This, however, does not necessarily mean lower returns for the rice farmer since he has more to sell, at least, in theory.

The truth of the matter is that during the last quarter of 1990, the entire nation groaned as the price of rice and other commodities went up. Rice farmers who were expected to gain from the situation were likewise disadvantaged. They were not able to sell their produce at

reasonable prices. On one hand, their bumper crop entailed expensive inputs - certified high yielding varieties, irrigation, pesticides and fertilizer. On the other, middlemen bought their harvest at cutthroat prices leaving them penniless and in debt.

One needs to know the nature of the Philippine rice industry in order to understand how this situation came about. And the nature of the rice industry is such that information, particularly market information, means money and power.

For all practical purposes, the Philippine rice industry then was controlled by a group of obscure Filipino-Chinese businessmen called the Binondo Rice Cartel. The group, known in some circles as the Big Five, was based in the rice-marketing hub of the Philippines, Dagupan Street in Tondo.

Employing a nationwide marketing network composed mainly of fellow Filipino-Chinese traders, the cartel held a viselike grip over rice trading since the post World War II years that enabled them to virtually dictate the buying price of dried paddy all over the country. In almost every province in the Philippines, you can find rice mills owned by these traders. Often, the farmer has no other choice but to sell his produce to them.

Now let us look at the larger picture, the trends that contribute to the perpetuation of the market information problematique.

This situation stems from informatization and globalization trends. The guiding philosophy of aid or official development assistance is such that it lends very well to these trends. The US Congress, in particular, states that the purpose of foreign aid is to "assist the people of less developed countries in their efforts to acquire knowledge and the resources essential for development and to build the economic, political, and social institutions which will meet their aspirations for a better life..."

The focus on knowledge acquisition, information generation and institution building in agricultural development programs may have

been founded on the Chinese proverb, "Give a man a fish and he eats for a day. Teach a man to fish and he eats for a lifetime." But given the actual development experience, this argument may have been carried on a little too far.

## **THE RISE OF THE WHITE-COLLAR AGRICULTURAL WORKER**

If cost-analyses were to become the measure of the nature of an undertaking, then agriculture and rural development may soon cease to be a field activity. It is fast becoming a desk-job. In other words, in such projects more and more funds are being allocated to information related activities and less and less to actual farming activities.

An analysis of technology transfer and agricultural aid policy would reveal the following stakeholders: the national government whose bureaucratic machinery administers the funds; research and development institutions that generate the technology and recommend the mode of transfer; non-governmental organizations which are sub-contracted to implement certain project activities; financial institutions such as rural banks, land banks, national banks, regional and international banks; the academe among whose ranks come the consultants and experts; local agribusiness marketing networks; machinery, chemical and fertilizer industries; consumers of agricultural products; and, lastly, the person who is supposed to be the beneficiary of all these programs, the small farmer representing the small fisherman, upland dweller, rural housewife and out-of-school youth.

It may be noted that the only stakeholder that may be truly classified under the agricultural sector is the last mentioned, the small farmer. The government, R and D institutions, NGO's, banks, the academe and agribusiness belong to the information sector. The industries, although mostly belonging to the manufacturing sector, are partly with the information sector.

We have reason to hypothesize that in agricultural and rural development programs more funds are being poured into the information sector than into the agricultural sector. Consequently, the

economic benefits of technology transfer and agricultural programs accrue more to the first six stakeholders than the farmer.

A case in point is the Masagana-99 rice production program of the Philippines. The M-99 program involved the propagation of HYV (high yielding variety) technology all over the archipelago. The program led to record rice yields and the Philippines was transformed overnight from a rice-importing country to a rice-exporting country. There were adequate rice surpluses from 1975 to 1985. In 1986, a group of concerned scientists from the University of the Philippines Los Baños drafted a position paper that was presented to President Corazon Aquino. The paper stated in part:

*The irony of this allegedly glaring success, however, is that it has been tragically negated and swept away by the worsening poverty of the rice farmers themselves who adopted the HYV technologies even as they admittedly witnessed remarkable yield increases in their farms.*

*"Why have we remained poor and barely able to survive despite improved technology in rice production?" was the resounding voice heard from farmers...While farmers actually doubled their rice yields and some even more, their production costs (especially for chemical fertilizers and pesticides) more than tripled in the long term, upsetting the gains realized from improved yield...The supposedly thousands of beneficiary farmers of the new technologies had become poorer than ever.*

Whose interests were served? Multinational chemical companies such as Du Pont, Shell, Ciba-Geigy and their local representatives; scientists involved in the R and D of this technology; consultancy firms; advertising firms such as J. Walter Thompson; contractors and engineers who built dams and irrigation facilities; rural and government banks; middlemen; and most especially, the scientist-manager whose services were required by the increasingly technocratic programs of the Department of Agriculture.

The position paper further declared that "the majority of our agricultural scientists and technicians shared the blame with the corrupt government that profited from the Green Revolution "while the masses of our people languished in abject poverty and hunger."

The embarrassing disparity between the earnings of a development worker and that of his client is another symptom. The international "expert" is the most glaring example of this. In an editorial critical of international aid, the February 1989 issue of the World Press Review commented:

*Development-aid experts from industrialized nations usually earn at least \$5,000 a month, tax-free --often 20 times what the Third World ministers and officials they advise make. All over the world, university professors--well paid at home--go on sabbatical as United Nations experts for \$7500 a month, plus travel and expenses.*

How much would the going rate be twenty years after? Compare this to how much a small farmer earns.

One wonders where the millions of funds poured into agricultural development programs went. As far as personal service costs are concerned, most of these went to white-collared agricultural workers---accountants, scientists, and technocrats--many of whom have never even planted, raised or harvested anything at all.

If this is the trend, then agricultural development programs are actually pump-priming the information sector not the agricultural sector. All too often, the benefits do not trickle down to the rural populace. The poor farmer remains poor. Agricultural aid and official development assistance are actually injections into the information-based economy.

## **THE NEED FOR POLICY RATIONALIZATION**

In earlier chapters, we have proposed in theory which submits

that in a globalized world, increased informatization unguided by specific value premises has consequences in developing countries and emerging economies. Essentially, we employed the center-periphery structure proposed by Galtung. Given that the cC is information rich, the cP adopts the same characteristic. The periphery of the Periphery nation (pP) then becomes information poor because one expects the gap between the cP and the pP to increase.

We have seen how technology transfer and aid programs serve as dominance mechanisms that increase this gap. If indeed the foregoing arguments are valid, policies governing technology transfer and aid in agricultural development programs need to be rationalized. The situation, if left unabated, may soon become untenable to the millions of small farmers, small fishermen, upland dwellers, rural housewives and out-of-school-youth. And no matter what worldview one espouses, it would be for the interest of the global community that this point is never reached.

Rationalization need not mean a reduction of monies earmarked to the information sector. It primarily means the rearrangement of priorities and the increase of allotment to actual farming activities in the case of agriculture or to direct social services in the case of rural development. Informatization is a global trend and there may be no way of going around it. Perhaps it will be difficult to conceive of another acceptable yet workable scheme to implement aid or official development assistance.

Nevertheless, the situation demands scrutiny. Indeed, teaching a man how to fish would feed him for a lifetime. But no matter how hard one teaches, no matter how much resource is poured into this activity, a poor man just cannot learn with an empty stomach.

## CHAPTER IX. SOCIAL AND POLICY IMPLICATIONS

*A theory should not only be evaluated according to its potential as a reservoir of hypothesis implications to be tested against present reality (data), but as much --- or perhaps more --- as a reservoir of policy implications to be tested against potential reality (goals, values).*

Johan Galtung

The Information Age, it appears, wears two faces in developing societies: one, information rich and the other, information poor. As an attempt to study the implications of such to our social fabric, this work merely scratches the surface.

### SOCIAL IMPLICATIONS

The following propositions may then be pursued further:

***Proposition 1:*** *The more information an individual possesses, the greater is his capacity to avail of additional information.*

***Social Implication:*** The center will tend to depend on the periphery for the production of food and raw materials. It would result in serious consequences for the center the moment the periphery can no longer supply it with these.

***Proposition 2:*** *In a community where the economy is information based, there exists a tendency for the income (and standard of living) of the information worker to increase at a faster rate than the income (and standard of living) of the non-information worker.*

***Social Implication:*** The polarization of these two entities may lead to open conflict, especially when triggered by poverty and hunger.

***Proposition 3.*** The cost of living in an information-rich community is higher than the cost of living in an information poor community.

***Social Implication:*** This situation results in a tendency among the

information rich to want to earn more in order to sustain and perpetuate a comfortable lifestyle. What the information rich does not realize is that hoarding wealth *may* result in the deprivation of others.<sup>3</sup>

In summary, the social implications of these propositions point towards one underlying tendency: the tendency of the rich to get richer at the expense of the poor. Such a tendency is counter to the value premise of equality and complementarity adopted by this work. It may be noted that the above tendency is a direct function of systemic and structural forces. Some kind of asymmetry or invariance is observed in the way information is used as a resource. All too often, this asymmetric structure is, at best, competitive and at worst, exploitative.

## **POLICY IMPLICATIONS**

An exploitative and competitive society breeds dominance relationships. Since this problem is structural, Galtung (1979) offers a similarly structural solution, which he calls *horizontalization*.

### **Policies Promoting Horizontalization**

Galtung refers to this concept as: exchanges between the centers and peripheries "on more equal terms"; the "reduction of vertical interaction" between the centers and peripheries; self-reliance; and even the "destruction of multi-national asymmetric organizations."

Among other things, it could mean a shift in dealings with Center nations (C) in terms of current policies and practices. Almost always, developing countries have failed to negotiate or bargain from a position of strength. In technology transfer, for instance, Philippine officials have always adopted a resigned attitude towards provisions, which impose upon programs, equipment that are exclusively manufactured by donor countries. Yet, we know full well that such technology have been produced with conditions of planned

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<sup>3</sup> Talisayon contests this notion since "Global GDP from services now constitute 69 percent. Knowledge is creating more wealth than natural resources extraction, agricultural cultivation, or industrial processing. Knowledge workers are now the primary wealth creators."

obsolescence and concomitant ideologies as Schumacher puts it. Perhaps, policies or guidelines on the transfer of technology that would enable us to negotiate on a position of strength should be formulated.

In the related area of technical assistance, to what degree are government counterparts involved in policy and decision-making?

In the case of international research institutions, many domestic scientists are aware of the failings of their respective institutions. They would want to do something about it in their own individual capacities. Yet their involvement in decision-making has so far been unsolicited. Thus, the counter values of the elite are reflected in the priorities and decisions of the institution as a whole. Not the values indigenous to a developing nation.

The reduction of vertical interaction could also mean increased two-way communication: between centers and peripheries. Self-reliance is self-explanatory. On the other hand, the destruction of the multinational asymmetric organizations might be interpreted as the dismantling of transnational information and communications technology organizations, international institutions, and media organizations or the withdrawal of periphery support to such mechanisms.

### **Policies on Informatization**

The increasing primacy of information in the national scene should be given due recognition. The national leadership should become aware of the information problematique, so to speak. Current census data point towards its emergence as a significant economic variable. Yet, traditional economic policy analysis disregards the economics of information.

The government should adopt a proactive posture instead of a reactive megapolicy on matters pertaining to information and communication technology. Policies on these matters - such as media ownership, foreign equity ratio on telecommunications industries, freedom of expression, technology transfer, intellectual property rights

and universal access --- should be based more on foresight than on hindsight. The logical consequences of particular courses of action should be anticipated within the context of informatization.

Furthermore, certain government procedures, such as the restructuring of census data acquisition to fit an information based framework, may be recommended. Perhaps, even the National Economic and Development Authority's industrial classification system might be revised to an information classification system.

### **Policies Vis a Vis Values**

Policies are not exclusive products of rational processes but of power as well (Smith, 1976). This can very well be discerned in the field of communication and information. A substantially powerful and formidable bloc within international development circles is vehemently opposed to communication policies of any kind. This is understandable considering Western sentiments towards "freedom of the press." Hence, even if the need for communication policies is urgent, none may be adopted without the support of the powerful.

At any rate, the need for policies is reduced substantially when positive internal values are adopted. Policies are guidelines set by society, imposed externally. Values, on the other hand, are internal control mechanisms. The fewer positive values adopted by an individual or society, the more policies are required. Policies and values are inversely related.

Perhaps, the increasing need for communication/information policies is indicative of the gradual erosion of human values. Hence, the best policy recommendation that may be forwarded at this time may not be one that would qualify as a public policy nor as a social policy. It is the internal commitment to individual or societal transformation.

## CHAPTER X. INTERNALLY DRIVEN TRANSFORMATION

*Transform yourself, transform society.*

*Anonymous*

One remedy forwarded by Galtung proposes effecting "changes in the goals of the Center."<sup>4</sup> Center nations might realize that they are pursuing a policy of exploitation that breeds strife and conflict. The cC might even "reduce its economic growth and change towards a politics of justice," a shift in American policy discernable in the administration of Barack Obama.

It may be easily inferred that the prevailing relationship between developed and developing nations is one generally based on exploitation, conflict, dominance, elitism and other counter values. The most desirable alternative for such a model of relationships should be one based on the study's value premises of equality, harmony, complementarity, integration, participation and interdependence. If exploitative countries are to undergo a change for the better, the economic and political elite that make up their Center should adopt these positive values and transform individually as well as collectively.

Braid (1985) writes of the need for an alternative development model influenced by Third World philosophy, art and religion. This model should be based on "Asian values of harmony, fusion through encounter and dialogue, complementarity, integration and emphasis on wisdom instead of knowledge..."(p.3)

This prescriptive model is based on harmony, integration and convergence rather than on the aforementioned counter values. Harmony of interests exists between the centers and the peripheries. This brings about integration between the centers and peripheries of both developed and developing countries. This relationship is "horizontal" rather than "vertical."

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<sup>4</sup> Former National Security Adviser Jose Almonte, whom Talisayon reported to as Assistant Secretary for National Security, introduced a similar concept, the conscientization of the elite.

Harmony of interests would also exist between:

1. the center of the developed country and the center of the developing country;
2. the center of the developed country and the periphery of the developing country;
3. the periphery of the developed country and the periphery of the developing country; and
4. the periphery of the developed country and the center of the developed country.

*INSERT FIGURE 5 HERE*

Figure 6. Prescriptive Informatization Model

Gradually, these conditions would bring about the convergence (represented by the horizontal arrows) and mutual understanding between these two entities.

*INSERT FIGURE 6 HERE*

Figure 6. Horizontalization and Convergence

As previously mentioned, the Obama administration appears to be working towards this goal. Its genuine global outlook personified by a president with a distinctly American persona, but with direct African roots, an Asian childhood and pronounced multicultural upbringing has tempered the inward looking, self serving foreign policies and actions that have prompted many to believe that the United States is indeed working towards global empire. And yet, if Galtung's theory is valid, then nations no longer work towards this end but the powerful within these nations, embodied by global corporations.

However, there are current examples of positive strides taken by forward-looking corporations that inadvertently adopt horizontalization programs. Take the case of Microsoft.

It may be argued that Microsoft Seattle and Microsoft Manila share the same interests of profit generation or the improvement of the bottom line, so to speak. However, Microsoft Seattle through its corporate bodies and the Bill and Melinda Gates Foundation are working actively to improve educational standards primarily by promoting information and new media literacies, in the US and in the developing world as well. Microsoft Manila is likewise doing its share of educational programs in the Philippines.

In this particular case, there appears to be harmony of interests between:

1. Microsoft Seattle and Microsoft Manila;
2. Microsoft Seattle and school children in rural America;
3. Microsoft Seattle and school children in rural Philippines;
4. Microsoft Manila and school children in rural Philippines; and
5. school children in rural America and the Philippines.

No doubt, Microsoft considers this as the centerpiece of its corporate social responsibility program. However, lifting the rural poor by their bootstraps (or, more appropriately, by their sandals) through promoting information literacy expands the software market and, hence, contributes to the bottom line.

Microsoft may have learned early on that a business model based on harmony of interests is profitable and transcends the zero-sum game. In fact, this model or variations of it have been recently adopted by several other corporations notably Nokia and Eriksson. If this becomes more of the trend rather than the exception then profound changes will be felt at the global, national and sectoral levels.

No longer need distinctions exist between centers and peripheries because of this integration. Developed and developing nations would eventually converge towards mutual understanding, as Kincaid would put it. Thus the possibility of interdependence and complementarity as well as the values of harmony, integration, participation, inclusion and equality is injected into Galtung's model. The relationship becomes horizontal rather than vertical.

In Galtung's words, "No country should consume too little, no country should consume too much." More particularly, no country should consume too little because others consume too much; no country should consume too much because it is taken from others that consequently consume too little (p.426).

Hence, the counter values, which have dominated social as well

as international relations in this era of informatization and globalization, should give way to the value premises adopted by this work. Then perhaps, dominance systems and mechanisms may be eradicated and the Information Age would no longer wear two faces in developing societies.

## LITERATURE CITED

- AGGARWALA, N.K. 1985. NIIO: a hope or a nightmare? **Media Asia**, Vol. 12 No. 1. Singapore: AMIC
- ANON. 2000. **Okinawa Charter on the Global Information Society**, G8 Scholarly Publications and Papers, University of Toronto G8 Information Center.
- ALLEN, T.H. 1978. **New methods in social science research**. New York: Praeger Special Studies.
- BELL, D. 1973. **The coming of the post-industrial society**. New York: Basic Books.
- BRAID, F.R. 1985. *A development oriented communication approach: Some Perspectives*. **Media Asia**, Vol. 12 No. 3. Singapore: AMIC
- BRZEZINSKI, Z. 1970. **Between two ages: America's role in the technotronic era**. New York: Basic Books.
- BURGESS, E.W. and D.J. BOGUE. 1967. **Urban sociology**. Chicago: University of Chicago Press.
- CLEAVER, H.M. 1975. **The origins of the green revolution**. Stanford University: Unpublished PhD Dissertation.
- COLEMAN, J.S. 1972. **Policy research in the social sciences**. Morristown, N.J.: General Learning Press.
- CONSTANTINO, R. 1984. *Transnationalization of communication: implications on culture and development*. **Forum**, Vol.2 No.4.
- COOLEY, C. H. 1909. **Social organization**. Chicago: Charles Scribner's Sons.
- DIDSBURY, H. F. 1982. *The serpent in the garden*. **Communications and the future: Prospects, promises and problems**. Bethesda:

World Future Society, 1982.

DISSANAYAKE, W. 1982. *The vital triad: some reflections on communications technology, third world and education*. Selangor, Malaysia: ITM Shah Alam.

EMERY, F.E. and E. TRIST. 1965. *The causal texture of organizational environments*. **Human Relations**. Vol 18. No.1

FLOR, A.G. and B. G. FLOR. 2001. *The Philippine Communication Scene*. **The 2001 Asian Communication Handbook** (A, Goonasekara and D. Holiday, eds.) Singapore: Asian Mass Communication Research and Information Center and the Nanyang Technological University.

FLOR, A.G. 1993. *The informatization of agriculture*, **Asian Journal of Communication** Volume III, Number 2. Singapore: Asian Mass Communication Research and Information Center and the Nanyang Technological University.

FLOR, A.G. 1986. **The information-rich and the information-poor: Two faces of the information age in a developing country**. Ph.D. Dissertation. University of the Philippines Los Baños.

FRIEDMAN, T. 2005. **The world is flat: A brief history of the twenty-first century**. Farrar, Straus and Giroux.

GALTUNG, J. 1971. *A structural theory of imperialism*. **Journal of Peace Research**, Vol. 8, No.2.

HARDIN, G. 1977. **Living on a lifeboat. Social ethics: morality and social policy**. New York: McGraw-Hill Book Co.

KATZMAN, N. 1974. *The impact of communication technology: promises and prospects*. **Journal of Communication**. Autumn.

KINCAID, D.L. 1979. **The convergence model of communication**. Honolulu: East West Communication Institute.

- KINLOCH, G.C. 1977. **Sociological theory: its development and major paradigms**. New York: McGraw-Hill.
- MASUDA, Y. 1981. **The information society as post-industrial society**. Bethesda, Maryland: World Future Society.
- MINER, H. 1952. **The folk-urban continuum**. American Sociological Review.
- NAISBITT, J. 1982. **Megatrends**. New York: Warner Books.
- PATALINGHUG, E.E. and M. JUSSAWALLA. 1983. **The information sector of the Philippine economy**. Quezon City: U.P. College of Business Administration.
- PORAT, M. 1978. *Communication policy in an information society*, in G. Robinson's (ed) **Communication for tomorrow: Policy perspectives for the 1980's**. Praeger Publishers (New York).
- PRINT PROJECT. 1980. **The techno-peasant survival manual**. New York: Bantam Books, Inc.
- PROCTOR, R. 1991. **Value-free science?** Harvard University Press.
- REDFIELD, R. 1947. *The folk society*. **American Journal of Sociology**. Vol.12, No.4.
- SCHEELE, S. 1975. *Reality construction as a product of Delphi interaction*. **The Delphi method: techniques and applications** (Harold A. Linstone and Murray Turoff, Eds.). New York: Addison - Wesley.
- SCHILLER, H.I. 1976. **Communication and cultural domination**. New York: International Arts and Sciences Press.
- SCHUMACHER, E.F. and P.N. GILLINGHAM. 1979. **Good work**. New York: Harper and Row Publishers, Incorporated.

SMITH, B. 1976, *Policies, power and rationality*. **Policy Making in the British Government**. London: Martin Robertson.

TALISAYON, S.D. 1983. *New development goals and values in response to the global environmental crisis*. **Science and Public Policy**, February.

TAYLOR, M.C. 2001. **The moment of complexity: The emerging network culture**. University of Chicago Press.

THAYER, K. 1968. **Communication and communication systems**. Homewood, Ill: Richard D. Irwin, Inc.

TOFFLER, A. 1980. **The third wave**. New York: William Morrow.

TONNIES, F. 1955. **Community and association**. London: Rutledge and Kegan Paul, Ltd.

WEDEMEYER, D. 1978. **Forecasting communication needs, supplies and rights for policy making and planning in the state of Hawaii**. Unpublished Ph.D. dissertation, University of Hawaii.

WIKIBOOKS. 2008. **The Information Age**. Last Modified 1 December. [http://en.wikibooks.org/wiki/The\\_Information\\_Age](http://en.wikibooks.org/wiki/The_Information_Age)