DISCIPLINE, CULTURE AND INFORMATION SYSTEMS COMPUTERIZATION AND BEHAVIORAL TECHNOLOGY IN GOVERNMENT AND SOCIETY

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ABSTRACT

The broad-spectrum complexity of our national crisis is regarded as characteristic of the rise and growth of population and urban centers. The existing structures and tools of government management do not constitute an adequate means for handling the intricacies of administration and the volume of information quickly and analytically across distance and time, belonging as they do to an era of small organizations and traditional communities. The new information systems technology is proposed for consideration.

A culture of information technology needs a concerted effort in development and therefore will imply an official statement of policy of entry into the Information Age at the highest levels of authority. The reasons for this are conceptualized and examples in the discipline of government and society are alluded to as possibilities that might yield a more adequate information systems technology.

Recommendations are made for establishing the mechanisms for the following 1) a continuing study of the impact of information technology on Philippine culture, all in the service of policy; and 2) supporting and designing the implementation and execution of policies in (1) by the executive and legislative branches of government.

INTRODUCTION

Our Problem

The national crisis seems to have grown to unmanageable proportions: an entire culture is at bay.

We feel the need for some larger understanding of our situation. Is there another way of looking at the awesome diversity and depth of our problems? At graft and corruption in government? At control of crime and law enforcement, malfeasance in the judiciary, at tax collection and smuggling? At poverty? At

environmental degradation and the breakdown in moral standards? Is there a broader conceptualization of the cultural processes in these problems that is both definition of our situation and its solution?

There is a point made by Gunnar Myrdal about transitional, urbanizing societies, "soft states" he calls them, that have not as yet achieved firm institutional control over the softer, intimate relations of an older tradition. Some behavioral scientists call them *loose societies* as distinguished from *tight societies,* where rules, regulations and the law are very much more developed as established norms of conduct. In tight societies, highly-evolved urban complexes and the sanctions on social behavior are more visible, clearer and probably well internalized such that discipline is easier to enforce and maintain.

Why is the Filipino so much more disciplined and productive when working abroad? Is it because the signals, cues and perceptual framework of membership in foreign communities are much clearer in showing him what will happen for what he does or plans to undertake? Maybe the environmental information system, in some broad meaning of the term, is more definitive and relatively compelling in its operation.

There was a time when our societal information system, as well as that of the government, may have been good enough, perhaps about half a century ago. But the world burgeons and moves faster, the mobility and growth of populations accelerate at furious rates, human motivations ramify in all directions, destroying old values and personal boundaries. The resulting loss in social control reveals, in its enormity, problems that challenge our intelligence and our courage.

The Printed Page and the Telephone

One of the most explosive events in the evolution of information systems was the invention of the printing press – the multiplication and distribution of information in quantity. Civilizations were built and developed from books, pamphlets, leaflets, magazines, newspapers, a phenomenon which is described in MacLuhan's **The Gutenberg Galaxy.** Alongside radio and television and the telephone, libraries, mass media, business and industry, bureaucracies and educational and legal systems were spawned and shaped into the institutions that they are today.

The Micro-porcessor and Modern Telecommunications

The advent of the computer and modern telecommunications is creating a new revolution in information systems management that is changing the way people think and do things all over the world. It has become a race to the future. And our country will have become engulfed into the vortex of the inescapable.

Micro-processors have become not only incredibly faster and much more capacious in the systematic collection, storage and retrieval of information in large

quantity but also in the analytical processing of data. The possibilities of improving management and administration of complex situations are almost limitless and are now before us as a new option.

Indeed, there is no problem of choice here because, as noted previously, this is but a question of now or later. Like the printed page, the telephone, radio and television, the computer will soon become a part of our daily lives.

Business and industry here today, by force of necessity, have begun entry into the Information Age and are at the forefront of developments in this field. The computer is not everything there is in management, but it is now more than ever essential for staying competitive. The automatic teller machine of the banking system is a remarkable development in national networking of the computer.

Many government agencies and departments have chosen to computerize and are in various stages of development, all the way from announcements in the newspapers of their intentions, purchases of stand-alone computers, plans and proposals for local or national networking of mini computers and mainframes, or some combination of the foregoing. To name just a few being drawn into the tide of the new revolution in information systems: the Bureau of Internal Revenue, the Bureau of Customs, the Philippine National Bank, the Professional Regulations Commission, the Social Security System, the Government Service Insurance System and the National Census and Statistics Office. The Armed Forces of the Philippines is going to build a national networking information system for quick-response operations and administration. But still there are many government units, some of them revenue collection agencies, that are just limping into the circle, perhaps without any comprehension of their own possibilities with an effective information system.

Schools for computer training are sprouting all over, mostly in centers of population, the major towns and cities. Colleges and universities are now offering computer science degree courses, but the top-rate computer scientists of the country, most of them trained in the best institutions of higher learning abroad, are leaving the country or serving with the multinationals. This seems particularly true of our good programmers or software experts who are now engaged by corporations based in Japan, Switzerland or the United States. Our country seems to have some fair level of readiness to enter into computerization. Still, we are just at the threshold.

The Larger Arena of Information Systems

It is easy to forget that the information system of computer-telecommunication language is but a part of the larger information system that has been developing throughout all of history: from the alphabet and the spoken word, and all sorts of signal systems invented by man in order to communicate and establish forms of social control and governments, to its present stage exemplified by the printed page, radio, television, the telephone and satellite transmission. One scientist considers information as equivalent to energy, energy in the environment that

causes humans to respond. Consider those special arrangements in external world that effectively evoke desirable behavior. Social scientists give special attention to the study of environmental contingencies of human response. These environmental factors are a special area for the psychologist, sociologist, anthropologist, the social engineers, and, oftentimes, without our recognizing it, also the management experts, since indeed the problems we have are in the end problems of management. The poets, philosophers and the humanities at large, as an important part of the knowledge pool, are engaged in the same task in some subtle and deeper sense of indirect management of information; but we will not consider this point for now. Instead we shall try our hand at some of the more recent developments in behavioral science that might have a bearing on our problem.

The Cybernetic System: Quick and Relevant Feedback

The idea of monitoring is a special case of feedback to the observer of information existing in the field of observation. We monitor in order to determine what course of action to take. It is obvious that if the information feedback is fragmentary or too much delayed in time, the information may have become irrelevant for useful action.

But monitoring also has other special effects. Awareness that human behavior is being monitored functions as a corrective or guide: its presence makes for an element of social control, an important feature of the traditional, small communities which have all but disappeared in the maze of urbanizing societies.

Furthermore, feedback is probably the very essence of supervision and management.

More importantly, however, feedback for actions taken has been demonstrated to affect such actions quite dramatically. In our work, we call this effect **immediate reinforcement of behavior.** It does not matter whether the feedback is aversive or gratifying; its impact on behavior is lasting and immediately understandable.

The Unpredictable Schedule

One of the more recent developments in experimental work on behavior, which in principle is capable of generating broad possibilities of application in social control, is that of the variable or unpredictable schedule of sanctions for undesirable or desirable action, whichever is the object of control. Some units of our government have already started utilizing unpredictable schedules, spot checks they are called, during the anti-smoke belching campaign in the streets. The Bureau of Internal Revenue uses the random check for its tax reviews. Done systematically, the unpredictable or variable schedule of contact between the individual and any agency applying the schedule has been demonstrated to exert a very powerful effect on the individual's behavior.

Quite apart from the foregoing observations, the unpredictable schedule allows for an unusual economy in personnel, effort, time and equipment and particularly in the spatial and temporal deployment of encounters between the schedules which can be programmed in diverse ways at will. Since no one knows who will be next in the encounter, the effect on the group would be quite pronounced. The situation now develops a form of discipline where paying attention to the requirements of the law and deciding carefully as to possible consequences becomes important in maintaining clarity of perception and action because the choices are clearer and better defined.

Instructions, Signs and Appropriately Designed Environmental Markers

When instructions are clear and easily understood (in the streets, in buildings, in offices, on paper and posters, in the classroom and wherever), people generally pay more careful attention to and follow what is indicated by the instructions. This is true only, however, if the consequences of following or not following are significant or important to the individual. These consequences are called sanctions, and should always be provided for even if only intermittently. The intermittent sanctions maintain disciplinary control and may be completely benign in character (such as a reminder here and there) or very severe (as in a court indictment that leads to a corresponding penalty). There are levels of sanction in between these two extremes naturally before disciplinary internalization matures into a sense of social order (It should be noted here that the technology of intermittency of sanctions is an area of research that invites serious consideration, since its findings are probably directly applicable to many of our problems.).

To repeat the same points indicated above, there should be a systematic study of our public markers and posters, or more generally, of all instructional signals in the environment, such as those in offices, streets, public places, buildings and so on, the enforcement of which could be monitored at the local level. The environment would be less confusing then because reminders and directives in effect would be all over the place and the public would have some clearer idea of orderly compliance with whatever rules and regulations are expected to be observed. It is necessary in principle to begin with external supports to disciplined behavior in order to approximate and establish gradually the conditions of public shame and individual conscience.

The Externalization of Discipline

Practically all values are formed in the earlier years of the individual through the external social environment and only very gradually are these external elements of control eliminated. By then, we say that the values have been internalized and have acquired a functional autonomy of their own. Whether or not the values of the small community, the family and the kinship system will transfer to and survive

under the new conditions of urban life may be debated and discussed. However, the evidence which is all around us, allows us to conclude that these values have been eroded and have even become a difficulty under the pressure of conditions different from those traditional, soft cultures. This is especially true of discipline as a value.

The Quick-response System; Sharper Contingencies of Management

Many courses of action require information based on what is currently happening in the field operation. All monitoring and supervisory functions consider this kind of information as desirable: not only must the information be adequate and accurate but also contemporaneous. Any delay in its transmission may render the information useless or lessened in value. Contemporaneity of information is one big argument in favor of computerization and telecommunications, but that is not all at this point. Continuity of feedback in time on all actions taken allows a larger panorama of the field of operation and structure of solutions to become more obvious. The way we think out our problems would have undergone a radical alteration because the information technology actually has the potential to alter possibilities of humans responding to situations. In other words, contingencies of management become sharper, clearer as to results, and they indicate where to put human intelligence to optimal use. The current revolution in corporate management, wherein they are re-engineering their institutional structures and information systems to respond directly and quickly to consumer requirements, is one of the most important examples that show the power of a quick-response system due to the new information system technology.

Redundancy in Distributed Information

A noted professor once observed that the ultimate protection against any dictatorial control is the free and widest possible distribution of knowledge and information of every kind to the people. This says a good deal about transparency in social and management processes, for it makes a statement on the preservation of the general social contract which binds society together as a polity, about the fundamental rationale of all governments and organized life. Independent sources of information, or redundancy in the information pool, is one of the most remarkable possibilities that the new information technology may create for us, because in some sense it restores an important feature of social control in traditional societies.

Who Checks the Checkers? Supervising the Supervisors

An important problem in current day Philippine public administration is the question of monitoring the monitors. Another problem with similar characteristics is: how do we enforce the law on the law enforcers themselves? These problems

may partly reduce themselves fundamentally to: 1) the creation of informational structures that automatically make all transactions and processes more visible and accessible to more people on a continuous basis,; and 2) cross-linking the organization or institution with an independent, outside element on a research basis. The possibility of the first suggestion (1) perhaps has a matching tool in the new information system technology, while (2) deserves special attention because of the highly compartmentalized nature of the bureaucracy.

They have confining boundaries that are jealously guarded from being tampered with for reasons of self-interest. Setting up a research arm to study the bureaucracy will be met with vigorous resistance because the subculture they have set up for themselves will be directly threatened. However, more liberal attitudes now are in the air: higher administration is very much interested in coordination and cooperation between departments, with non-government organizations (NGOs) and colleges and universities. While a general statement of government policy about putting an independent research arm within a department or unit may not be necessary, this provision for an effective countercheck or audit should be considered. This problem will certainly be encountered in the course of decentralization of government. The devolution of authority in favor of local governments will meet with similar problems and one way out would be to develop an adequate networked system of information technology before more resistance to innovation sets in. The wide spread in territorial distance will force networking for the Department of Interior and Local Government (DILG) in the end anyway.

The "Fear of Being Caught" vs. Getting Away With It

In one of the more serious articles published during the recent debates on the proposed bill providing for the death penalty for heinous crimes, evidence was adduced to the effect that the death penalty most likely would be ineffective as a deterrent because of a flawed system of law enforcement and administration of justice. The criminal in effect gets away with it. It was argued that it is the "fear of being caught" that will deter the criminal. It is difficult to disagree with this point of view. But what is this "fear of being caught" essentially?

For all practical purposes, it would be quite difficult to keep track of every violator or potential violator of the law. But sampling out a small subset of these violators and meting out immediately the just penalties make for a public statement that should instill a greater respect for the law. The two necessary and sufficient conditions for striking "fear of being caught" are: 1) the identification and apprehension of actual violators; and 2) the definitive imposition of just penalties on the guilty, preferably made known to the public, even if those caught are few in number. People will learn that an inevitable consequence for the violator would be too costly, or, at least, very highly inconvenient. The conceptualization of "fear of being caught" utilizes generation effects of the actual catch.

Furthermore, conditions of greater transparency created by an adequately programmed information system would considerably reduce the temptation to violations of conduct.

New Perspectives, Change and Resistance

Old habits have an inertia all their own; a change in perspective may be a real danger to lives that have been enculturated into an older information system but which have been outdated by the complexities of modern life. Problems multiply and ramify in never-ending complications, and we solve them the same way people before our own time solved theirs. Computerization and networking certainly will change the way we think and act, even our roles and perhaps our image of ourselves. This is a very difficult subject matter, but it is only fitting to suggest the magnitude of the task before us. As noted previously, resistance may take explicit forms in such excuses as that the new technology would be a very expensive affair and that there are other priorities for our scarce resources. The point is that the development of a new information system for the government is a priority. The world is moving inexorably into the global information system in the first place. But more realistically, it could be a fundamental and basic solution to many of our problems of managing the government seen as an organic part of a cultural phenomenon, problems which will yield answers probably only if the new tools of technology are allowed to express the intelligence and creativity of our people. It is a key solution that has the widest possible effects, is versatile and has the power to telescope space, time and distance. It will definitely change our cultural ways and we should prepare for the prospects of this new reality very carefully.

The theory is that any form of development can be accelerated by entering into the Information Age right away and pulling the industrialization and agricultural phases along with it. The expensive outlay for establishing an information system on a national scale should more than pay for itself eventually in terms of the new discipline in government and productivity and efficiency in administration.

Official Statement of Policy

Within the global framework, the nation bids fair to become part of the new revolution in information technology, of the Information Age. Business and industry in the country have moved into computerization and networking ahead of the others, because they know it is the wave of the future, the only way to survive the global competition. The government is very much slower and has been fragmentary in its response. There are a few bright spots, but they seem to be just reacting to situational problems of the moment without the conceptual equipment of a larger developmental program that should enable them to intellectually prepare for the compelling dialectics of historical forces that are already at the threshold knocking insistently at the door for recognition.

Clearly, the state itself must lead in framing an effective program of development for entry into the Information Age. A vigorous statement of policy declaring that the entire government has been formally launched into Information Technology will place every department, bureau, unit and agency of the government

within a single framework, moving in harmony and coordination with every part of the administration machinery. State universities and colleges, the entire educational system will be tasked with the intellectual preparation of our most precious capital asset – our human resources. It will be necessary to study on a continuing basis the total human impact of our entry into the Information Age, as I am sure there will be unique cultural problems of encounter with this innovation.

Commission on Information Systems Policy

It would be necessary to have an independent Commission on Information Systems Policy under the Office of the President of the Republic. The objectives of this Commission would be to study, research on and formulate policies relating to a balanced scientific and humanistic development of our culture as it enters the Information Age. The Commission shall have administrative working personnel and its members shall receive appropriate emoluments and expense privileges for work rendered. A broad spread of the disciplines shall compose the membership of the Commission, as follows:

anthropology	mass communication
sociology	literary arts
psychology	history
economics	performing arts
political science	physics
education	biology
linguistics	chemistry
law	mathematics
health sciences	philosophy
2 generalists as members-at-large	

Joint Executive-Legislative Commission on Information Systems and Technology

For the implementation and execution of policy, this Commission will create enabling legislation for entry and sustained development in information systems technology for the country, particularly in the bureaucracy itself. There will be programs in human resource development, national problems of ethical and security regulation that will require legislation, and above all, budget problems and the search for financial resources. The membership will be on an ex officio basis, suggested as follows:

The President or his/her representative;
Senate Chairman on Science and Technology (S & T);
House of Reprsentatives Chairman on S & T;
Director, National Computer Center;
Director, University of the Philippines Computer Center;
Secretary, National Economic and Development Authority;
Director National Census and Statistics Office;
Commissioner, Bureau of Internal Revenue;
Commissioner, Bureau of Customs;
Secretary, Department of Budget and Management;
Secretary, Department of Interior and Local Government;
Secretary, Department of Transportation and Communication;
Secretary, Department of Science and Technology;
Secretary, Department of Education, Culture and Sports;
Secretary, Department of Health;
Secretary, Department of National Defense;
Secretary, Department of Justice;
Director, Philippine National Police; and
President, University of the Philippines System.

This virtually is the cabinet of the President together with key legislators and some experts in computers and telecommunications.

Planning and design for the entire government could be initiated without too much delay. Since projects of this kind take time even just to begin in some small way, it is essential to start early. Government must have the plan and the political will to develop its financial resources for the purpose: loans, transfers in allocation or priorities, grants, donations, taxation, for short term, medium term and long term parts of the project. There shall be an overall plan that sets standards, provides for development and growth, step by step, but leaves important choices to be made at lower levels, with every unit in the same general direction, integral to each other, coordinated and related but independent and free.

SYMPOSIUM V

Symposium Title	:	"Discipline, Culture and Information Systems Computerization and Behavioral Technology in Government and Society
Moderator	:	Academician Bienvenido O. Juliano
Rapporteur ´´	:	Academician Tito A. Mijares
Speaker	:	National Scientist Alfredo V. Lagmay

SUMMARY

The paper is an attempt at broadening the cultural processes of problems in "loose societies" where rules, regulations and the law are not as well developed as established norms of conduct as in tight societies." Graft and corruption in government, crime and law enforcement, malfeasance in the judiciary are manifestations of loss of social control and lack of social discipline.

Solutions to these problems might be viewed from the perspective of improving information systems in society and developing an information culture in all aspects of social behavior to instill discipline and respect for the law and established norms of conduct.

The Philippines, in the author's view, has not yet caught up with the Information age in which the world lives today. Like printing, the telephone, radio, television, technological advances in computer and telecommunication systems are becoming a part of our daily lives. In the Philippines, however, we are still in the threshold of these developments. The relatively few who are well trained in information technology are either leaving the country or are serving multinationals.

Information systems and their management touch every aspect of human activity. The psychologists, sociologists, anthropologists, social engineers and all those at the core of technological and scientific investigations – even the poets, philosophers and artists -- are to a certain extent engaged in information management. An application of information in social control is in the "quick and relevant feedback" mechanism it can provide as basis for useful action. In monitoring human behavior as feedback for actions taken, the behavioral scientist calls it immediate reinforcement of behavior. Examples of these include "spot checking" (unpredictable scheduling) in the anti-smoke belching campaign and "random checks" in tax reviews. These exert powerful effects on individual behavior while permitting economy in the use of resources such as personnel, time and effort.

When possible consequences become clear in violations of rules and regulations, discipline is easily engendered. The sampling out of a few criminals and meting out immediate just punishment for their acts will do more to deter would-be criminals and instil more respect for the law than the "fear of being caught" argument such as the death penalty propounded by some legislators.

Disciplined behavior needs external support under the environment of constant and clear reminders (i.e., information) for an orderly compliance of rules and regulations in society. As a means toward formation of good values, discipline needs to be internalized for it to acquire a functional autonomy of its own.

It is also said that the widest possible distribution of information and knowledge (transparency) ultimately protects society from dictatorial rule. Also, unimpeded access to information in government bureaucracies could provide counterchecks on undesirable performance.

Computerization and networking can change the way we think and act, in fact, change our cultural ways. While it may be expensive, the development of a new information system for government should be given priority.

RECOMMENDATION

The author suggests the creation of a: 1) Commission on Information Systems Policy to study, research on and formulate policies relating to a balanced scientific and humanistic development of our culture as it enters the Information Age; b) Joint Executive-Legislative Commission on Information Systems Technology to create enabling legislation for entry and sustained development in information systems technology for the country.