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THE COMPUTER IMPACT IN THAILAND*

by

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1. GENERAL

Since the first computer known as the IBM 1401 was installed at the National Statistical Office (NSO) in Bangkok a little more than fifteen years ago, there has been a steadily growing interest in data processing technology and an increasing number of computerized data processing applications both in the public and private sectors. Today the number of small- and medium-scale computer systems installed in Thailand may reach 170. Of which over one hundred systems are believed to be minicomputers. The purpose of this paper is to express an idea of how the author feels about the impact the computer has had on Thailand's industries.

2. ON EDUCATION

A recent survey reveals that the number of computer installations has increased at an accelerated rate. If this trend continues, the nature of computer applications will largely change. As the organization's size and its operations expand and become more complex, a traditional, basic automated system is no longer adequate; more sophisticated computer systems are required to cope with the rapidly changing environment. However, the success in computer applications does not depend on advanced technology alone but also, increasingly, on manpower. Thus a computer using organization find that rapid expansion of computer applications creates a long, hard problem of edp personnel shortage, hindering effective management. Moving ahead too fast, especially on computer hardware, often creates difficulties in keeping pace with the hardware technology on the part of personnel, resulting in somewhat chaotic conditions. In my knowledge, a solution to such problems appears to be education and on-the-job training. The first will definitely be supported by academic institutions which is the major supplier of the needed edp personnel while the latter will largely be conducted by computer vendors and government agencies. Unfortunately, the needs may not be met in time.

Generally speaking, current educational programs in the computer field offered at various universities or colleges in Bangkok are not responsive to the needs. As a matter of fact, many courses are obsolete in their contents. They appear not to be practical enough to equip the students with solid knowledge and experience before entering the field. This phenomenon is caused by many factors which are beyond the scope of this paper. But one thing that causes such limitations may be attributed to a lack of integrated and realistic long-range educational plans in this regard. The importance of electronic data processing technology may not be fully realized by those responsible for higher education planning. Evidently, computer-related subjects continue to be found, though only partially, under other fields of study such as Science, Engineering, Statistics and Business Administration. Typical courses are: Introduction to Electronic Data Processing and Basic Computer Concepts, and computer languages such as COBOL, FORTRAN, and RPG. Some universities possess small- or medium-scale computers for teaching purposes, but no advanced application software has been found. Only one university offers a program which leads to a bachelor's degree equivalent to that in computer science.

Turning next to institutional training programs in the field, one may also find that these programs are at best inadequate. Even though many training programs conducted by computer vendors, local universities, and government agencies (the NSO, for example) will help fulfill the needs of edp personnel, general statistics indicate that they will meet only a small fraction of the total needs. Inadequate educational and training programs have resulted in high mobility of experienced edp personnel which in turn has an aggravating impact on personnel problems.

3. ON COMMERCE

In the past, business information was processed basically with sorters, accounting machines, and tabulators. Systems were rather straight forward, and designed just to keep the immediate past records of the business activity. But such systems can no longer serve the multipurposes of the organization needs of business information, as the environment in which the organization operates has changed. The needs for accurate, relevant, and timely information become critical, especially related to management functions. Thus, many computer systems were installed recently and still more are in the process of installation in various big-to-small business firms to assist in management tasks. Computer applications in the business area are going to mushroom as in many other countries. Many new applications are going to be seen which will largely change the way in which businesses are conducted. One may observe that users' buying habits today are such that they are no longer acquiring just bare computer power alone. They are beginning to call for extra software packages as well. Such applications as payroll accounts receivable and payable, personnel, and inventory control are increasingly being found in the commercial area, as a result. It was not until recently that the computer has been thought of as a useful tool for management at a higher level.

4. ON INDUSTRY

Private industry in Thailand may be classified into two groups. One is represented by foreign investment, the other being domestic companies. Political stability pledged by the present Government has brought back a favorable investment climate. This plus low cost of skilled labor has encouraged many manufacturing firms in the U.S., Japan, Germany and other nations to put up plants here. The bigger ones such as oil companies; namely, Shell, Esso, Summit are prime users of data processing services. Principal applications are inventory control, material analysis, personnel and payroll. Because these are production units, the companies lack adequate incentive to pursue data processing techniques in-depth. Another reason is that the computer time provided by computer vendors in Thailand is prohibitively expensive, thus restricting new applications development.

5. ON SOCIETY

It has been said that the computer is one of the most important technological developments in the 20th century, which has had a major impact on society. Computers help improve our standards of living in many ways; namely,

more responsive government, better information on public welfare, law enforcement, public health, and education.

Considering the computer as used in Thailand, one may agree that it has had little, if any impact on society. This is probably because our computer applications are only at a beginning stage. Another point may be that most computer centers gear towards self-serving purposes except those which are supported by government. Though a few online computer systems have been implemented, they serve only a small fraction of society as a whole. However, as society is raising its level of interests such as in improved government efficiency, better higher education, better law enforcement and public health, and more effective programs in general; better information about government and commercial activities is extremely important and in greater demand. Recognizing this fact, the government is hard at work establishing a National Computer Center to work in support of the government policy on information systems. This, hopefully, is encouraging better utilization of computers and information systems to be developed in the public sector. And these will surely have their effects on society, in time.

6. ON GOVERNMENT

To begin with, Thailand has invested millions of Baht in her electronic data processing systems each year in hopes that these systems will provide valuable assistance to national economic planning and social development. The number of government computer systems installed and application being automated have steadily increased.

While the planning and development objectives are not yet fully realized, the costs of EDP operations continue to go up. This is largely caused by some of the government computerized projects which require excessive data preparation and computing equipment regardless of the organization's actual workload or systems requirements. Sometimes the equipment seems to be acquired solely for status purposes rather than to deliver improved services to the public.

Political factors too often play a major role in the government's use of computers. The organizational status is often equated with the size of the equipment, especially with computers. Computerized Government applications, which range from basic record-keeping to national resources survey by satellite, include Highway, Irrigation and other infrastructure project; population census and related surveys and analyses; economic forecasting, public utilities, land reform, police information systems, national resources survey, and many others. Other applications are being planned by many agencies such as government personnel databases, national consortium library, street traffic control, and land transportation systems, among others.

Without a master plan, computer use in government will become too costly and unmanageable. National policy and objectives of the government's development of computer-based information systems must be formulated, on a coordinated basis, and go into effect in time; otherwise, the continuity of services will be hindered. Fortunately, a National Computer Committee has been formed in attempting to achieve these goals as a part of its responsibilities. A question remains unanswered. That is. Will the policy be effective enough to guide all the government's edp activities toward the aforementioned objectives?

Only time and careful effort will tell.

Computer uses in government have already had a considerable impact on the organization structures, lines of authority, and the way that government business operations are carried out, especially on personnel management. Continued progress can be expected.

7. DATABASE ORIENTED

Computerization with databases will make it possible for organizations to maintain more up-to-date and complete records, share data among several application users, obtain faster responses to inquiries about the business of their organizations, be easy to maintain and update with current data. Although the technology of databases has been available for years, only a few have been successfully implemented. Use of data base techniques seems to be a long way in Thailand's future.

8. THE COMING AGE OF MIS

Parallel to the database development is the MIS concept. The term, Management Information Systems(MIS), has been widely used as though it was well understood. Not long ago, a systems analyst of an organization told me that he was developing MIS to solve the organization's previously unsolved problems. But when we have talked on that matter for a while, I found out that what he meant by MIS was the same, operational-level applications as before, but with minor basic modifications. What a MIS! No matter what is meant by MIS, systems presumably called MIS's are being developed. As far as I understand, MIS development involves knowledges and skills in many fields in addition to a great deal of effort and use of the organization's resources. So far I know of no organization that has been successful in developing a MIS. Top management should be warned about hastily getting into it. Remember-Don't be the first; Let some one else be the pioneer!.

9. INCREASING ROLE OF MINICOMPUTERS

Although minicomputers have not been widely known, they are rapidly coming to play a significant role in Thailand's computer market. Their potentials look great, especially on such applications as hospital administration, data entry, data acquisition, front-end communications processing, and general business and government jobs. Computer experts have said the only thing that will limit their applications is the user's creative ability to design his own truly useful applications.

Today, we continue to see novice computer users being misled by salespersons and by their narrow knowledge of computers. Whoever happens to be responsible for computer-based information development has been apparently preoccupied by the deceptive misconception that only the big machine can do his job. Consequently, the system that was developed has often failed to perform what it was intended to do, or results in prohibitive cost.

This also suggest a lack of understanding on the part of the user especially at a high level of management. With its low-cost, high-performance characteristics, the minicomputer will play an increasing role in Thailand's computer applications in the near future.

10. CONCLUSION

The present situation of Thailand's data processing has been described. Related problems have been broadly identified and possible solutions been suggested. The problems may be summarized as follows.

- (1) Lack of edp personnel at all levels.
- (2) Educational programs do not respond to the local needs and fail to meet the demands.
- (3) Lack of technical and managerial knowledges on the part of computer users.
- (4) Underutilization of EDP equipment.

All things considered, the situation will soon be improved as the National Computer Committee(NCC) is formulating both short-term and long-term solutions. The NCC's major responsibilities are (1) considering the feasibility of the government agencies acquisition and use of EDP equipment in connection with economic, application and organization aspects, and (2) defining a structure for administering all the computer activities in Thailand.

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