

IT DEVELOPMENT IN THE ROYAL THAI ARMED FORCES

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1. INTRODUCTION

Military warfare has through history evolved hand in hand with the evolution of technology. Modern armed forces strive to use the latest of technologies to develop warfare, as means of effectively deploy military power to safeguard the Nation and National Interests. Biological Warfare, Nuclear Warfare, and Electronic Warfare are some of the recent ones and still are quite valid. Information has emerged as the latest of all technologies today, Information Technology (IT) is the basis of next generation warfare, "Information Warfare". Future wars will be fought using Information Technology in rapidly increasing amount, as did in the Gulf War.

However, combat is not the only function of the armed services, management or administration is also an important function. Inefficient resource management in peacetime would certainly result in low level of readiness in time of war or requirement of combat. The requirement of IT in the military can be separated into two major groups, one for combat information formally called ³I), the other for management formally called "Management Information Systems" (MIS).

2. GOVERNMENT POLICY

Information Technology policy directed from the Thai Government can be grouped into three phases as related to the National Economic and Social Development Plans (NESDP).

2.1.PHASE 1

During the 1st to 4th NESDP from 1961 to 1982, was the very beginning of planned development strategies to bring the country out from the traditionally agricultural society to be an industrial society. This phase stressed the development of technology and its infrastructure, such as electrical power, transportation, communication, and telecommunication which indirectly were promoting mass media communication.

2.2.PHASE 2

During the 5th to 7th NESDP from 1982 to 1996, having seen the first four NESDP successes in developing the country into a "New Industrialized Country (NIC)", further needs of infrastructure was evident. Infrastructure for IT and communication covering all regions of the country was addressed in this phase. Visualizing that manufacturing systems and quality must be improved, emphasize increasing the level of public relation, equipment, and technology of basic media. Utilizing IT as a tool for increasing Thailand's international competitive-ness.

2.3.PHASE 3

Is the present period, halfway through the 8th NESDP which is planned for the years 1997 to 2001. This phase, the NESDP stressed using IT extensively, especially stressing the importance of its use in governmental agencies to modernize the work-flow system, improve the work environment, and subsequently increase their efficiencies. Moreover, the Plan encourage the use of IT to develop families, communities, and societies. A National Information Technology Policy was also established

to give a clear and precise direction of development of Information Technology envisioned by the Government, it is formally called "IT-2000: Thailand National IT Policy".

3. DEFENSE POLICY

The armed services have been utilizing information as a basis for deriving military intelligence for a long time, but using it as a tool of management has not been materially pursued. Having seen the positive trend and progress of the first four national development plans, towards the end of the 4th NESDP, the Ministry of Defense in 1982 established the Defense Information Systems Development Committee. The Committee was tasked with setting policies to facilitate the acquisition of data and information that are required for command and control, which will ultimately be the basis for decision making.

The Secretariat of the Committee has been the Military Information Department, Supreme Command Headquarters responsible for planning, research and development, data processing services, center for computer technology, set standards in acquisition, utilization, and operations of data processing activities, training and education of linked EDP, develop EDP systems towards an integrated Command, Control, Communication and Intelligence system for the Thai Armed Forces.

The Committee has formed several sub-committees, each responsible for formulating policies and guidelines for acquiring data and information of a particular area, such as Operations, Intelligence, Logistics, Personnel, and Finance/Budgeting.

4. SUPREME COMMAND HQ

Being a unified command headquarter for combat operation, the SCHQ therefore has not been interested in emphasizing the development of an information system for management, but a combat oriented information system, the C³I.

The Military Information Department with the Military Computer Institute under its command is presently the only military establishment using a mainframe computer. It was formerly the Data Processing Center of the Supreme Command HQ's Office of the Comptroller. SCHQ through the structure of the Defense Information Systems Development Committee and Sub-Committees have established four Command Centers; Crisis Action Center, Joint Operations Center, Joint Exercise and Simulation Center, and Mobile Command Post. They are linked to the local area networks and wide area networks of the Royal Thai Army, the Royal Thai Navy, and the Royal Thai Airforce, accessing the required data and information. Due to security requirements almost all military networks are made up of military micro-wave links, dedicated leased-lines fiber-optics or military-owned communication lines bypassing any commercial or civilian junction points.

5. ROYAL THAI ARMY

In the past, the Royal Thai Army has been quite reluctant in adapting high technology, they have been known to trail the other two services. When the SCHQ, the Navy, and the Air Force were utilizing mainframe and minicomputers the Army was still on PCs. People speculated whether the Army lacked personnel in those high-tech areas, or what was behind it. No, the Army did have abundant number of Ph.D. and M.Sc. in many fields, but their reluctance stemmed from the simplicity of Army weapon systems and equipment compared to the Navy and Air Force.

But today's Army is quite different on the positive aspects, Information Technology, Internet, Intranet, Management Information System, C⁴I, and Information Warfare are being implemented and supported by top commanders. At the helm of Information Technology development is a newly established unit, The Military Technology Center, commanded by a major-general and staffed by several Ph.D. and MSc. in the computer field. For the Army, MTC has established an extensive local area network of several hundred computers within the command headquarters. Vast amount of information of each departments connected are accessible for staff officers in the network. Late 1998 the Army subscribed to the Internet, almost one thousand email and Internet accounts were distributed among staff officers to facilitate Internet communication and access to the Army's internal information network, which are segmented into six general staff groups; Personnel, Intelligence, Operations, Logistics, Civil Affairs, and Comptroller General. Departments are establishing websites on the Internet to make available to the soldiers and the public information they are entitled to know.

The combat information requirement for the Army is similar to that of the SCHQ, only another C has been added and it is called "Command, Control, Communication, Computer, and ⁴I). Databases for terrain, weather, digital maps, enemy force information, own force information, doctrine and tactics, field activities, etc. are essential and data links to those distributed database are formed.

Today's Thai Army is information conscious, and is utilizing information technology to support management and decision making in peacetime, which will in turn improve its combat readiness when the time comes.

6. ROYAL THAI NAVY

The forerunner of technology in the armed services, the Navy has always been deeply involved due to its complicated weapon systems and hi-tech equipment. In 1982, when the Ministry of Defense established the Defense Information Systems Committee, the Navy in turn established the Navy Information Systems Committee, chaired by the Deputy Chief of Staff. And likewise formed five sub-committee representing the five general staff groups; Personnel, Intelligence, Operations, Logistics, and Finance/Budget. The Committee planned and supervised the development of the electronic information systems in the Navy, with the Naval Data Processing Center acting as the secretariat.

The original concept was a centralized information system where the core of the information was an IBM mainframe computer at the Naval Data Processing Center, linking upwards to the SCHQ, and downwards to the different departments in an internal star network configuration, scores of computer terminals. An IBM mini computer was also utilized before the mainframe was leased, then used as a backup. The development progressed very slowly and was obstructed by many problems, some technical issues and some regulatory issues. The mainframe computer was difficult to manage and for end-users was not user friendly. The use of electronic information was not yet supported in the regulations, thus, using it requires even the old paper copy, making it even more troublesome and slower. Finally the centralized information system concept was discarded, and in 1989 the Navy stopped leasing the mainframe and installed a few hundred PCs connected in LANs, one for each sub-committee to build distributed databases, and a few more for technical departments. Those LANs were also interconnected via gateways. The ease of use of the PCs resulted in rapid development of the information system. In 1993 the Naval Information Systems Committee was disbanded and the Naval Data Processing Center, Office of the Comptroller assumed responsibility of all information systems development and computer matters in the Navy.

In 1998, the Navy entered the cyber community by connecting to the Internet with 64 kilobit/second bandwidth as the first military unit in Thailand to make such a move. Most of the existing LANs were connected allowing Internet and World Wide Web access to the majority offices in the Navy Headquarters. Approximately 1000 Navy personnel were given Internet accounts and email addresses free of charge. Navy websites emerged with vast amount of information for both the Navy personnel and even for the public. The Navy Commander-in-Chief and many high ranking officers use the Internet daily. Policies concerning the use of Internet to increase work efficiency and reduce communication costs have been evident, and have been put to actual implementations. The use of Virtual Private Network Technology is being studied to in the future replace dedicated private links which are very costly and are considered inefficient use of resource. In October 1999, the Navy upgraded its Internet bandwidth to 128 kbps., and interconnecting its Internet networking to other Navy units outside the Bangkok.

7. ROYAL THAI AIR FORCE

The youngest armed service of the three in Thailand, the Air Force was developed from the Army Air Unit from the time when an aircraft could glide easily without engines, that is , a long time ago. The Air Force, like the Navy has always been very technically minded, because their weapon systems and equipment are more technically advanced than the Army's rifle and bayonet. When the Defense Information Systems Committee was formed in 1982, the Air Force also formed their Information Systems Committee, including the required sub-committees. The Air Force concept on Information System was similar to the Navy, a centralized information base built into a mainframe computer. The secretariat was different from the other services, it is the Department of Electronics.

The Air Force had quite good vision on Information Technology, they have developed considerably more than the Navy or Army. It could be that their organization was more appropriately structured, the responsible authority is a technical unit compared to the Office of the Comptroller of the other services, which have no interest or relationship whatsoever with computers or information technology.

In 1995, The Air Force formulated two very interesting and critical plans; The Computer Development Plan 135, and The Air Force Information Technology Development Plan. The CDP 135 will not be discussed because it involves just the computer hardware, software, and associated equipment only. The AFITDP dictates the architecture of all Air Force Information Technology which includes; the Management Information System (MIS), the Executive Information System (EIS), the Air Force Intranet Prototype, Information Technology Standards, Information Technology Security, Information Technology Manpower, and Information Technology Budgeting.

EIS started in 1996 where information from the five general staff groups (Personnel, Intelligence, Operations, Logistics, Budget/Finance) are collected. Furthermore, links to the 10 major Air Force Depot are established. EIS network comprise of a UNISYS 2000 with UNIX V in the core and 486 PCs with Windows 3.11 as intelligent terminals. They are linked via fiberoptics utilizing TCP/IP. Database for the information are programmed with MS Access at the start and upgraded to Oracle in a later phase. EIS relationship to MIS is really very close or even an integral of MIS. All basic information collected including laws, regulations, orders, circulars, and other administrative information form the main database for MIS, which might be compared to the pyramid base. Information from MIS are further analyzed to get intelligence required for top decision makers and put into the EIS. Both systems are in part operational to a degree.

The Air Force have not established an Internet Server like the Navy and Army yet, their usage are still limited to dial-up accounts individually. One Air Force Website has been established residing with some provider.

8. SUMMARY

The Thai Armed Forces are active in the development of Information Technology, some more active than others. The factors slowing down the advancement can be two main issues. One is the budget problem, the military has been faced with very severe budget cuts since the start of the economic crisis, in some cases will affect several more years on because of unpaid weapon acquisitions. So, if the development of IT is not on the critical list, it will be delayed. The other issue could be the resist to change due to shortage of qualified personnel.