



# GAGAH SETIA Sorotan Darat

## JURNAL TENTERA DARAT MALAYSIA

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Jen Tan Sri Muhammad Ismail bin Hj Jamaluddin

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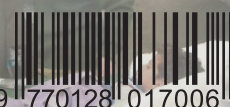
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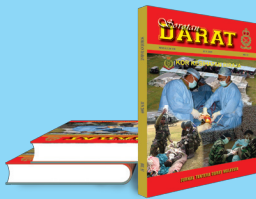
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*Muka Surat 6*



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## DARI MEJA EDITOR

*Dengan Nama Allah Yang Maha Pengasih Lagi Maha Penyayang.*

*Salam Sejahtera,*

*Syukur Alhamdulillah, penerbitan edisi akhir Jurnal Sorotan Darat pada tahun 2009 ini dapat diteruskan dan meremui para pembaca dengan artikel-artikel yang menjadi penjana minda Warga TD. Sidang Redaksi merakamkan setinggi-tinggi penghargaan kepada para penulis yang telah mengemukakan sumbangan artikel dalam menjayakan penerbitan jurnal ini. Tanpa komitmen dan sumbangan karyawan daripada Warga TD, maka sudah tentu penerbitan jurnal ini tidak dapat direalisasikan.*

*Penerbitan jurnal edisi kali ini, memfokus ke arah pentadbiran organisasi Kor Kesihatan DiRaja dalam konsep bantuan perkhidmatan semasa aman dan semasa operasi. Ini dapat dilihat dalam artikel utama yang berjudul "The Medical Battalion and its Field Health Services Support in Malaysia". Kepentingan perkhidmatan hospital dalam pengurusan individu menjadi perkara utama sebelum bersara dan ianya mampu memberikan maklumat mengenai halatnya kehidupan bakal-bakal pesara tentera selepas mereka menamatkan perkhidmatan.*

*Seiring dengan arus pembangunan TD masa kini, Sidang Redaksi ingin mengalihkan tumpuan pembaca terhadap keupayaan TD dalam menghadapi ancaman-ancaman semasa khususnya di rantau Asia Tenggara. Selain daripada itu, TD juga harus mengorak langkah dalam meningkatkan keupayaan logistik, pengurusan dan juga pembangunan modal insan yang dapat meningkatkan tahap profesionalisma dan kesiapsiagaan Warga TD.*

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*Membaca Inspirasi Pengetahuan.*



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By Lt Kol (Dr) A. Rozali bin Ahmad

### SYNOPSIS

The Medical Battalion (Med Bn) of the Royal Medical and Dental Corps (RMDC) is a Combat Service Support Element of the Malaysian Army. It provides Field Health Services Support (FHSS) during military operations. The present organizational structure of the Med Bn was first established in 1983 after a series of development, reorganization and restructuring of the RMDC which was required to meet the demands of the concurrent expansion and modernization of the Malaysian Army. New assets such as shelters and medical equipments were acquired to enhance its FHSS capability. At present, there are two Med Bn in Malaysia, one in Peninsular Malaysia and the other in East Malaysia. The services provided by the Med Bn have been expanded tremendously since the 1990's to include services not only during military exercises and operations, but also in the United Nations (UN) Peace Keeping Missions, Civic Action Programmes (CAP), and Disaster and Humanitarian Missions, as well as providing medical cover in major local and international sports events. The objective of this paper is to provide a brief report on the Medical Battalion and its FHSS in Malaysia, as well as to provide some thoughts for its future direction and challenges.

### INTRODUCTION

The development of the Medical Battalion began hand in hand with the development and expanded organizational structure of the Royal Medical and Dental Corps (RMDC). It was formally established in 1983 by integrating the four Field Medical Platoons (Fd Med) and four Field Surgical and Transfusion Teams (FSTTs) which was in line with the expansion and modernization of the Malaysian Army.

#### Development of the Field Medical Platoon (Fd Med PI) and the Field Surgical and Transfusion Team (FSTT)

The first Fd Med Platoon (1<sup>st</sup> Fd Med PI) was formed in December 1965 at the Haigate British School in Kuala Lumpur. This was followed by the establishment of the 2<sup>nd</sup> Fd Med PI on 14<sup>th</sup> May 1969 at Terendak Camp, Melaka. 1<sup>st</sup> Fd Med PI

was moved to a new location in Kuching while 2<sup>nd</sup> Fd Med PI was relocated in Kluang, Johor in 1972. Meanwhile 3<sup>rd</sup> Fd Med PI was also set up at Kinrara Camp, Kuala Lumpur in January 1972, with 4<sup>th</sup> Fd Med being formed in October 1979, also in Kinrara Camp. In order to support military operations of the 2<sup>nd</sup> Infantry Division along the northern border, 3<sup>rd</sup> Fd Med PI was moved to Lapangan Terbang Camp, Sungai Petani in November 1981.

The Fd PI Med and FSTTs provided the FHSS with early medical and surgical treatment and casualty evacuation for all injured Army personnel involved in military operations during the period of the armed conflict against the Communist terrorists.

#### Development of Medical Battalion

In the early 1980's, the Malaysian Army expanded its operational concept from counter



insurgency to conventional warfare by enhancing and equipping all its Infantry Corps, Artillery and Armor Corps, the Engineer Corps and General Services Corps, which included the RMDC. The concept of having a Med Bn with the two elements of a Forward Hospital and a Casualty Evacuation was conceived to ensure that all military operations would be adequately supported with an enhanced FHSS.

Two Med Bn were formally established on 21<sup>st</sup> April 1983, made up of components of Fd Med, FSTT and the mobile Dental Clinic Section. The First Med Bn (1<sup>st</sup> Med Bn) was formed by combining the 1<sup>st</sup> Fd Med PI and 2<sup>nd</sup> Fd Med PI with a Mobile Dental Section from Terendak Camp. From this set-up, two Medical Company (Med Coy) were formed one was located at Kluang, Johor and the other in Kuching, Sarawak. The 3<sup>rd</sup> and 4<sup>th</sup> Fd Med PI with their FSTTs and four Mobile Dental Clinics were integrated to form The Second Med Bn (2 Med Bn) at Kinrara Camp, with one of its Med Coy stationed at Lapangan Terbang Camp, Sungai Petani.

### **The First Medical Battalion (1 Med Bn)**

The Headquarters (HQ) and one Med Coy of 1 Med Bn are now located at Kem Sentosa in Kuching, Sarawak. Its second Med Coy was relocated to Kem Lok Kawi, Kota Kinabalu, Sabah in 2003. 1 Med Bn provides FHSS to the operational areas under the First Infantry Division in East Malaysia (Sabah, Sarawak and Wilayah Persekutuan Labuan).

### **The Second Medical Battalion (2 Med Bn)**

One Med Coy of 2 Med Bn has remained in Lapangan Terbang Camp, Sungai Petani, Kedah while the Med Coy at Kinrara was moved to Mahkota Camp, Kluang, Johor, together with its HQ. Because of its location within the 3<sup>rd</sup> Infantry Division in the southern region, the establishment of Third Med Bn (3 Med Bn) is being used until today. 2 Med Bn provides FHSS to the operational areas in the northern region to include Perak, Pulau Pinang, Perlis, Kelantan and Terengganu). While 3 Med Bn supports operations of the 3<sup>rd</sup> Infantry Division in Melaka, Negeri Sembilan, Johor and Pahang .

## **ROLE AND FUNCTIONS**

The Medical Battalion of the RMDC is a Combat Service Support Element of the Malaysian Army. A Medical Battalion comprises a Medical Battalion Headquarters (Med Bn HQ), a Headquarters Company (HQ Coy) and three Medical Companies (Med Coy) although currently there are only two Med Coy available in each of the Med Bn. The Med Bn deploys Army paramedics with appropriate medical equipments based on the nature of military operations they are involved in.

The role of the Med Bn is to provide a comprehensive FHSS during military operations through:

- Setting up a Forward Hospital with a bed capacity of 50 to 150,
- Treating, clearing and evacuating of casualties rapidly,
- Replenishing essential medical supplies and equipments
- Augmenting medical elements at the Battalion Regimental Aid Post (RAP) when not engaged in casualty evacuation,
- Providing hygiene services to attain an environment conducive to the health and well being of the troops.

The two main functional elements of a Med Bn are its Forward Hospital Element and its Casualty Evacuation Element.

- **The Forward Hospital Element** is designed as such, so that it can be set up and moved from one location to another in a short period of time in any armed conflict. It comprises the Triage, Ward, Surgical Theater, X-Ray, Medical Laboratory, Blood Bank, Pharmacy, Dental, Preventive Medicine Services and Medical Store (Figure 1 and 2). To ensure that the Forward Hospital is self-sustained and can be operated anytime and independently, it is provided with a Generator Set for electrical power supply, Field





*Fig 1: Layout of a Forward Hospital Elements available in one of the Medical Battalions. It consists of medical shelters which provide the Triage, Ward, Surgical Operation Theater, Pharmacy, X-Ray, Laboratory, Dental, Blood Bank, Preventive Medicine Services, Ambulances and other supportive elements.*

Kitchen, Staff Accommodations, Command Post and Security Post Centre. The Med Bn is able to provide up to a Level II Medical Support, which means providing surgical treatment facilities for emergencies and casualties during military operations.

- **The Casualty Evacuation Element** provides ground field ambulance services to evacuate the casualties from a combat-zone to the Forward Hospital and from the Forward Hospital to higher echelons of medical care, either military or civilian. The Evacuation Element consists of four small units called Casualty Evacuation Units (CEUs).



*Fig 2: A view of surgical and anesthetic facilities in an operation theater of a Forward Hospital.*

## EXPANSION OF ROLES AND FUNCTIONS

In the early 1990's, the Med Bn expanded its roles and functions by providing FHSS to military operations in Malaysia and many other countries such as Cambodia, Bosnia-Herzegovina, East Timor Leste, Southern Philippines and Western Sahara (UN peace-keeping missions) as well as in non-military missions like CAP, disaster and humanitarian support. It also provides medical coverage for national and international sports events and tournaments .

## United Nation(UN) Peace-Keeping Missions

The Med Bn has provided Army paramedics and field medical equipments and facilities in the Peace-



Keeping Missions under the UN banner. These include the UN Transitional Authority in Cambodia (UNTAC 1992-1993), UN Operations in Somalia II (UNOSOM II 1993-1995), UN Protection Force in Bosnia-Herzegovina (UNPROFOR 1993-1994 and MALCOM I-V 1995-1998), International Force in East Timor (Timor Leste) (INTERFET 1999-2000), the Southern Philippines and UN MINURSO in Western Sahara .



*Fig 3: A medical resuscitation is being carried out by Paramedics of the 3 Medical Battalion in the Triage and Emergency Room of a Forward Hospital Element. This incident occurred during Flood Humanitarian Mission in Pekan, Pahang (2007).*



*Fig 4: This Field Hospital was set up by using assets and medical personnel from the Medical Battalions of the RMDC. This picture was taken during the involvement of the Malaysian Armed Forces Medical Team (MASMED) during the Earthquake Disaster and Humanitarian Mission in Battgram, Pakistan (2005).*

### Civic Action Programmes (CAP)

The CAP involves providing services to the Orang Asli and other native people living in settlements at the fringes of developed areas of the country. Services are also provided during natural disaster periods, for example during the floods in Kluang, Johor (2006) and Pekan, Pahang (2007) (Figure 3).

### Disaster and Humanitarian Missions

The Med Bn had provided FHSS during disasters in the Asian regions in the form of the Humanitarian Mission in Chaman, Pakistan (2001), the Earthquake Disaster Relief of Battgram, Pakistan (2005)(Figure 4), the Tsunami Disaster Relief Mission in Aceh, Indonesia (2005) and the Earthquake Disaster Civic Action Program in Jogjakarta, Indonesia (2007) .

### Sport Events

Medical coverage by the Med Bn for local sports events in Malaysia (e.g. SUKMA) and official ceremonies (e.g. Independence Day) are common. As for international sport events, the KL International Marathon, Le Tour de Langkawi, World Formula 1 Petronas Malaysian Grand Prix, World Superbike Championship, Commonwealth Games 1998, 21st Asian Amateur Boxing Championship, SEA Games, as well as the more recent events such as Kuala Lumpur International TATTOO (2007), Sultan's Cup Terengganu Endurance Challenge (2007) 13 and Tioman Sultan Pahang International Eco-Challenge (2008) were among the major events covered by the Med Bn.

### FUTURE DIRECTION AND CHALLENGES

From the 1990's to the present, the function of the Med Bn has evolved to include not only military operations but also non-military missions, or operations other than war (OOTW), as mentioned previously. Based on its current functions, the Med Bn needs to be upgraded and maintained at its best in order to continue providing adequate and appropriate FHSS for all the missions, which may continue to increase in number and complexity.



There are several options which should be developed, upgraded and explored for the future of the Medical Battalion such as follows:

- **Acquisition of new assets for the Forward Hospital Element.** Acquisition of new assets is needed to ensure that the Forward Hospital is able to operate independently and efficiently. Medical shelters which are suitable, durable, easy to deploy and maintain should be acquired from time to time. The old medical tents or shelters which have been used should be changed to the latest version such as DRASH (Deployment Rapid Assembly Shelter) or the pneumatic types. These new types have been found to be more suitable for rapid deployment in military exercises and humanitarian missions. A variety of medical tents or shelters which can be used in any climatic conditions should also be acquired. The modular types or double layers tents types are alternative options for this kind of deployment. The acquisition of the support components of the Forward Hospital such as the Generator Set to supply power for lighting and Environmental Climate Unit (ECU) for cooling or heating inside shelters or tents, the field kitchen to provide food for inpatients and staff, as well as a comprehensive water system are among the items that must be given due importance. Old medical equipment should be replaced to ensure that emergency medical and surgical procedures can be performed well.
- **Improving Field Ambulance Services.** Field Ambulance services are an important component of the Forward Hospital for ground casualty evacuation with the use of field ambulances. At present the type of field ambulance used has a carrying capacity of four stretcher or six seated casualties. Acquisition of various versions of field ambulances like tracked or wheeled vehicles should be planned to support the different types of missions. Domestic ambulance is an alternative option to evacuate ground casualties, mainly for non-military usage.
- **Enhancing Knowledge, Training And Skill.** There are about 300 personnel in a Med Bn with 75 percent of them from the RMDC

and the rest being from other Corps such as the Royal Signals Corps, the Royal Army Engineers Corps, the Royal Electrical and Mechanical Engineers Corps and the General Service Corps. Enhancing knowledge through Continuous Medical Education (CME) in Emergency and Trauma Medicine, War Surgery and Battlefield Medicine should be continued, while fields such as Disaster Medicine, Travel Medicine and Wilderness Medicine should be explored. Basic and Advance Life Support as well as Advanced Trauma Life Support (ATLS) skills are vital for paramedics while training for non-medical personnel must be continued to ensure all the support equipments can be used efficiently when deployed.

- **Expanding the Role of Preventive Medicine.** The role of Preventive Medicine is very important in any field deployment of the Med Bn. Communicable diseases such as Dengue, Measles, Malaria, Leptospirosis, water-borne diseases (e.g. Cholera) and food-borne diseases (e.g. Typhoid) are still the common diseases which occur during any disaster. Public health physicians and paramedics must ensure preventive measures are taken before, during and after deployment. Health information and health intelligence in any disaster area must be disseminated and monitored thoroughly. Health promotion in the areas of personnel hygiene, regular hand washing, safe and hygienic use of water and food during deployment should be taught. Issues of environmental sanitation such as clean water resources and proper solid waste in the field need to be addressed with medical surveillance conducted continuously. Suitable field instruments such as fogging machines and water testing kits should be provided.

- **Occupational and Environmental Health Services.** There is a higher risk of exposure to hazardous factors among Med Bn personnel during military operations and missions. The dangers of exposed to physical factors like extreme climate conditions, noise, vibration and radiation, biological factors like infectious diseases and biological weapons, chemical factors like toxic industrial chemicals and chemical weapons, as well as ergonomic and occupational stress should be considered



before any deployment of personnel. Pre-planning in occupational and environmental health is vital to ensure all personnel are protected. Pre-deployment screening with immunization against diseases and post-deployment screening with medical fitness and psychological assessments must be done. Equipments for hazard assessments, including Nuclear, Radiological, Biological and Chemical (NRBC) capabilities, should become a long-term plan for the Med Bn. This step also includes cooperation and training with the NRBC team of Army Engineers Corps and governmental agencies such as HAZMAT team of the Fire and Rescue Department. Usage of Personnel Protective Equipment (PPE) and adherence to Universal Precautions during handling of clinical waste should be instituted.

- **Aero-Medical Evacuation Capabilities.** Ground Field Ambulances have been used to transport casualties since the early days of the Med Bn from the Combat Zone to the Forward Hospital and to the higher levels of echelons

and in Disaster and Humanitarian Missions. Aero-Medical Evacuation is another option which provides immediate and fast evacuation using either military and conventional helicopters or aeroplanes. Medical evacuation by air has been provided by the Army Air Wing or *Pasukan Udara Tentera Darat* (PUTD), the Royal Malaysian Air Force (RMAF) and the Royal Malaysian Navy (RMN). Training should be regularly conducted to ensure a high competence level in handling Aero-Medical Evacuation procedures. More Medical Officers and Paramedics should be sent for training in Aviation Medicine as well.

## CONCLUSION

As an integral part of the FHSS structure, the Med Bn has successfully performed its role and functions since its inception, and with the expansion of the role of the Malaysian Army, the Med Bn must also assume its new position as a global player in the years to come.

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Lt Kol Dr Rozali Ahmad is a staff officer (Medical Branch) in the Health Services Division of the Malaysian Armed Forces (MAF). He obtained his MBBS (Bachelor of Medicine and Surgery) from the University of Malaya in early 1992. After serving the Ministry of Health for almost two years, Dr Rozali joined the Malaysian Armed Forces in 1993. He served on board the KD Sri Indera Sakti as a Fleet Medical Officer in 1993 and later became a Diving Medical Officer at the Institute of Underwater and Hyperbaric Medicine till 1997. From year 1997 till 2003, Dr Rozali held several posts as the medical-officer in charge of 805 RSAT Taiping, 804 RSAT Sg Ara and 711 PPAT Kementah. He later pursued his Master of Community Medicine (Occupational Health) degree at Universiti Kebangsaan Malaysia (UKM) (2003 -2007). After completing his Masters programme, Dr Rozali was promoted to the post of the Commanding Officer of the Third Medical Battalion in Kluang Camp, before being transferred to his current post. He has published several articles mainly in diving medicine and public health, in both local and international journals.





By Brig Jen Dato' Mohd Zaki bin Wan Mahmood (Bersara)

### SYNOPSIS

Large business organisations have strategic information systems to support their bosses to manage their businesses. Advanced nations too have similar systems to provide tools for the head of governments to function efficiently. This paper proposes to the Malaysian government to develop a national strategic information system, a combination of a strategic information system and a command and control system. It would support the Prime Minister and his cabinet ministers as well as top government officials to function efficiently and effectively. Such a system is highly attractive to cyber attacks. Its best protection is for it to be developed by chosen local developers and protected by adequate security measures. System applications, security measures and communications have to be regularly enhanced with the latest technology and user needs for the system to be relevant and remain secure.

### INTRODUCTION

Information is essential for an organization to achieve its objectives. An effective organization will inevitably have the support of an efficient information and decision making system. Leaders of mega organizations are supported by real time strategic information systems to keep themselves abreast instantly with situationa and corporate changes in organizational capacity and ability. These changes will affect the decision making process and influence final decisions. It is known that enterprises have strategic information systems that are aligned with their business strategies and structures. Such systems, accessible at all times, permit ability to respond quickly to environmental and corporate changes, thus provide enterprises advantages over competitors. Similar information systems may well serve national leaders in making decisions and performing their roles and functions effectively towards achieving national objectives. The advantages gained may not be over competitors, but efficiency towards serving the needs of the people and towards nation building and national defence and security.

Leaders of nations should have such information systems to ensure that development, national security, as well as the safety and well being of the people are appropriately and efficiently managed. Most advanced nations and successful developing nations would already have such an information system. The system would be managed by the department of the president or the prime minister to serve the head of the nation as well as his cabinet ministers. Our nation, likewise, would benefit to have a single "National Strategic Information System" (NSIS) to support the Prime Minister, his cabinet members and their staff, in the performance of their functions and responsibilities. An information system with an instantaneous data updating capability will keep our leaders informed immediately of the latest situations. Important information can be made accessible to them anywhere anytime. Their decisions and actions will be well guided towards perfection by latest and accurate information available from the NSIS. The Prime Minister and his cabinet members will constantly and immediately be informed of decisions and actions taken by the government machinery, as well as whether national objectives are achievable.



The NSIS is expected to be operated via command and control by staff at a national operation centre (NOC) to be established at the Prime Minister's Department. The NOC is responsible to ensure data owners are efficiently updating their data and users are given access rights to information relevant to their needs. The NOC will regularly evaluate and enhance system applications and security features as well as increase or decrease system users. The system must be protected by the best security features to guard it from intrusion and interference to its operations, and from being stolen or manipulated. The NOC is equipped with intrusion detection and intrusion warning devices and supported by staff that have the capability to counter any information warfare threat. Such a sensitive system will have to be developed in-country by reliable and trustworthy hand-picked local industry, which will also conduct maintenance and regular upgrading to ensure the system will remain relevant and protected. This paper will propose the possibility of establishment for the NSIS to be used by the Malaysian Government. The paper will also discuss some relevant factors for consideration during its development.

## SYSTEM DESIGN

### System Function

The NSIS for the Malaysian Government must have the ability to perform a dual function, as an Executive Information System (EIS) as well as an ability to do Command and Control (C2) over national strategic resources and to function during emergency, crisis and natural disaster.

- **EIS.** It is an information system that will support decision making process of the Prime Minister, cabinet ministers and senior government staff members. It has the most up-to-date data and information to keep its users well informed of events, incidents, happenings, successes, failures and any other information of interest to the nation and for the well being of the people. It is equipped with alarm devices to warn of non-performing programmes and projects. Reminders are triggered as warnings in multimedia report formats to organisations which are overdue for submission of plans, reports or any form of documents.

- **Command and Control.** C2 is a system that disseminates decisions, instructions and orders subordinate organisations and has the ability to oversee their execution of decisions, orders and instructions. Submission of reports and feedbacks to orders issuing authority are on line in real time, accompanied by pictures, charts and video clips as appropriate.

### Databases

The database requirement will have to be defined by the Prime Minister's Department, with the help of the local industry that develops the system. Some obvious databases may be those which reflect various ministries' performances. The others are on security threats, developments projects, economy, finance, defence, security, crime, health, military deployment, resource control, reserve stock, reports, immigrants, intelligence and executive decisions. The identification and selection of relevant database titles may take some working experience. Initial lists will be modified as experiences are gained by users.

### Software

Some specially developed software for the functions of EIS and C2 will be used in the system. However, there will be some commercially-off-the-shelf software functions which are relevant for the system. Some of the software functions that will be included in the system are information management, report submission, messaging, briefing, office automation, intelligence compilation, reserve stock management, executive decision making tools, national security and defence information displays and map and satellite image utilisation. Developing and integrating software into the system will require to be done by a trusted firm from the local industry to ensure the system is well protected from any unwanted embedded chip, as well as to safeguard information on strengths and weaknesses of the system from being known by potential information warfare attackers.

### Communications

The system will use mainly lines for its communications. However radios, GSM, Tetra and



satellites will be applicable for the mobile stations. Use of telecommunication lines will provide better security from communication interceptions. Radio and satellite communications are exposed to manipulations and interferences from enemy and mischievousness. However, network security devices will detect, warn and provide defences against cyber intruders.

### Web-Based Concept

The NSIS will be a web-based and knowledge-based EIS, which will provide the Prime Minister and his staff as well as the cabinet ministers and their staff with highly summarized information in an easily understood presentation format, gathered from all information providers. The system will be easy to access by those with authorization for updating of information and for use of information. It will be heavily protected from being accessed by unauthorised personnel.

### Information

The information provided will be concise and represent the first level of information, to be used as the basis for decision-making. The system is also designed to present the successive second level information detail, made available in the system by the respective providers. The information

will be of the latest and most up-to-date as per the requirement. Information owners will receive warning for any update action which is over due.

### Information Sharing

Appropriate information is shared among all users with access rights as authorised by the system manager at the Prime Minister's NOC. All information is web-based with highly flexible formats to suit the ever changing information representation at all levels. The system will allow all office automation functions.

## SYSTEM CONFIGURATION

### Concept

The configuration concept of the NSIS will be following the cabinet chain of command. The information flow of the EIS as well as that of the C2 will be standardised as currently being practised by the government. The NSIS configuration will be as described below.

### System Coverage

System coverage and data flow sequence will be as shown below (Figure 1).

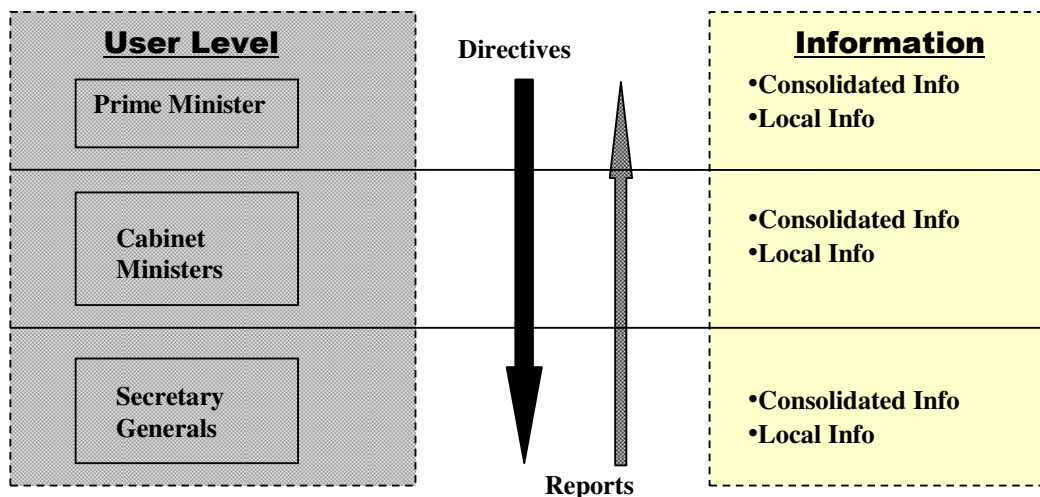


Figure 1. System Coverage and Data Flow



The NSIS coverage will include all divisions in the Prime Minister's Department and all divisions of the other ministries and their relevant departments and staff officers. The system is expected to be used by the Prime Minister, Deputy Prime Minister, ministers, deputy ministers, Chief Secretary to the Government, secretary generals, and deputy secretary generals, as well as all heads and deputies of critical government agencies. As far as the information providers are concerned, the Prime Minister's Department and the relevant ministries and agencies will provide the information they are responsible for. These ministries and departments are currently having their own information systems. The NSIS will be connected to some of these existing information systems, if so wished by the Prime Minister's office. Some of the information providers are as shown in figure 2.

### Organizational Function

The NSIS has to be designed to meet the current hierarchy of information flow being practised by the government. Information will be provided

by all departments according to the normal chain of information flow. This approach is to maintain the continuity of what is being practised and to maximize knowledge capital within the users. The function of each of the organisations to provide the Prime Minister with information remains, but it is now done on line in multimedia format, to achieve efficiency, accuracy, punctuality and clarity.

### System Users

- **User Groups.** User groups are the intended and authorised target users of the NSIS. They are given access rights only to retrieve information within the permissible boundary, confined to its own predefined areas. Access rights functionality is configurable by the system administrator at the NOC.
- **Webmasters.** The webmasters will maintain the NSIS information. They are given access rights so they can update their own information. Each department within the user group will be allocated at least one webmaster.

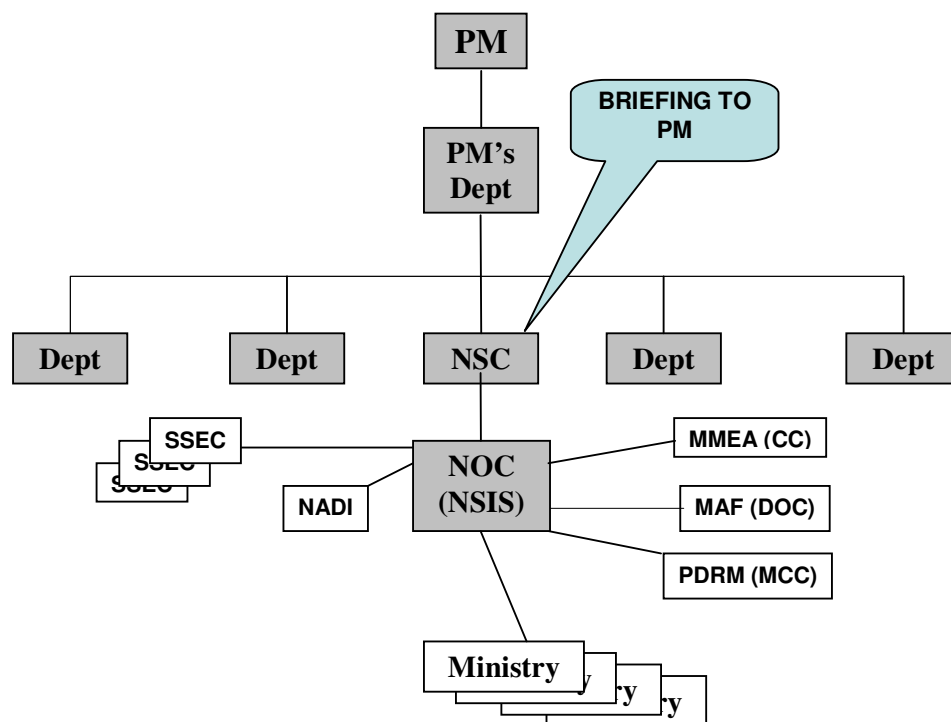


Figure 2. Information Providers

- **System Administrator (SA).** The SA at the NOC of the Prime Minister's Department will be responsible for the operation of the NSIS. The tasks that must be carried out by the SA are as follows:

- ▶ Maintaining overall system health and providing access rights to users upon authorization.
- ▶ Issuance of smart cards or other access control devices.
- ▶ Ensure intruder detection system is functioning.

- **Personal Assistants (PA).** The main responsibility of all PAs to the senior officers will be to update the electronic diary of their own superiors, and with authorizations, those of other superiors as well.

### Access Rights

The Chief Secretary to the Government at the Prime Minister's office will hold the authority to determine access rights. However, implementation is by the NOC staff members. The access rights facility is designed to be flexible and easy to use.

A webmaster, if so authorised, or the system administrator is able to change or modify the user access rights to any level. The access rights is not a rigid restriction, but a flexible control of accessibility to information.

### SYSTEM CONCEPT

The NSIS network will probably be as shown in the diagram in Figure 3. Facilities and users at the Prime Minister's Department are as shown on the left side. There will be individual user terminals or work stations that serve the Prime Minister and senior officers at the Prime Minister's office. The National Operations Centre will have facilities to access the NSIS and perform briefing to the Prime Minister and his cabinet. There will be a server farm at the NOC to accommodate various servers required by the system.

Connections to other users and information providers are shown on the right side. These are the ministries, agencies and departments that use and provide information, and act on Prime Minister's instructions and orders. In most cases line connections are provided to these remote users and information providers. In mobile applications suitable radios and satellite connections will be provided. The Prime Minister, cabinet ministers and

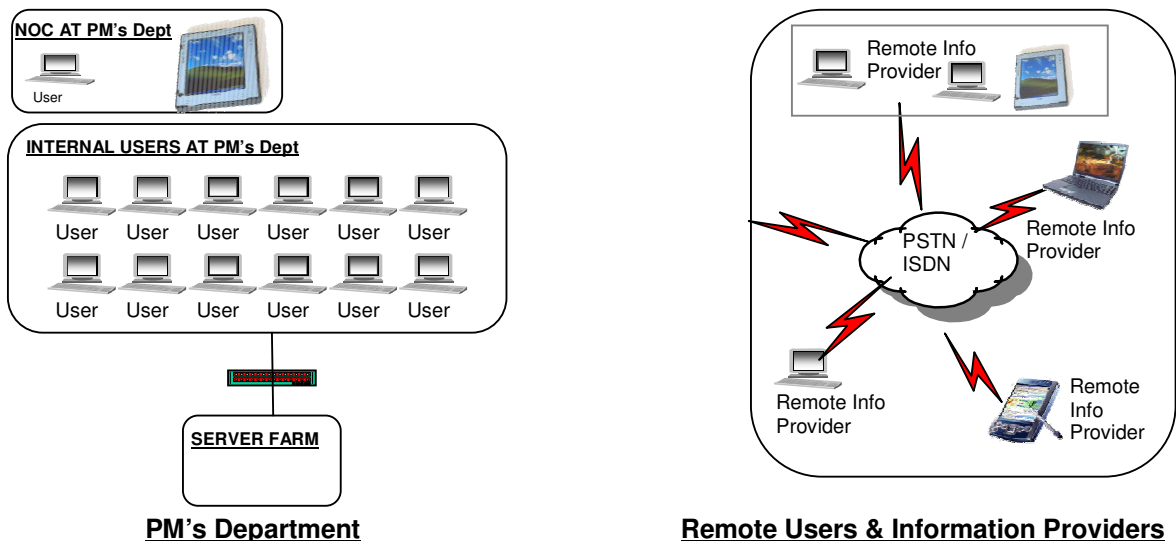


Figure 3. NSIS Conceptual Network Diagram



others as decided, will be with mobile work stations to enable them to access the system while on the move.

## SECURITY

### General

The NSIS will have the highest dependability and reliability in terms of system operation up-time and security of information in and within the system. Integrity, confidentiality, reliability and availability of the system must be assured. Data and information in the system must be protected. The Prime Minister, ministers and all other users must be assured of the protection and availability of data, especially during crisis. Experiences of the government in managing information systems and protecting them against threats are too well documented to be ignored during NSIS development.

### Threats

Likely cyber threats to the NSIS will be in the forms as follows:

- **Targets.** Attackers will be targeting mainly for information and data in databases and during transmission. Occasionally the network may be targeted by cyber attacks.
- **Types.** Types of threats most likely to be used by attacking agents will be to steal, destroy and falsify information. The type of attack on the network will be to totally or partially disrupt the network operational capability.
- **Originators.** Attackers are most likely from foreign government agents who are interested to know what the government is doing. In some cases enthusiast cyber hackers may try to penetrate the NSIS for sheer fun.
- **Own Staff.** Foreign agents may use our own staff to assist them in the break-ins. In other cases own staff could expose the system to cyber attacks due to their carelessness.

## Security Considerations

There are some basic security considerations, as follows, which are required by the NSIS:

- **Physical.** The most important is the security of premises where computer terminals are being kept. Equipment has to be secured to avoid intrusion through the official NSIS terminal, using official codes and passwords. Physical security of information and data is through the use of proxy & duplicate servers. The system is physically guarded by an intrusion detection system.
- **Access.** Access to the system is regulated and controlled. Users are identified and given access rights. Authorised users will use cards or biometric devices to access the system through terminals. Firewalls will be used to arrest any illegal entry.
- **Secure Databases.** Data kept in the system databases is encrypted.
- **Secure Transmission.** Secure communications will be provided by the interconnecting of terminals in the system. Messages for transmission will be encrypted.

## Information Warfare

Information warfare (IW) is real and it is happening every day, initiated by foreign governments and their agents. There are also cases where enthusiasts and students are involved in cyber break-ins. The NSIS will obviously be a priority target for attacks by foreign governments. Reports on IW attacks have appeared regularly in the news. Some of those latest major incidents are as follows, as recorded in "The Economist" May 26<sup>th</sup> - June 1<sup>st</sup> 2007 issue<sup>1</sup>.

<sup>1</sup> *The Economist*, May 26<sup>th</sup> - June 1<sup>st</sup> 2007 issue, Internet History, Greatest Hits, Milestone in the history of information warfare p 62.

- **1986-The Cuckoo's Egg:** A Soviet hacker in Hanover, Germany, caught breaking into computer at America's Lawrence Berkeley Labs to steal secrets on missile defence.
- **1998-99 Moonlight Maze:** A series of computer break-ins at the Pentagon, NASA and elsewhere traced to a computer in Russia. Many files of classified information were compromised.
- **1999-Kosovo:** Chinese hackers retaliated to the American aircraft bombing of the Chinese embassy in Belgrade by vandalising American government websites. The White House website was closed for three days.
- **2000-01- Middle East:** Israeli and Arab hackers vandalised and crashed each others' websites for a 4-month period. Attacks were also made against firms supplying internet connections.
- **2001-America v China:** After the collision of an American spy plane and a Chinese fighter, hackers from both countries defaced or crashed the other's public and private sector websites. The White House and New York Times sites were briefly brought down.
- **2006-Sneaky Word Doc:** An American State Department employee opened an e-mail file that secretly opened a back door in the computer system, allowing the theft of data. As the problem escalated, the agency cut the internet access.
- **2007-Netwarcom:** Officials at the US Naval Network Warfare Command accused China of sponsoring hundreds of suspicious hacking incidents against military and private-sector systems to steal technology, obtain intelligence, probe defences and install "sleeper" software.

The local newspaper, "The Star" on Wednesday 5 Sep 2007, reported espionage on each other's system between the US and China. Pentagon computers were hacked. From late 2007 to now there have been series of news reports of cyber attacks by China and Russia. A British cabinet report warns that cyber attacks from China and

Russia threaten to bring Britain to a grinding halt. It confirms that a series of electronic attacks on official and private sector databases have been carried out and are continuing<sup>2</sup>.

There are other reports found in the Internet, accusing China of cyber attacks that took place in America and Europe. More reports can be expected in future as more incidents are likely to take place. There has been an increase in information networks, thus creating more targets. Cyber attackers too are getting more sophisticated and energetic in creating their weapons. Successes and benefits of past attacks attract more enthusiasts and intelligence professional into the cyber attack business.

As for our case here, there will be various organisations and individuals who have reasons to attack the NSIS. These organisations and individuals, state sponsored or otherwise, are equipped with effective appropriate weapons. Threats to the NSIS will be very real. If they do happen their effects will be catastrophic. Without adequate and relevant defences the NSIS will suffer.

### Security Objective and Scope

Security requirements for the NSIS are to ensure that the system is protected from external and internal threats of IW or information operations (IO). The NSIS will be a high priority target for IO or IW attacks by friends and foes. The system is expected to have data of national interests and the people's well being, as well as sensitive strategic information and internal and external intelligence. National policies, plans and directives may be kept in the system. The system is also the main communication link from the Prime Minister to his Deputy, cabinet ministers, the Chief Secretary to the Government, the Chief of Defence Forces, the Inspector General of Police and other heads of important government agencies and departments.

The information of the existence of the NSIS, its specification, coverage, design, strength and weaknesses has to be protected. Its release to any third party is only by the Prime Minister's Department. Having information on its specification,

<sup>2</sup> **British Cabinet Report**, published at a web side of the Internet, written by James Chapman, last updated on 9<sup>th</sup> August 2008.



coverage and design will make attackers' work that much easier. Facts on security measures of the system are sought after by potential attackers.

The system will have protection over information kept in the system and information on transmission. The system network will have its communication protected from being interrupted by outsiders.

## Encryption

Information in databases and on transmission has to be protected by encryption. Under both instances the information will still require protection from being stolen, tempered with or destroyed. Encryption is the protection of the information text from being read by unauthorised personnel. Authorised reader of the encrypted text will have the authorised key to decrypt the cipher text. Encryption facilities will be nation's own or those evaluated to be very reliable and customised to meet nation's needs. An encryption device developed by the government, government agencies or by a reliable local industry, although with a weak encryption power, is still better than a foreign product. Encryption can be done at multiple levels or have encryption devices changed as frequently and as practically possible. Initially encryption may have low power, but with experience subsequent encryption strength will be increased. Furthermore, nation's indigenous security system will ensure it is free from any illegal embedded software such as covert channel, logic bomb, time bomb, trap door, back door and Trojan Horse.

We must remember that a foreign product sold to us is also available for purchase by others. For an extra payment our keys can be made available to a third party. Policies of governments of encryption manufacturers may cause us to worry of reliability of our imported encryption devices. Governments of some nations are friendlier to our neighbours than to us, may result in foreign governments' approvals to release our encryption keys to our neighbours. There is an allegation in the Internet<sup>3</sup> against a foreign manufacturer that has been cooperated with

the National Security Agency of the United States of America. Of course these foreign governments and manufacturers will not admit to our government, nor are we aware or have the ability to verify their misdeeds. However, the mentioned course of action by the NSA is most likely. It has the money to pay, the power to influence and the strength to do arm twisting. This approach is the most convenient way of doing code breaking activity.

## Computer Connection Security

All remote sites shall be installed with gateways to create secure tunnels from remote sites to Prime Minister's Department. Tunnelling and encryption services utilise protocol security, will encrypt packets on leaving a gateway. Packets are decrypt edat the Prime Minister's gateway. The gateways are preferably hardware based with the ability to be configured remotely from the NOC of the Prime Minister's Department. Firewall services will also be installed as an additional protective measure. A mobile security devise, also hardware based, shall be implemented in notebooks of mobile users, to ensure transmission from notebooks to the NSIS is secure.

Security of remote machines is further enhanced by encrypting the whole hard disk. This security features will ensure that data kept will be encrypted and will be unreadable if the machines are stolen. Security facilities to safeguard the computer application, as for now, will include those listed as follows.:

- Access control right to authorised users.
- Issue smart card, USB tokens or biometrics to all authorised users.
- Firewalls.
- Proxy server to connect to other subsystems.
- Duplicate server for information filtering.
- File encryption.
- Transmission data encryption.
- Intruder detection system.

<sup>3</sup> *The NSA-Crypto AG Sting*. For years US eavesdroppers could read encrypted messages without the least difficulty. An Internet article by Ludwig De Braeckelee, published December 29<sup>th</sup> 2007.

Additional security facilities will be included in future, as and when the technology permits and these are available in the market.

### Communications Network

Protection of information during transmission of messages over communications links will be done in two ways. The first measure is to ensure the communications links are secure and safe from tampering. Lines offer better communication security than transmission over radio links. All radio transmissions are exposed to intercepts by electronic warfare activities of neighbours and major powers. Satellite links like-wise can easily be intercepted by operating companies or foreign intelligence agencies. The next security measure is to encrypt all data before transmission.

### Personnel

Security of personnel involved in the NSIS project, during planning, designing and development, as well as those who operate and maintain the system, will be of the foremost concern to the system owner. It has been found that most of cyber security breaches, intrusions and attacks were originated or assisted by insiders, knowingly or unknowingly. Insertion of embedded chips into sensitive and classified information systems, such as command and control systems and strategic information systems, is easily done during system development and maintenance. Any system developed by foreigners has no guarantee of security or void of ill-intent. On the other hand all staff members of the local company involved in any system planning, designing, development

and maintenance will have to go through the process of security vetting and have to obtain security clearance from the government security department before they are employed on their jobs. Government employees who are going to be working with the system will have to be security vetted, closely supervised and monitored. In many cases of security breach of information system, local staff or local vendors are involved. Breaches of security caused by own staff and vendors are difficult to detect, due to their disguises and cover-ups of their trails. Whereas intrusions from outside may be detected and arrested by intruder detection devices.

## NSIS SYSTEM ARCHITECTURE

### Software Design

The NSIS application software will be the combination of the Customised Application Software and the 3<sup>rd</sup> Party Commercial-of-the-Shelf software (COTS), as reflected in figure 4.

- Customised Software.** The NSIS customised applications software is purposely built software for the NSIS to meet the day-to-day operational requirements of the Prime Minister and his staff. The general system architecture will reflect functions and the information flow chain. The customised application software will be those specially required for specific applications and functions for the efficiency of the system to support the Prime Minister and other users. This will include procedures and formats for calling and submitting of information, reports and data. Some suitable commercially off-the-shelf software will be customised for this purpose. Others will be developed locally. Development,

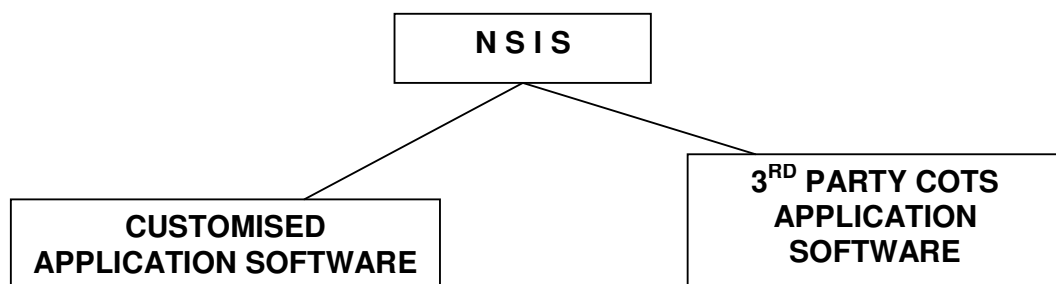


Figure 4. NSIS Conceptual Software Design



customisation and integration will be done by the selected and trusted local company, which employs dependable, trustworthy and security cleared individuals.

- **Commercial Software.** The NSIS will also use some relevant commercial software. Maximum use will be of available standard commercially-off-the-shelf (COTS) third party software. With careful selection of the available software for standard applications, we can get enormous advantages of using the COTS. Among others, these advantages are fast to implement, non-proprietary, supportability, feature rich, minimum system training, proven to work in environment etc. The third party application software, apart from the operating systems includes office automation components for word processing and presentation, e-mail and office productivity applications and an database management system. Most of the office automation software is applicable and will be used in the NSIS. Other applications are print management, network management, miscellaneous security components for enhanced system security, system network monitor and many more.

### Information Storage

- **Data Management.** Relevant data from existing and future systems at various ministries

and departments will be sent to the Prime Minister's Department through the NSIS. Data will be analysed, formatted, stored and used for planning and briefing the Prime Minister. The system will be of a very high security classification, commensurate with security classification of information in the system. Directives and requests for information will flow from top to bottom to all information providers.

- **Information Providers.** Ministries, departments and agencies provided with terminals from the NSIS will be responsible to supply information as determined by the Prime Minister's Department. Communication will be in the predetermined and formatted messages or in free and unformatted documents, supported by video clips, photographs, graphs and charts as required. Information may come on-line or off-line in soft copies or hard copies. The in-coming off-line information will have to be manually entered into the system.

- **System Development.** The system development will be done, as shown below in figure 5, by developing interfaces, incorporating all those previously mentioned software, into the existing information system at the Prime Minister's Department. Communication connections and terminals will be provided to those identified as information providers.

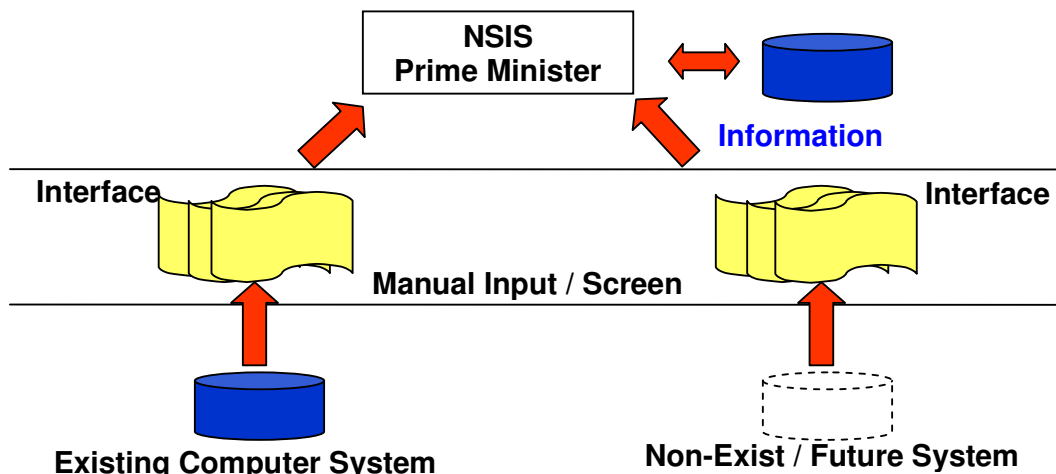


Figure 5. NSIS Information Storage

## Summary of features

- **Information Input And Display.** Information input into or output from the system databases can either be in display forms or as document and information kept as record in databases. Examples of data inputs are as follows:

- ▶ Security threats to Malaysia (internal & external).
- ▶ Government administrative information such as manpower, staff list, etc.
- ▶ Logistics information.
- ▶ National security situation.
- ▶ Regional security situation.
- ▶ Development programmes.
- ▶ Strategic and vital resources and their protection.
- ▶ Economic performance and imports/exports.
- ▶ Financial and monetary management.
- ▶ MAF deployment.
- ▶ Border and across border situation.
- ▶ Maritime situation.
- ▶ Activities in constituencies.
- ▶ National reserve and stock piling.
- ▶ Crime situation and information.
- ▶ Diseases, health and medical information.
- ▶ National demography.
- ▶ Natural disaster.
- ▶ Employment and unemployment statistics of local and foreigners.

- **Directives and Report Functions.** Directives and reports are done through dedicated forms or the integrated office automation tool of the COTS software. Functions provided are:

- ▶ Report creation / drafting.
- ▶ Approval.
- ▶ Send and receive.
- ▶ Reports and returns can also be done through a secure e-mail system.

- **Office Automation.** Office automation functions such as e-mail, desktop video conferencing, word processing, presentation and briefing system, spreadsheets, web browser, media player for audio and video playback, and other accessories are provided by integrating standard COTS software, office automation and Internet tools. The office automation tools allow creation and opening of standard format documents, audio and video files.

## CONCLUSION

A NSIS is similar to as well as a combination of a military command and control system and a minister's strategic information system. It is a high value system that provides the Prime Minister, cabinet ministers and senior government staff with current situational awareness of the nation, state of readiness and efficiency of the government machinery, management and control of national resources, and national security situations and threats. Such a system is very useful for the efficient running of the government. It is an essential tool to the government. At the same time it is a priority target for cyber attacks. It will have to be designed and developed by a reliable and trustworthy company and must be safeguarded from any possible illegal entry, cyber attack, mishap or sabotage.

A local company with expertise and fully indigenous manning is well suited for the job. The required expertise includes the implementation of



indigenous technology adaptations in turnkey project implementation of system design, development, testing, commissioning, support and maintenance services. A suitable company is one that has carried out several projects involving the government and semi-government, including technology consultancy, project management services and turnkey projects to implement specialised systems. One that has capabilities and experience in developing, integrating, installing and maintaining sensitive, fully integrated and secured indigenous systems, in an environment comprising software, networking and communications.

NSIS is a single strategic information system for the Prime Minister and his staff, connecting to all the cabinet ministers and heads of important departments and agencies. The Prime Minister's Department controls it. It is an executive information system designed to support the needs of information management by the Prime Minister Department and its staff and for keeping the Prime Minister's informed of the current situation on matters of national security and the well being of the people, as well as on performance of his cabinet ministers and government machineries. The system will facilitate

command, control and intelligence functions for the Prime Minister Department.

The system will have on line all the relevant databases with information of interest. Its information input will come from all the ministries, agencies and departments, locally and overseas. The system provides facilities for instructions, orders and requests for reports and information from the office of the Prime Minister to the ministries, agencies and departments for execution and compliance. Returns, reports, briefs and documents to be accompanied with video clips, maps, graphs and others will be dispatched from them to the Prime Minister.

The security facilities of the NSIS are to ensure that the system is protected from external and internal cyber threats of information stealing, destruction and manipulation. The system will be indigenous to ensure its design is confidential. Access to the system will be strictly controlled and monitored to identify and deny illegal entry attempts. Files in databases and information on transmission will be encrypted. The system and its security measures will be enhanced regularly for it remain relevant and secure.

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Brig Jen Dato' Zaki's last assignment was at the Malaysian Armed Forces Headquarters as the Assistant Chief of Staff, Communications and Electronics. Prior to that he was the head of the Electronic Warfare Branch at the Defence Intelligence Staff Division. In those two positions he was responsible for the development, procurement, concepts, doctrines, operations, procedures, training and management of communications, electronics, Electronic Warfare (EW) and information technology support facilities. He has sufficient qualifications and experience in communications and electronics, EW, defence C4I and NCW/NCO systems. In the field of military information systems in operations and staff functions he has more than 10 years of experience. In the present company he is still involved in information systems.





By Kapt (Dr) Rauhah binti Mohamad Salleh

### SYNOPSIS

This essay discusses and summarizes the characteristics and qualities of a true leader. Even though it is believed that everyone is born a leader, one needs to have certain qualities to qualify as a true leader. The author also elaborates these qualities further by using examples of many great leaders from different eras from the ancient Greek time till the 20th century.

One of the qualities mentioned in this essay is that a true leader should be visionary during his or her command. The satisfaction of being a leader will only come if he or she can reach beyond the existing comfort zone. An approach has also been made to articulate some of the characteristics in the context of Malaysia's military perspective, owing to the fact that many of today's achievements in the military force were accomplished through the inspiration of the force's visionary leaders.

It is hoped that readers will find this essay a good reference in order to benchmark them whether or not they have attained the status of a true leader. The author also wishes that with the examples of great leaders given, readers will find motivation to lead.

### INTRODUCTION

There have been considerable debates on the question whether leaders are born or made. Certain people lament at themselves on how unlucky they are for not being born a leader. However, do we realize that every day in our lives, we live to lead people? For example, we lead our family, we lead our classroom, we lead our troops, we lead our school choir, we lead the brass band, we lead the college hockey team, we lead our siblings, we lead our wife and we lead our children and so on.

So whether we like it or not, we need to accept the fact that we live to lead. This is even more appropriate when the military perspective is concerned. In the army, giving an excuse that 'I am not a leader' or 'I cannot lead this team' is simply unacceptable. The truth is – we are leaders. The only thing that differentiates each and every one of

us is our own capability to lead or in other words, whether we are true leaders or not.

### FIGHTING FOR A CAUSE

So what makes a leader a true leader? Firstly, a true leader believes he is meant to be a leader. He knows he is not at his place by luck or accident but rather because his leadership is sought after. He is there for a purpose. His team looks up to him and needs him. A true leader too, is motivated by the drive to lead his team in achieving the common goals and not by personal gains or interests. He is there to lead his team by fighting for a cause.

Take for example the tragedy that befell Bukit Kepong - the Bukit Kepong Battle will be remembered as a historic event where a troop of national heroes fought the advancing communists

tooth and nail until the final hour. Under heavy siege and a rain of bullets, they fell on the ground, one after another. Still, they refused to surrender.



*Bukit Kepong Police Station*

### NO GIVING UP

Some of us might want to know why they did not surrender, although they knew that with a large number of 200-men strong enemy with superior weaponry, the chance of winning was slim. It seemed like the only alternative was to surrender. But the leader of the troop, Sergeant Jamil bin Mohd Shah believed otherwise. He knew they must not allow the communists to take control of the police station and make it their stronghold, even if it meant they had to do it without any reinforcement. He knew he must lead the team to defend their position. He spearheaded a charge to defend the station.



*Sergeant Jamil Mohd Shah*

Under Sergeant Jamil's command and leadership, the troop fought for more than 5 hours. Twenty five people lost their lives to the communists including Sergeant Jamil. It is a tragedy to remember until today. Even though our heroes did not win the battle, but they won the war. The enemy's intention to take control of the station did not materialize as the whole place was burnt down. Instead, the communists retreated. Sergeant Jamil and his comrades had died for a cause.

### A TRUE LEADER EARNS RESPECT

A true leader does not demand for respect but earns it. He neither commands for it nor buys it. In other words, he does not need to try so hard to get it. The respect comes naturally as his capability as a leader flourishes progressively. One natural element that will turn a person as a true leader is his or her competency in the roles or job he or she is assigned to. He knows what he needs to do and how he needs to do it. He knows when to delegate and leverage tasks. He does not have to exert too much force unnecessarily but his competency and respect from other peers will lead him to accomplish his mission and task.

A true leader is not only competent but also compassionate about his duty. He fulfils his duty and obligation as if he lives in a transparent globe and that everyone will monitor each and every single deed he has done. Yet, he is not asking for recognition.

With compassion, comes responsibility and influence. A true leader goes a great length to ensure his team shoulders similar responsibility as if their lives depend on it. This is an example of a leader who leads by example. In many ways, a true leader inspires those around him with his ability to execute work and build a competent team. Outstanding collective results and achievements can only be achieved through a collective effort. And this is made possible with the presence of a competent team. Such quality will eventually foster confidence in his team members and draw inspiration from others.

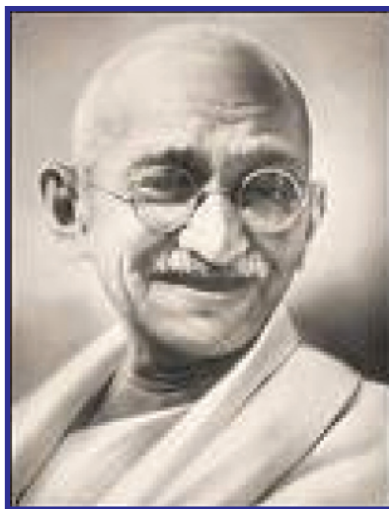


## LEADING BY EXAMPLE

Alexander the Great was not only a great conqueror, but he was also a great leader and a respectable king. He is known as one of the most successful military commanders in the history of mankind, and was also undefeated in battle. However, we must understand that Alexander did not conquer the ancient Greeks on his own. He did it by inspiring his army and people in believing that they were the most civilized people in the world, and that uniting the ancient world was their responsibility. Alexander also built strong battalions of army who were ready to serve, accomplish and execute his leadership charge.

For true leaders, excellence and accomplishment is a philosophy that they hold on to. They also strive for the best, and delivering responsibility to perfection is the ultimate goal.

A true leader never gives up no matter how high the sky seems to be and no matter how thick the wall they need to bring down. He or she leads his or her people to hold on to their belief. One of the greatest leaders of all time, Mahatma Gandhi believed that his country India is meant to be a free country rather than a colonized country. His country must be freed from the British colonial rule and occupation. With the belief, Gandhi gave up his flourishing career as a lawyer in South Africa and returned to India to lead a movement that we know as one of the greatest revolutions in history.

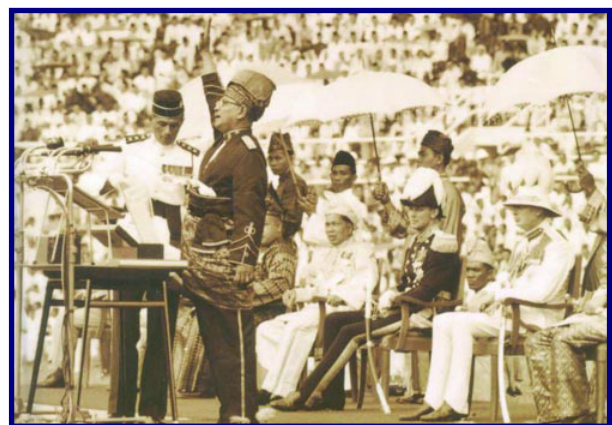


*Mahatma Gandhi*

Upon his return, Gandhi led a nationwide campaign for the alleviation of poverty, liberation of women and brotherhood among people of different religions. He led the poor farmers and laborers to protest against the oppressive tax system and discrimination. At the peak of his leadership, he famously led his nation to disobey the British rule which disallowed India's countrymen from producing their salt on their own. Throughout his effort to free India, he was imprisoned countless of times and was eventually assassinated during one of his routine night walks.

No one could have predicted the effect of Gandhi's revolution. He paid the price of the revolution he initiated with his own life. But his death was not in vain. His death freed his country. Gandhi's leadership reformation inspired many other leaders and people throughout the world. One of them was someone who eventually made his name in the Malaysian history book as the first Prime Minister of Malaysia - Tunku Abdul Rahman.

Like Gandhi, Tunku believed that after years of occupation, the time had come for Malaya to be freed from British rule. This belief had driven him and a delegation to board an airplane to London in 1954 to embark on a struggle to create an independent Malaya. The first round of negotiation was fruitful but it was not enough to convince the British to allow Malaya to declare independence. Nonetheless, Tunku and other leaders were not deterred and continued to strive for the independence of the country. The rest, as



*Tunku Abdul Rahman proudly declared the Independence of Malaya by shouting out "Merdeka" at Merdeka Stadium on 31 August 1957*

we all know, is history. The belief of our past leaders has allowed us to mark and celebrate Malaysia's 50 years of independence in 2007.

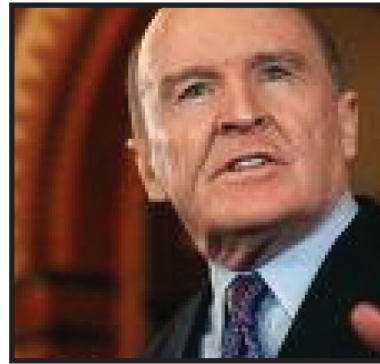
## EMOTIONAL INTELLIGENCE

Furthermore, a true leader is emotionally intelligent. Technically, emotional intelligence is the measure of psychological ability to assess, perceive and manage the emotions of other people. In layman terms, emotional intelligence is a capability of someone to understand and lead people by understanding their emotions. Emotion is a delicate human element and in a lot of ways, plays an integral part in virtually everyone's daily life decisions and reactions. As such, particular care and weight must be attributed towards handling people's emotion in order to promote a healthy leadership.

Studies have shown that emotional intelligence affects a leader's ability to be an effective leader. A true leader knows how and when to react according to someone's emotional characteristics. At times, conflicts arise during one's leadership tenure but understanding the nature of someone's emotion allows the leader to choose, retain and handle his or her subordinates. As simple as it sounds, a leader with emotional intelligence is someone who treats a human like a human. Leaders who do not develop their emotional intelligence will face a difficulty in building good relationships with peers, subordinates, superiors and others.

## BEYOND THE COMFORT ZONE

The most revealing characteristic of a true leader is being visionary. A visionary leader is not contented in living with prevailing comfort. We always hear people saying that once a new captain is onboard a ship, his immediate role is to steady the ship. What if the ship is already steady? To illustrate an example, consider an example of a company or a country being run in a peaceful manner and everything else including the economy, the society and politics running smoothly. Should the new leader settle with a mission to 'keep running the country in peace and everything else running smoothly?' For a true leader, the answer is



*Jack Welch*

no. He needs to go beyond that. He needs to bring the country into a new territory no one else has imagined. He needs to steer the ship into a territory unknown and undiscovered by others.

An example of a leader with true vision is Jack Welch, the former chairman and Chief Executive Officer (CEO) of the American's General Electric (GE) Company. Welch was appointed as the CEO of GE in 1981. At that time, GE was one of the established multinational corporations valued at a respectable \$14 billion dollars. Analysts and the public said this was the best position GE would not get anywhere beyond that but being a visionary man he is, Welch drew his own plans. His immediate announcement was to multiply GE's profit and diverse its operations, an idea laughed at by many. He was said to be day dreaming. Welch proved everyone else wrong by turning GE into a \$400 billion dollar company within a span of 10 years. The company's size and profits reached a point beyond imagination. In the process, Welch made name as one of the most visionary leaders in the world.

Of course, with that being said, visionary leadership is not only limited to business operations. In the military perspective, the advancement and development of Malaysia's military weaponry, tactical approach and facilities are very much attributed to the leaders who had envisaged the creation of an accomplished military force. Through the establishment of missions and visions today, our military operation has gone beyond the regimental sphere into other territories that include research and academic. The inception of the country's first defense university, Universiti Pertahanan Nasional Malaysia or UPNM is the testimony of this vision.



## INTEGRITY AND TRANSPARENCY

Last but not least, a true leader is one with integrity and transparency. In other words, they believe with the ‘what you see is what you get’ principle. The mission and vision is stated loud and clear, and they make sure everyone else understands it. All inquiries and requests, as long as they are relevant, are addressed accordingly. Shortcomings and inadequacies are admitted and accepted with open arms with the intention to always continuously improve the leadership ability.

## CONCLUSION

In a nutshell, we do not want to settle for just being a leader, but we must aim to be a true leader. Ask ourselves, are we true leaders? If not, this is what we must achieve, and this is what we must aim to be. The very first step into becoming a true leader is to accept the fact that we are all leaders.

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Kapt (Dr) Rauhah Binti Mohamad Salleh was born on the 1st of June 1979 in Alor Setar Kedah. She was brought up in a small village in Alor Setar, called Tandop and received her primary education at SK Dato' Wan Mohd. Saman, Tandop. Upon finishing her secondary school in MRSM Jasin, Melaka, she pursued her medical degree at the Royal College of Surgeons, Ireland, and was subsequently commissioned as an army medical officer in August 2004. Her passion to gain more knowledge and experience has driven her to work in various camps in a number of states including the Penrissen Camp, Sarawak. She currently serves as the Officer Commanding for the RSAT Airport Camp, Sungai Petani, Kedah.



By Lt (Assoc Prof Dr) Teoh Hsien-Jin

### SYNOPSIS

Modern soldiers have to critically consider the social and political landscape, in addition to the traditional geographical landscape, strength and possible tactics of hostile forces. The concept of thinking, and factors that encourage, and discourage critical thinking, are discussed in this article. Guidelines on the manner in which training could be conducted to promote critical thinking are developed. Critical thinking, as a learning skill, does not just start and end with a training workshop. It is instead a developmental process that continues right throughout the military personnel's career.

### INTRODUCTION

As warfare becomes more complex, and moves beyond solely offensive operations towards peace-keeping and observer missions, today's soldier would have to consider the social and political landscape, in addition to the traditional geographical landscape, strength and possible tactics of hostile forces. When lives are at stake, and we are up against the pressures of modern technology, political uncertainty, and also cultural sensitivities, it is even more important that military strategy takes into account not just firepower and ground, but also current social circumstances.

The war in Iraq is a good example of where the US Coalition forces faced, not just civilians, but also hostile insurgents. Of concern is the increasing percentage of battle casualties amongst junior officers. Numerous questions are being asked when considering whether these casualties could have been avoided. Were the officers adequately prepared? Were they carefully analysing the situation before taking action? Were they taking all the facts into consideration? Could this situation have been avoided?

The topic of appraising a hostile situation in an analytical manner is not a new subject. It has been pondered upon, and encouraged as a skill by many military strategists. Clausewitz promoted the value of analysis via critical by stating: "What we must do is to survey all those gifts of mind and temperament that in combination bear on military activity."

In this article, the author reviews the concept of thinking and analysis via the concept of critical thinking, and then identifies what researchers have indicated are factors that encourage and discourage critical thinking. This article concludes with some guidelines that researchers in the area of critical thinking have suggested be used when attempting to impart these skills to trainees.

### DEFINING CRITICAL THINKING

There has been much interest in the topic of critical thinking and this has been widely published. Naturally, there are wide ranging views on what critical thinking is, and how this concept is described. The explanations of critical thinking range from the brief and philosophical to the specific and elaborate.

Beginning to home in on a concept and definition of critical thinking is important, as studies indicate that military educators do not have a consensus on what it is, leading to problems with developing a unified curriculum (Dike et al. 2006). In a study of 124 military educators, answers ranged across more than 10 categories with the majority of educators somewhat agreeing that critical thinking included developmental process activities, dispositions and/or attitudes, understanding cause and effect, and the issues related to a broader problem. Clearly none of these broad definitions were broad enough to begin to develop a curriculum.

Scholars have proposed various definitions of critical thinking. Ennis (1985), suggested that critical thinking is one's conscious effort in deciding what to do or to believe by focussing one's thoughts on an issue. On a similar note, Baker and Baker (1994) defined it as the process of comparing and contrasting, problem identification and inferring. Sternberg (1988, 1998) suggested that it involves the application of mental processes to real-life tasks, goals and situations. He further indicated that this has to be observed within a person's socio-cultural context through adaptation to, selection of, and shaping of the environment.

There are also scholars who do not directly define critical thinking, but instead include it as part of a broader concept. Bloom's Taxonomy of methods of teaching, includes critical thinking with the mental domain which is categorised into knowledge, comprehension, application, analysis, synthesis and evaluation (Engelhart et al. 1956). From the perspective of what constitutes human intelligence, Sternberg (1998) indicated that this comprised three main aspects: analytical, creative and practical. The analytical tasks, which would be similar to critical thinking, involve analysing, judging, evaluating, comparing and contrasting, and critiquing. Dewey (1971), also provided an assortment of skills that can be included under the domain of critical thinking. Using the term "reflective thinking", Dewey indicated that real problems cannot be answered by formal logic alone. A true reflective thinker makes a reflective judgment to bring closure to situations where there is uncertainty, controversy, doubt and concern about the current understanding of an issue and about pre-conceived assumptions. In summary, most writers indicate that the concept

of critical thinking must involve several components which include analysis and critique.

In the course of trying to explain the concept of critical thinking, some writers have gone on to develop more specific guidelines on how this can be conceptualised, and how these concepts are put to practice. The following model is presented. It looks at the concept as a series of developmental stages.

King and Kitchener (2004) developed a model of reflective argument, sometimes referred to as the "Reflective Judgment Model". They suggested that problems can be placed on a continuum from low to high degrees of structure. Thus, critical reflective thinking can be classified developmentally into seven stages of reflective judgment. These may be described as:

- Stage 1: What a person believes is true.
- Stage 2: A person can know with certainty either directly or based on authority.
- Stage 3: In some areas knowledge is uncertain and justification is based on what one feels to be right at the moment.
- Stage 4: Knowledge is uncertain because of situational variables. How we justify belief is idiosyncratic.
- Stage 5: Knowledge is contextual; people know via individual contextual filters. Justification is context-specific.
- Stage 6: Knowledge is constructed by comparing evidence on different sides on an issue or across contexts. Justification involves explaining comparisons.
- Stage 7: Knowledge is an outcome of an inquiry process generalizable across issues. Justification is probabilistic; evidence and argument are used to present the most complete understanding of an issue.

The examination of the various definitions of critical thinking appears to conclude that it is a



concept made up of multiple factors. Most authors tend to agree that analysis, problem solving, understanding limitations, and seeing things from the perspective of others seem to be important factors to be included in the definition of critical thinking.

## WHY CRITICAL THINKING IS IMPORTANT

Having determined several perspectives on the definitions of critical thinking, the focus is now turned towards several reasons for why there is a need for critical thinking.

Using critical thinking is also crucial when officers begin to think about how they are conveying ideas and information to one another. For example, critically re-examining the inherent problems with understanding concepts used by the US Army such as “asymmetric threats”. Blank (2004) pointed out that at all levels of defence, analysts use the words “asymmetry” and “asymmetric” without fully considering whether the contexts within which the usage of these terms makes sense. After all, “asymmetry” is a new word for an old term “all war is based on deception”. Given that in war, each side’s strategy, operations, and thus threats to each other would be asymmetric to those of the other side, are we not stating the obvious when the terms “asymmetric threat” are used. All threats have to be asymmetric, otherwise the chances of success would be minimal. Rather, as Blank pointed out, it makes more sense to use the term “asymmetry” when considering strategies, operations, tactics, the nature of the enemy and the war itself. When civilian policy makers, and military strategists and implementors have different ideas of the terminology they are use, then military operations may end up not achieving what they are supposed to achieve. Take for example America’s foreign policy objectives for Iraq which were primarily aimed at bringing about democracy, freedom, and security of movement. These have not been achieved in Iraq with a military scenario which was focussed on fast acting conventional warfare. The operation ousted Saddam Hussein, but did not bring about a change to Iraqi culture and a mindset conditioned by years under the rule of the Baathists. Thus, Iraq is still a largely unsafe, undemocratic, and insecure

environment. Perhaps, there has been some degree of confusion as to what was actually intended for Iraq leading to a rather short-sighted, rather than long-sighted approach to strategy leading to less of a foreign policy success, in the long run, than hoped for.

Many wars have been won because of detailed and critical thinking about the relationship between civilian intent and resources, and military strength and preparedness. During the Battle of Britain, Air Chief Marshall Hugh Dowding critically appraised the situation from the perspective of having adequate logistics to run a war (Higham 2003). Despite political demands by the French to deploy most of Britain’s Fighter Command to France, Dowding managed to persuade Prime Minister Winston Churchill to hold most of the aircraft back, and allow Dowding to work with the civilian aviation industry to increase the number of aircraft to meet the German threat. Thus, Dowding was able to match his resources with demand, by critically appraising the political, military, and civilian resource scenario.

Critical thinking is also important in the area of morale. Leinbach (2003) recalled how many U.S. fighter pilots in Korea thought not of patriotism, but about the success of take offs and landings, and simply surviving each combat mission. This unfortunately is not what politicians and the military high command would like to hear. When failures occur, pilots get demoralised, and there is less interest in flying. Through thinking critically, Leinbach began to understand the broader context of the operation and its purpose and realised that what he was fighting for was not simply a washed notion of patriotism, but a way to broaden the experience of humanity to other nations. This self-realisation helped Leinbach (2003) understand his role in the world, and began to accept his role in war with the conviction of an aware man. This example would suggest that critical thinking does lead to an informed sense of duty and purpose in military operations.

The three examples provided show that thinking critically about the meaning of policies and resources when planning operations is crucial in contributing towards the success of the operation.

## WHY CRITICAL THINKING DOES NOT OCCUR

Having reviewed the various definitions of critical thinking, and why it may be necessary, this section examines the various factors that influence critical thinking. This section is broken up into factors that discourage critical thinking.

A variety of explanations for why critical thinking does not occur have been put forward. These appear to be largely attributed to the mental abilities and personal circumstances of the trainee. Three perspectives have arisen from the literature. These are related to the trainee's personal goals and values, not being able to see things from another person's perspective, and the style of communication that the trainee is familiar with.

It all begins with trainees not viewing their personal goals and theories as objects for critical reflection (Kuhn & Dean, 2004). They suggested that trainees bring to the class a set of rules and values. If these rules include believing that the instructor, and/or the lecture notes are the absolute authority, then they cease to question. Thus the trainees believe that whatever the instructor concludes is the absolute truth. This view is similar to that of Klaczynski, Gordon and Fauth (1997) who suggested that when trainees are presented with information that may go against their personal beliefs of how things should function, they apply a wide range of reasoning tactics to preserve the integrity of these beliefs. As such, most trainees are not the objective information processors that instructors wish to "create". On the other hand, the trainees are willing to find flaws in "scientific" evidence only when the evidence threatens their personal beliefs. Klaczynski et al. (1997) suggested that this resistance, and selective use of analysis, is due to the principle of "cognitive economy". This occurs as a result of limited mental resources, and trainees choose when, and when not to analyse. One might view this perspective as very extreme and perhaps take a more moderate perspective. One might also suggest that some trainees may want to adapt to their new environment, however the lessons inculcated from the previous learning environment, such as the education system, have become habit, and thus it may be an emotional and mental struggle to unlearn these old habits, and begin to assimilate new learning strategies.

Some researchers feel that not being able to analyse may be related to not being able to see things from another person's point of view. Hays and Brandt (1992) suggested that many trainees may not be able to generate counter arguments, as they are not able to identify with opposing views to imagine the potential objections. In other words, not knowing enough about the characteristics of a possible oppositional perspective may hinder the trainee's ability to develop a reasonable opinion of the limitations of their viewpoint.

Finally, there are those who would view this inability to think critically as related to the familiarity of trainees with a particular style of communication. Knudson (1992) indicated that as most trainees' mental attitudes for argument is based on the way verbalisations', thus the cues to consider and respond to opposing viewpoints are missing in a written discourse. Furthermore, analysis may also depend on the manner in which the information is presented to the trainees. Either the trainees read ahead of time and produce text-based questions, or alternatively, they ask knowledge-based questions based on their inquisitiveness into the subject with very little prior knowledge (Scardamalia & Bereiter 1992). The latter was found to be much more closely related to analytical thinking. On a similar note, there is a clear opinion that if no clear guidance has been given as to what is required of the trainee in terms of the task goal, then progress towards being analytical would be somewhat retarded (Kuhn, 2005). Thus, the manner in which instructors present information is important in guiding trainees towards a more analytical style of communication.

## WHAT ENCOURAGES CRITICAL THINKING

There are also a variety of factors which researchers have found that encourage critical thinking. There are two general perspectives. The first is environmental and indicates that critical thinking may be encouraged by the attitudes of the instructors. The second suggests that it may be to do with the trainee's attitudes and abilities.

The attitude of the instructors plays a major role in encouraging critical thinking. Norton et al. (1992) indicated that the instructor's beliefs on training influence how they structure tasks and

interact with trainees. Thus, if an instructor believes that it is their job to help trainees to think critically, in addition to simply imparting knowledge to them, the trainees would begin to think critically. Anders and Richardson (1992) pointed out that this attitude expands to the context of how grading and testing is carried out, and why instructors should be accountable for what they are actually testing (i.e., regurgitation of materials, or thinking abilities). Thus it is important to recognise that the instructor plays an important role in the imparting of critical thinking abilities given that there are a variety of studies that show that critical thinking skills can be taught and are transferable across contexts (Halpern & Nummedal, 1995).

Having a particular set of values or ideals may be crucial for one to begin to think critically. Ennis (1985) suggested that ideal critical thinkers have, amongst other qualities, a disposition both 'to get things right' and 'to care about the worth and dignity of every person. In addition to these values, Halpern (1998) listed other required dispositions of critical thinkers. These include:

- Willingness to engage in and persist at a complex task.
- Habitual use of plans and the suppression of impulsive activity.
- Flexibility or open-mindedness.
- Willingness to abandon non-productive strategies in an attempt to self-correct.
- An awareness of the social realities that need to be overcome so that thoughts can become actions.

A lot of work also needs to be put into showing the trainees the value of being analytical, and to ensure that they are willing to use the skills (Halpern 1999). Once these dispositions are in place, being able to think critically requires trainees to be able to evaluate their thinking processes (Halpern 1999). Thus, trainees need to assess how good a decision was and how well a problem was solved. If they are able to do thus, critical thinkers in the long run would appear to achieve more desirable long term outcomes.

In summary, it would appear that instructors need to examine whether trainees have the ability to think critically, and next whether it is their intention to, or whether critical thinking goes against their personal beliefs. Having ascertained these issues, one would have to ensure that the trainees have the practical and communication skills to begin to think critically. Finally, the style of teaching of the instructors and whether they encourage critical thinking needs to be considered.

## HOW CRITICAL THINKING MAY BE TAUGHT

When thinking about the needs for critical thinking in training, today's military needs to be aware that modern warfare has moved away from the time of attrition warfare where large amounts of aggregation of forces were moved in concert towards victory by a few broadly educated leaders at the top (Shuford 2007). The reality of today's situation is that forces are strategically dispersed, and that operational decisions are based on knowledge of relationships with competitors and the broader supporting forces. Thus there is an even greater need to place responsibility for decision making on individual awareness, creative thinking, and good judgement at unit level.

This literature has indicated that there may be two possible causes for trainees not thinking critically. These would include environmental teaching factors, and the other would be the personal attitudes and disposition of the trainees. Regardless of what perspective one takes, it would appear that the main thing that one would be able to manipulate would be the environment and the teaching methodology. Thus, having an influential instructor as a role model would help to change the attitudes of the trainees' approach to learning.

There may not be anything that can be done for some trainees. Sternberg (2000) indicated the concepts of being analytical, creative and practical intelligence vary amongst trainees. He indicates that "School-smart people are not necessarily the most creative thinkers (and vice versa). School-smart people may lack high level of common sense, or practical intelligence (and vice-versa), and that creative people can have difficulty adjusting to the demands of everyday life (and vice-versa)." Thus, the dispositional needs to be creative, analytical



and practical does vary amongst trainees, and not everyone may be naturally born with all these qualities. Therefore trainees need to possess a certain level of intelligence to be aware and subsequently to be able to analyse.

The approach that pre-requisite knowledge is important, is reflected when it comes to using tests of critical skills. Thus some pre-requisite knowledge that is related to the area being tested is necessary. For example, trainees who perform well on the critical thinking section of the “Graduate Skills Assessment Test”, would have to have pre-existing knowledge of the ‘real world viewpoint’ in the subject being assessed (Australian Council for Educational Research, 2001). Thus this test is relevant only to persons who have prerequisite skills, and may be context specific.

Sternberg, Torff and Grigorenko (1998)’s model includes critical thinking which involves class discussion, and analytical activities which involve creative and practical skills. Sternberg et al. (1998) noted that the advantage of triarchic instruction is that it is more exciting, and subsequently results in teaching that stimulates and excites trainees, and thereby leads to improved performance. To put the theory of triarchic intelligence to practice, Sternberg (1998) outlined 12 principles for teaching practice. At each step of the way, he constantly emphasised the need for specifying the goals of the exercise, getting trainees to compare and contrast, and utilisation of a variety of cognitive problem-solving principles. The principles also emphasised encouragement and capitalisation on the trainees strengths. Sternberg also went out of his way to make it clear that his principles are not original principles, but rather a compilation of known techniques that have been shown to work.

A Four Part Empirically Based Model was described by Halpern (1998). These four parts are labelled as “Dispositional”, “Instruction”, “Training” and “Meta-cognitive”. The important components of this model are:

- Dispositional Component to prepare learners for effortful cognitive work.
- Instruction in the skills of critical thinking (i.e., verbal reasoning, argument analysis,

hypothesis testing, likelihood and uncertainty, decision making and problem solving skills).

- Training in the structural aspects of problems and arguments to promote trans-contextual transfer of critical thinking skills (i.e., what gets remembered heavily depends on what occurred during learning; spaced practice with different sorts of examples and corrective feedback to develop “spontaneous noticing”; usage of elaboration that develops interconnected knowledge structures; meaningful practice with feedback.)
- Meta-cognitive components that includes checking for accuracy and monitoring progress towards the goals. (i.e., How much time and effort is the problem worth?, What do we already know about the problem? What is the reason for continuing to investigate this problem? How difficult do you think it would be to solve this problem and reach a conclusion? What critical thinking skills may be useful to help solve this problem? Are we moving towards a solution?)

It is not just about including skills related to critical thinking that are important for encouraging critical thinking amongst trainees, the manner in which assignments are presented is also an important consideration. Nussbaum and Kardash (2005) suggested that instructors set persuasion goals for case studies. This involves providing trainees with a text that outlines the debates of others on a topic and specifically directs trainees to consider both sides of the issue. Through this direction, and through the marking scheme, trainees need to be shown that considering and refuting counterarguments can enhance the persuasiveness of their answers.

Another approach taken to identify methods to educate officers in the craft of critical thinking was proposed by Tucker (2007). He began by making a distinction between military education and training. “Military education requires knowledge of, and adherence to technical order procedures, regulations, and rules of engagement. By contrast, education emphasises critical thinking, original thought, and judgement.” He explains that the Socratic Method can be used to encourage

critical thinking. The Socratic Method is defined as a prolonged series of questions and answers which challenge a moral assertion by leading an opponent to draw a conclusion that contradicts his viewpoint. Leading questions may be used in this exercise. Instead of telling the student where to begin and forcing him to memorise the answer for future use, the instructor can simply ask what things are important in the task or scenario, and let the student begin to explore and put forward an opinion. When students see that they have answered their own questions with a familiar logic, the ability to understand and develop their own thought processes will promote confidence in future successes. Thus, the student learns that the instructor is not there to lecture, but to serve as a sounding board for the student's ideas and actions. Thus, as Socrates put it, teaching is engaging potential learners in argument and recourse to make them aware of their own ignorance, and enable them to discover for themselves the truth the teacher had back.

The approaches suggested so far have been an amalgamation of differing techniques. However, there are some lessons about the ability to teach and think critically that cognitive research does conclude. In a review on the lessons learnt from cognitive science, Van Gelder (2005) concluded the following:

- Critical thinking is hard.
- Practice makes perfect.
- Practice is required for transfer of skills from situation to situation.
- Practical theories are required to understand the process, and correct oneself.
- Mapping out the argument in a logical manner helps to focus arguments.
- Be willing to do away with one's own beliefs, and subscribe to a stronger belief which is backed by evidence.

Thus, teaching critical thinking takes practice, and must be accompanied by case studies across varying contexts, and must include an awareness

of the trainees of his/her own mental processes and biases.

Finally, class management techniques needs to be considered. Some researchers contend that the disposition and the interpersonal skills of the instructor in guiding the trainees is an important consideration. This sets up the learning environment within the instructional area. Smith (1977) suggested that improvement in interactions is crucial for trainee morale and also critical thinking. Whilst interacting with trainees, it is important that instructors encourage, praise and use trainee ideas, ask questions, encourage trainees to participate in the training session at an appropriate intellectual level, and regularly encourage peer-to-peer interaction whilst discussing the subject (Sternberg 1998).

When it comes to delivery of curriculum content that supposedly features critical thinking, there is some evidence that some of these skills may be taught via distance education to senior military officers (Schumm et al. 2006). The U.S. Army ran a "Combined Armed Services Staff School" course on 500 reserve and active component personnel via distance learning. Preliminary results indicated that satisfaction with critical thinking appeared to be the most important component that predicted the outcome on the courses. In addition, with this level of staff, what did not seem to create an impact was the class format, number of or changes of instructors, or having to move from one phase to the next. The most important component appeared to be related to the promotion of critical thinking and discussion amongst trainees.

## CONCLUSION

In summary, the variety of training programmes reported that the manner in which, and the kinds of skills taught by the instructor would need to be considered when developing a critical thinking programme for the trainees. However, it needs to also be recognised that some form of prerequisite knowledge of the course materials would be required when trying to apply critical thinking skills. Thus, the intelligence level of the potential candidates for the critical thinking course may be required when selecting trainees for the course. Upon conclusion of the course, attention would need to be paid to the manner in which assignments are

presented to trainees, and the way in which critical thinking is encouraged in class via trainee-instructor, and trainee-trainee interactions. Thus, critical thinking as a learning skill does not just start and

end with a workshop, but is instead a developmental process that continues right throughout the trainee's military career.

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Oleh Lt Kol Saiful Anwar bin Md Ali (Bersara)

### SINOPSIS

Penggunaan kuasa tentera dalam campurtangan kemanusiaan sentiasa menjadi perhatian masyarakat antarabangsa. Penggunaan kuasa tentera ini dalam campurtangan kemanusiaan ini boleh menimbulkan konflik di peringkat antarabangsa jika tidak ditangani dengan bijak. Namun, perkara yang menjadi persoalan ialah apakah hak dan had sesebuah negara menggunakan kuasa tentera bagi campurtangan kemanusiaan ke atas sebuah negara yang lain? Apakah penggunaan kuasa tentera sesebuah negara itu perlu mendapat mandat dan kelulusan dari pihak-pihak yang tertentu? Bagaimana pula dengan situasi yang memaksa penggunaan kuasa tentera digunakan bagi campurtangan kemanusiaan ke atas sesebuah negara lain? Setakat manakah penggunaan kuasa tentera dalam campurtangan ini perlu dihentikan? Perkara-perkara ini perlu diberi pertimbangan yang serius kerana kegagalan melaksanakan misi campurtangan kemanusiaan ini akan melibatkan maruan dan kedaulatan sesebuah negara.

### PENDAHULUAN

Penggunaan kuasa tentera dalam campurtangan kemanusiaan dalam era Perang Dingin adalah satu amalan yang dipertikaikan dari segi undang-undang antarabangsa, tetapi dalam era pasca Perang Dingin, konsep ini semakin mendapat tempat di kalangan negara barat sebagai instrumen yang dianggap sesuai dan berkesan untuk menangani masalah pencabulan hak asasi manusia sejagat. Namun, persoalan yang menarik perhatian ialah konsep ini telah menimbulkan cabaran kepada sistem antarabangsa yang berasaskan prinsip *sovereignty*, *non-intervention* dan *non-use of force*.

Perdebatan hangat mengenai keutamaan *state sovereignty* dan *common humanity* telah berlaku dan isu penting yang ditimbulkan ialah:

- Apakah wajar negara yang mencabuli atau melakukan keganasan yang keterlaluan terhadap hak asasi manusia mempunyai hak mengikut norma kedaulatan dan *non-intervention*?

- Apakah masyarakat antarabangsa mempunyai hak dan tanggungjawab untuk melindungi dan mempertahankan nilai dan hak kemanusiaan sejagat?

- Apakah penggunaan kuasa ketenteraan untuk melaksanakan *humanitarian intervention* merupakan instrumen yang sesuai dan berkesan?

Terdapat pemerhati berpandangan bahawa kuasa ketenteraan bukan merupakan instrumen yang sesuai dan berkesan untuk menangani masalah pencabulan hak asasi kemanusiaan. Pada lazimnya, penggunaan kekerasan untuk menyelamatkan nyawa manusia adalah sukar, bahaya dan *counter-productive* sepertimana yang berlaku di Somalia, Rwanda dan Bosnia. Mereka melihat *forcible humanitarian intervention* tidak mempunyai masa depan yang cerah jika dibandingkan dengan *non-forcible or non-violent humanitarian intervention* yang terbukti keberkesanannya di Timor Leste.

Artikel ini akan cuba menilai apakah kuasa ketenteraan merupakan satu instrumen polisi yang sesuai dan berkesan untuk menangani krisis kemanusiaan sejagat. Dalam konteks ini kita akan melihat bagaimana dan sejauhmanakah kuasa ketenteraan boleh diaplikasikan secara berkesan dan mencapai matlamat misi *humanitarian intervention* tanpa berlaku malapetaka yang menimpa operasi Pertubuhan Bangsa-bangsa Bersatu (PBB) seperti di Somalia pada tahun 1993 yang mengorbankan 18 anggota Ranger Amerika Syarikat dan seterusnya mengakibatkan operasi tersebut terpaksa dibatalkan dan di Bosnia pada tahun 1992-1995, yang mana pembunuhan kejam berlaku secara berleluasa di hadapan pasukan pengaman yang pasif.

Pada hemat penulis, penggunaan kuasa ketenteraan adalah sesuai dan penting dalam situasi krisis kemanusiaan tertentu dan peranan ini hanya boleh diaplikasikan secara berkesan melalui pendekatan strategik yang mencerminkan sifat (*nature*) sebenar sesuatu krisis kemanusiaan. Ini adalah kerana sesetengah sifat atau ciri-ciri krisis kemanusiaan memerlukan aplikasi kuasa ketenteraan yang *substantial* dan *decisive* sebagaimana pengeboman *North Atlantic Treaty Organization* (NATO) ke atas Yugoslavia, dan sesetengahnya pula hanya memerlukan sedikit atau tidak memerlukan langsung penggunaan kuasa ketenteraan. Dalam kes tertentu pula, *PeaceKeeping Operation* (PKO) adalah perlu, tetapi *lightly armed* di atas persetujuan pihak-pihak yang bertelagah yang mana genjatan senjata telahpun berkuatkuasa.

Pendek kata, kita perlu mengkaji *typology* iaitu sifat (*nature*) dan ciri-ciri sesuatu krisis kemanusiaan sebelum menentukan kesesuaian dan peranan kuasa ketenteraan dalam menanganinya. Untuk itu, kajian akan dibuat ke atas dilemma dan masalah *humanitarian intervention* untuk membuktikan *typology* ke atas sesuatu krisis kemanusiaan adalah penting bagi menentukan kesesuaian dan keberkesanan kuasa ketenteraan sebagai instrumen polisi kepada *humanitarian intervention* atau *proper use of force* dan *strategic response* kepada krisis-krisis kemanusiaan yang berlaku.

Kajian ini dibahagikan kepada 4 bahagian. Bahagian pertama akan membincangkan apakah

itu konsep *humanitarian intervention* dengan perhatian kepada perdebatan dan hubungan konsep ini dengan sistem PBB. Bahagian kedua pula membincangkan *humanitarian intervention* di era Perang Dingin dan dilemma *humanitarian intervention* di era pasca Perang Dingin. Bahagian ketiga pula ialah analisis ke atas *typology* krisis kemanusiaan dan disusuli dengan perbincangan mengenai pendekatan strategik dalam *humanitarian intervention* dan kesimpulannya.

## KONSEP HUMANITARIAN INTERVENTION – SATU ANALISIS

### Definisi Konsep *Humanitarian Intervention*

Setakat ini para sarjana tidak dapat mencapai kesepakatan mengenai definisi konsep *humanitarian intervention*. Oleh itu adalah perlu menentukan satu *working definition* yang sesuai dengan konteks dan skop perbincangan artikel ini. Adalah menjadi penerimaan umum bahawa pendekatan yang menyeluruh dan proaktif diperlukan untuk menangani krisis kemanusiaan yang serius. Pendekatan yang dimaksudkan termasuklah *preventive diplomacy*, *conflict resolution*, *national reconciliation* dan *nation building*. Tetapi tujuan artikel ini adalah untuk membincangkan isu-isu yang berkaitan dengan *humanitarian intervention* yang masih belum mendapat kesepakatan masyarakat antarabangsa terutamanya *forcible humanitarian intervention* tanpa kelulusan PBB dan kesesuaian serta keberkesanan penggunaan kuasa ketenteraan dalam melaksanakan *humanitarian intervention*.

Artikel ini tidak berhasrat menggunakan definisi karya-karya hubungan antarabangsa yang mendefinisikan konsep ini sebagai *a range of actions including humanitarian assistance and forcible military intervention*. Artikel ini akan mengaplikasikan definisi yang berpanduan kepada undang-undang antarabangsa. Untuk itu, definisi Sean Murphy yang berbunyi *threat or use of force by state, group of states, or international organisation, primarily for the purpose of protecting the nationals of the target state from widespread deprivations of internationally recognised human rights* adalah sesuai untuk konteks dan skop perbincangan artikel ini.



### Perdebatan Konsep *Humanitarian Intervention*

Perkara utama yang menjadi perdebatan ialah persepsi dan keutamaan yang berlainan mengenai dua prinsip utama undang-undang antarabangsa iaitu nilai hak asasi manusia dan norma kedaulatan, *non-intervention* dan *self-determination*. Kedua-dua prinsip ini adalah penting untuk memelihara keamanan dan keselamatan dunia. Namun, kedudukan kedua-dua prinsip ini dalam PBB adalah berlainan yang mana prinsip kedaulatan, *non-intervention* dan *self-determination* termaktub dalam Piagam PBB (contohnya Article 2(3) dan Article 2(4) dan Chapter VII), manakala tiada peruntukan atau mekanisme dalam Piagam PBB untuk perlindungan ke atas hak asasi manusia.

Negara Barat dan negara membangun mempunyai persepsi dan keutamaan yang bercanggah mengenai konsep kedaulatan dan hak asasi manusia. Kebanyakan negara-negara membangun tidak setuju dengan penekanan Barat terhadap hak individu dalam doktrin hak asasi manusia. Negara-negara membangun juga menolak pendirian Barat bahawa perkembangan mengenai norma hak asasi manusia dan undang-undang kemanusiaan antarabangsa telah meminda konsep kedaulatan. Pihak Barat berpendirian bahawa hak asasi manusia tidak lagi hanya merupakan isu dalaman sesebuah negara dan konsep kedaulatan tidak boleh digunakan oleh negara sebagai perisai untuk melepaskan diri dari tanggungjawab terhadap perlindungan dan pemeliharaan hak asasi manusia.

### Sistem PBB dan *Humanitarian Intervention*

Pendirian Barat bahawa kepatuhan kepada kedaulatan adalah tertakluk kepada penghormatan kepada hak asasi manusia terpapar jelas dalam amalan Majlis Keselamatan PBB. Artikel 2(7) PBB melarang campurtangan dalam *domestic jurisdiction of any state*, tetapi sejak berakhirnya Perang Dingin, Majlis Keselamatan PBB telah menonjolkan diri sebagai institusi antarabangsa yang mempunyai hak untuk *humanitarian intervention*. Kecenderungan ini dapat dilihat daripada tindakan badan itu meluluskan beberapa resolusi yang secara tidak langsung telah memperluaskan definisi threat to international peace and security di bawah Artikel 39 Piagam

PBB merangkumi penggunaan kuasa ketenteraan untuk campurtangan dalam krisis kemanusiaan, walaupun krisis tersebut hanya dalam lingkungan domestik sesebuah negara. Dalam hal ini, Murphy berpendapat Majlis Keselamatan mempunyai hak undang-undang untuk campurtangan atau memberi kuasa kepada sekumpulan negara atau organisasi serantau dalam sesebuah negara untuk melindungi hak asasi manusia rakyat negara itu yang diikhtiraf oleh masyarakat antarabangsa daripada terus dicabuli. Murphy juga berpendapat bahawa hak seperti itu kini secara umumnya telah mendapat pengiktirafan undang-undang antarabangsa.

Walaupun pendapat Murphy itu dipertikaikan oleh pelbagai pihak termasuk kebanyakan negara-negara membangun, namun operasi *humanitarian intervention* secara ketenteraan sejak akhir-akhir ini yang diluluskan oleh PBB mencerminkan terdapatnya kesepakatan masyarakat antarabangsa bahawa penghormatan kepada hak asasi manusia perlu diberi perhatian berat dan ia adalah tanggungjawab bersama termasuk negara-negara membangun.

Pada masa yang sama, kegagalan atau kelambatan Majlis Keselamatan memberi respon kepada sesetengah krisis kemanusiaan selalunya diganggu-gugat oleh halangan politik dan struktur. Pertama ialah Majlis Keselamatan sering menghadapi masalah kekurangan kemahuan politik di kalangan ahlinya. Kedua, operasi *humanitarian intervention* yang berkesan dan konsisten tidak dapat dilakukan disebabkan realiti hubungan geopolitik di kalangan ahli-ahli tetap Majlis Keselamatan. Keadaan ini telah menyebabkan kuasa veto sering digunakan dan dakwaan bahawa tiada keselarasan (*inconsistency*) tindakan terhadap krisis kemanusiaan adalah perkara biasa. Contohnya, Majlis Keselamatan tidak mengambil apa-apa tindakan terhadap krisis kemanusiaan di Chechnya, manakala China dan Rusia pula menggunakan kuasa veto untuk menghalang penggunaan kuasa ketenteraan PBB ke atas Kosovo.

Ketiga, terdapat jurang yang ketara dalam undang-undang antarabangsa mengenai *humanitarian intervention*, sebagaimana dapat dilihat dari kempen *humanitarian* NATO ke atas Kosovo iaitu dengan menimbulkan kekurangan

mekanisme undang-undang antarabangsa ianya menghadapi krisis kemanusiaan yang kritikal, malah ia juga menimbulkan perdebatan hangat sama ada negara mempunyai hak untuk campurtangan secara kemanusiaan dan penggunaan kuasa ketenteraan tanpa kelulusan PBB. Professor Richard N Gardner umpamanya berpendirian bahawa, *no right of national intervention has been recognised in the absence of Security Council authority*.

Daripada analisis di atas, adalah jelas bahawa *forcible humanitarian intervention* tanpa kelulusan PBB boleh disifatkan sebagai instrumen yang bersifat *coercion*, *breach of sovereignty* dan *non-consensus*. Mengikut Chapter VII PBB, Majlis Keselamatan hanya boleh meluluskan tindakan penguatkuasaan ketenteraan dalam kes-kes yang dikategorikan sebagai *threat to international peace and security*. Oleh itu, walaupun krisis kemanusiaan itu dikatakan menjejaskan keamanan dan keselamatan dunia, isu pokok yang dipersoalkan ialah bila, bagaimana dan setakat mana?

## HUMANITARIAN INTERVENTION DI ERA PERANG DINGIN

Semasa Perang Dingin, *humanitarian intervention* dilaksanakan secara *unilateral*, di mana sesebuah negara menakluki negara lain atas alasan untuk menyelamatkan penduduk yang menghadapi penderitaan kemanusiaan. Sungguhpun campurtangan dibuat atas alasan kemanusiaan, tetapi tindakan itu telah diragui, malah tidak diiktiraf oleh masyarakat antarabangsa. Tiga kes *humanitarian intervention* yang menjadi fokus perbincangan ialah:

- Campurtangan ketenteraan India di Pakistan Timur (kemudian Bangladesh) pada tahun 1971 atas alasan menyelamatkan nyawa orang awam yang terjebak dalam perang saudara negara itu.
- Penaklukan Vietnam ke atas Cambodia pada tahun 1978 kononnya untuk menyelamatkan rakyat Cambodia daripada pembunuhan kejam oleh Regim Pol Pot.
- Kemasukan tentera Tanzania ke dalam wilayah Uganda pada tahun 1979 atas alasan

untuk melindungi keselamatan rakyat negara itu.

Masyarakat antarabangsa yang mengetahui motif sebenar ketiga-tiga negara, iaitu bertindak atas kepentingan nasional masing-masing, telah mengkritik hebat tindakan itu dan menganggapnya bercanggah dengan norma asas antarabangsa, *non-intervention*.

Berakhirnya Perang Dingin dilihat sebagai peluang terbaik untuk menjadikan PBB sebagai badan utama dalam operasi *humanitarian intervention* yang sah, *multilateral* dan berkesan. Namun, legitimasi dan keberkesanan operasi *humanitarian intervention* di era pasca Perang Dingin menjadi tandatanya jika kita meninjau realiti di Somalia, Rwanda dan Bosnia-Herzegovina. Senario di ketiga-tiga negara itu jelas menunjukkan bukan semua krisis kemanusiaan adalah sama, ahli-ahli politik tidak dapat bersepakat mengenai apa yang perlu dilakukan dan siapa yang patut melakukannya dan bukan semua negara yang menjadi sasaran *humanitarian intervention* menerima baik campurtangan tersebut.

Kesimpulannya, penggunaan pasukan tentera dalam krisis kemanusiaan tidak semestinya berkesan dan hasilnya adalah berbeza-beza mengikut *nature* konflik yang berlaku dan sama ada terdapat keadaan yang sesuai untuk campurtangan dilakukan. Apakah masalah yang timbul dan apakah benar konsep *humanitarian intervention* yang belum jelas telah menghalang kesesuaian dan keberkesanan penggunaan pasukan tentera, walaupun terdapatnya semangat kerjasama yang baru muncul ekoran tamatnya Perang Dingin?

## Masalah Penggunaan Kuasa Ketenteraan dalam *Humanitarian Intervention* di Era pasca Perang Dingin

Walaupun *forcible humanitarian intervention* dikritik hebat dari segi kesesuaian dan keberkesanannya, namun realitinya ia adalah salah satu instrumen PBB yang penting untuk menangani krisis kemanusiaan yang kritikal. Oleh itu, tidak hairanlah *humanitarian intervention* semakin mendapat tempat di kalangan negara-negara Barat di era Pasca Perang Dingin. Mark Hoffman

umpamanya berpendapat bahawa, *although undesirable, unilateral military intervention could be supported...because it may be the only effective option available to stop massive, unwarranted killings*. Manakala Tom J Farer pula berpendapat bahawa, *unilateral intervention might be legitimate where is calculated to cause less damage to target society that would inaction*. Arend and Beck pula menyatakan, *humanitarian intervention should be conducted with a quick military intervention and then withdraw having removed the source of human rights abuses*. Sungguhpun konsep ini diterima baik oleh negara-negara Barat, namun ia tidak dapat mengelakkan daripada beberapa dilema yang wajar diberi perhatian oleh pendokong-pendokongnya dan penggubal dasar. Tiga dilema utama ialah:

### Dilema Politik

Dilema politik ialah isu asas yang dihadapi oleh pembuat dasar. *Forcible or military humanitarian intervention*, sama ada dilaksanakan secara *unilateral* ataupun melalui PBB, pada zahirnya memang bercanggah dengan prinsip kedaulatan Westphalia yang telah di codified dalam Artikel 2(4) dan 2(7) Piagam PBB. Dua pengecualian kepada larangan penggunaan kuasa ketenteraan yang termaktub dalam Piagam PBB ialah:

- Hak sesebuah negara menggunakan kuasa ketenteraan untuk tujuan *self-defense* atau *collective self-defense* di bawah Artikel 51.
- Hak Majlis Keselamatan menggunakan kuasa ketenteraan untuk *maintain or restore international peace and security* dan menangani *act of aggression* di bawah Artikel 42, Charter VII.

China umpamanya, menganggap isu hak asasi manusia sebagai perkara domestic dan negara lain tidak berhak untuk campurtangan. Di sini jelas bahawa persepsi China ialah piagam hak asasi manusia antarabangsa yang disifatkan sejagat oleh Barat adalah hasil daripada kuasa politik (*power politic*) Barat. China bimbang kuasa Barat akan menggunakan isu hak asasi manusia sebagai alasan untuk campurtangan dalam hal ehwal dalaman negara-negara membangun.

Dilema politik yang kedua ialah kekurangan sokongan tempatan di negara yang diharap dapat menyediakan pasukan tentera untuk melaksanakan operasi *humanitarian intervention* yang selalunya menelan kos yang tinggi. Pendapat umum di Amerika Syarikat menimbulkan persoalan apakah kepentingan nasional yang terlibat dan pada umumnya golongan *realist* mahukan agar Amerika Syarikat mengamalkan polisi selektif dalam hal ini agar mereka tidak *overstretch* sehingga menjejaskan kuasa *unipolamya*.

Isu politik lain yang penting ialah masalah perkongsian kos atau bebanan, iaitu perselisihan faham mengenai nisbah kos yang patut ditanggung oleh setiap negara. Isu politik terakhir ialah semua negara mementingkan kepentingan nasional dalam menentukan polisi dan responnya terhadap krisis kemanusiaan.

### Dilema Operasi

Bagi komuniti keselamatan Amerika Syarikat dan Barat, perkara paling utama dalam menentukan kesesuaian penggunaan pasukan tentera ialah objektif politik dan ketenteraan yang jelas. Namun, ketidakjelasan matlamat politik dan ketenteraan dalam *humanitarian intervention* di era pasca Perang Dingin adalah ketara, yang mana pasukan pengaman diarah supaya mempamerkan *posture of impartiality* terhadap musuh yang ganas. Ketidakjelasan matlamat politik dan ketenteraan mengundang kepelbagaian tafsiran terbuka mengenai objektif misi yang sebenar serta menyebabkan arah tuju yang tidak jelas. Keadaan ini akan mengakibatkan *mission creep* dan operasi pasukan pengaman kemudiannya telah berkembang menjadi situasi peperangan atau *warfighting*. Situasi ini membahayakan pasukan pengaman yang hanya dilengkapi senjata ringan sebagaimana berlaku di Somalia dan seterusnya timbul kritikan bahawa penggunaan pasukan tentera dalam humanitarian intervention adalah tidak sesuai.

### Dilema Moral

Sesetengah pemerhati berpendirian bahawa pasukan tentera tidak mampu dari segi moral untuk melaksanakan penugasan kemanusiaan dan tidak



yakin pasukan tentera cukup sensitive terhadap *collateral damage* apabila menghadapi peluang untuk menggunakan kuasa tembakan yang kuat untuk mencapai sesuatu objektif. Golongan ini mengambil contoh jumlah kematian orang awam yang besar yang disebabkan kuasa tembakan yang dahsyat oleh Amerika Syarikat semasa berusaha menyelamatkan anggota Rangers yang terperangkap di Mogadishu pada bulan Oktober 1993 untuk membuktikan hujahnya.

Selain daripada itu, terdapat kritikan bahawa Amerika Syarikat sebagai kuasa *hegemonic* tidak mampu menggunakan kuasa ketenteraan untuk matlamat kemanusiaan sebenar. Sebaliknya golongan ini berpendapat pemimpin Amerika Syarikat memperalatkan *humanitarian intervention* untuk tujuan *power politics* atau untuk memenuhi kepentingan nasional yang sempit. Dalam konteks ini, campurtangan Amerika Syarikat di Haiti dan Bosnia dijadikan contoh.

### Typology Krisis Kemanusiaan

Dilema yang dinyatakan di atas adalah berpunca daripada kekeliruan tentang sifat (*nature*) krisis kemanusiaan itu sendiri. Pada kebiasaannya, kesemua krisis kemanusiaan dikumpulkan dalam kategori yang sama, seolah-olah semua krisis itu adalah sama sifatnya dan memerlukan tindakan ketenteraan yang sama. Kecuali berkongsi satu ciri yang sama, iaitu mengancam *survival* bilangan manusia yang ramai, kesemua krisis kemanusiaan mempunyai perbezaan yang ketara sama ada dari segi sejarah konflik/punca, intensiti, implikasi dan cara penyelesaian. Contohnya, campurtangan ketenteraan di Angola adalah sukar kerana kumpulan-kumpulan pemberontak memiliki senjata canggih dan beroperasi dalam kawasan yang lebih luas, masalah *land mines* dan perang saudara di negara itu adalah isu lama yang berlarutan. Oleh itu, kajian terhadap *typology* sesuatu krisis kemanusiaan adalah penting untuk menangani dilemma yang timbul dan seterusnya merancang pendekatan yang sesuai bagi menghadapinya, termasuk penggunaan pasukan tentera.

Oleh kerana kajian ini adalah untuk menganalisis kesesuaian dan keberkesanan penggunaan pasukan tentera dalam menangani

krisis kemanusiaan dan menerima pandangan Robert J Art bahawa salah satu fungsi kuasa ketenteraan ialah *to compel* dalam konteks *humanitarian intervention*, *to compel change in human behaviour*, maka fokus penulisan ini akan ditumpukan kepada isu setakat manakah kuasa ketenteraan perlu digunakan selaras dengan *degree* mengenai niat jenayah sesuatu pihak yang mengakibatkan krisis kemanusiaan.

Saya berpandangan bahawa pasukan tentera yang kuat adalah sesuai untuk tindakan cepat dan muktamad bagi memberhentikan *genocide*. Dalam kes krisis kemanusiaan yang bercorak *unintended by-product* oleh konflik dalaman seperti di Somalia, pasukan pengaman adalah sesuai ditempatkan untuk penugasan kemanusiaan, dengan syarat tindakan ketenteraan besar-besaran diperlukan sekiranya *impartiality* dan keselamatan pasukan pengaman diancam, anggota pengaman dijadikan tebusan dan dibunuh dengan kejam. Halangan yang disengajakan ke atas misi pengaman memerlukan respon ketenteraan daripada masyarakat antarabangsa, di mana Majlis Keselamatan PBB wajar meluluskan penggunaan kuasa kolektif di bawah Chapter VII Piagam PBB, iaitu *threat to international peace and security* untuk meneutralkan pihak yang terbabit dan menghadapkan pemimpinnya ke muka pengadilan ICJ.

Persoalan timbul di sini bagaimanakah *typology* krisis kemanusiaan ini dapat dipraktikkan supaya misi *humanitarian intervention* dapat dicapai jika dibandingkan dengan operasi *humanitarian intervention* yang lepas. Bahagian seterusnya akan membincangkan pendekatan strategik mengenai penggunaan pasukan tentera dalam misi *humanitarian intervention*.

### Ke arah Pendekatan Strategik Dalam Misi Humanitarian Intervention

Semua polisi *humanitarian intervention* yang digubal oleh masyarakat antarabangsa mestilah berdasarkan kepada perancangan strategik yang realistik dan praktikal. Sifat risiko mesti dikenalpasti secara jelas, objektif politik dan strategik yang jelas, cara (kuasa ketenteraan) mesti dipadankan dengan matlamat (politik), masalah-masalah yang bakal

timbul perlu dijangkakan secara tepat dan perkara yang paling pokok sekali ialah meletakkan krisis kemanusiaan dalam konteks geostrategik.

Prinsip sistem Westphalia ialah melindungi kemerdekaan dan kedaulatan negara bangsa, mengelakkan peperangan melalui norma *non-interference* dan menghalang penghapusan manusia secara sistematik berikutan pengalaman pahit semasa Perang Dunia kedua. Selain daripada nilai, prinsip, peraturan, proses dan institusi, kepimpinan antarabangsa juga penting untuk mengekalkan order dunia di bawah sistem Westphalia. Sejarah membuktikan bahawa kepimpinan sistem adalah penting bagi menjamin kesinambungan dan kestabilan sistem antarabangsa.

Sebagai kuasa tunggal dalam sistem antarabangsa, Amerika Syarikat dengan kerjasama kuasa lain-lain negara perlu memainkan peranan utama dalam usaha mempertahankan order dunia daripada sebarang ancaman, termasuk krisis kemanusiaan. Kesediaan Amerika Syarikat menggunakan kuasa ketenteraan, walaupun kepentingan nasional menjadi pertimbangan utama adalah kritikal untuk memastikan kejayaan sesuatu *humanitarian intervention*. Kejayaan NATO di Kosovo adalah testimoni kepimpinan Amerika Syarikat dalam mengekalkan order dunia.

Memang diakui bahawa terdapat halangan dalam sumber dan tiada negara, sekalipun mempunyai kekuatan ekonomi dan ketenteraan yang tiada tandingannya mampu menangani semua krisis yang berlaku. Oleh itu, masyarakat antarabangsa wajar mengamalkan pendekatan selektif dalam menangani krisis kemanusiaan. Dalam hal ini, pendekatan ini perlu melalui proses bagi menentukan keutamaan berdasarkan *degree* niat jenayah manusia sesuatu krisis. Krisis kemanusiaan yang paling buruk seperti *genocide* perlu ditangani terlebih dahulu kerana pertimbangan moral dan keselamatan.

Di samping itu, keberkesanan penggunaan kuasa ketenteraan adalah lebih nyata sekiranya ia digabungkan dengan instrumen yang lain seperti sekatan ekonomi, diplomatik dan undang-undang antarabangsa. Namun, ancaman diplomatik, sekatan ekonomi dan tribunal jenayah perang tidak harus menjadi pengganti kepada penggunaan

kuasa ketenteraan kerana amaran lisan dan tindakan undang-undang jarang berkesan tanpa disokong oleh kuasa ketenteraan.

Memang diakui bahawa kedaulatan dan *non-interference* adalah prinsip penting, tetapi perlu juga diakui bahawa tiada norma atau hak yang mutlak sepanjang masa dan sistem antarabangsa juga adalah tidak statik dan mengalami perubahan yang berterusan. Tambahan pula hak kedaulatan tidak memberi hak untuk melakukan *genocide*. Oleh itu, *military humanitarian intervention* adalah instrumen yang sesuai dan berkesan dalam situasi hak asasi manusia sejagat mengatasi hak kedaulatan negara.

## PENUTUP

Krisis kemanusiaan berlaku secara mendadak dan semakin kerap dalam era pasca Perang Dingin. Berdasarkan trend semasa, adalah dijangkakan krisis ini akan terus berlaku di masa akan datang. Kesilapan di Somalia, Rwanda dan Bosnia menjadi pengajaran kepada masyarakat antarabangsa untuk memahami dengan jelas tentang perbezaan sifat (*nature*) krisis kemanusiaan sebelum menentukan kesesuaian dan keberkesanan penggunaan kuasa ketenteraan. Kajian *typology* ke atas setiap krisis kemanusiaan berdasarkan *degree of human intention* dapat membantu mengkategorikan krisis mengikut sejarah konflik/punca, intensiti, implikasi kepada keamanan dan keselamatan dunia, penyelesaian konflik dan menentukan kesesuaian serta peranan penggunaan kuasa ketenteraan. Dengan menggunakan pendekatan keutamaan, iaitu memilih kes yang paling buruk untuk operasi *military intervention* membolehkan strategi *humanitarian intervention* yang menggabungkan keprihatinan terhadap isu hak asasi manusia dan keselamatan serta dapat mengatasi masalah-masalah yang timbul semasa penggunaan kuasa ketenteraan seperti yang diterangkan di atas.

Penggunaan kuasa ketenteraan dalam *humanitarian intervention* mesti mematuhi prinsip *proportionality*, *necessity* dan mengelakkan kemalangan jiwa serta kesengsaraan kepada *non-combatant* serta menghalakan sepenuhnya kepada usaha meneutralkan pihak yang menimbulkan masalah serta mengembalikan

keamanan dan keselamatan negara sasaran. Campurtangan ketenteraan wajar diberhentikan segera dan mengembalikan kedaulatan kepada negara yang menjadi sasaran campurtangan, selepas memperoleh jaminan yang boleh dipercayai bahawa tindakan *genocide* tidak akan diulangi serta menyatakan hak untuk campurtangan semula jika keadaan memerlukan.

Selain daripada itu, hak menggunakan kuasa ketenteraan untuk *humanitarian intervention* mesti dihadkan kepada kes-kes pencabulan hak asasi manusia yang kritikal. Penggunaan kuasa ketenteraan adalah penting dalam keadaan seumpama itu, bukan sahaja sesuai dengan doktrin *just war*, malah untuk memenangi keyakinan masyarakat antarabangsa terhadap sistem antarabangsa yang berasaskan kepada Westphalia. Dalam hal ini, undang-undang antarabangsa

hendaklah sentiasa menjadi pilihan alat polisi bagi membezakan di antara *humanitarian intervention* dan *aggression*.

Kesimpulannya, penggunaan kuasa ketenteraan untuk misi kemanusiaan adalah sukar, bahaya dan jarang mendatangkan faedah politik yang diharapkan, tetapi instrumen ini tetap penting dan terus diaplikasikan. Oleh itu, kajian yang teliti terhadap sesuatu krisis diperlukan untuk memastikan penggunaan kuasa ketenteraan adalah sesuai dan berkesan. Campurtangan ketenteraan hendaklah ditumpukan kepada krisis kemanusiaan yang kritikal, di mana campurtangan tersebut tidak mungkin mewujudkan persaingan kuasa-kuasa besar dan misi boleh dirancang untuk menghasilkan keputusan yang efektif dengan risiko rendah kepada pasukan tentera yang campurtangan.

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Lt Kol Saiful Anwar bin Md Ali (Bersara) telah ditauliahkan ke dalam Rejimen Askar Melayu DiRaja pada 23 Feb 1985. Beliau pernah memegang berbagai jawatan dalam pasukan, Kor dan Markas Formasi serta jurulatih di ATMA. Beliau memiliki Diploma Lanjutan Pengajian Strategi dan Keselamatan (UKM), Diploma Strategi dan Pertahanan (UM) serta pemegang Ijazah Sarjana dalam bidang Kajian Dasar dan Keselamatan dari UKM. Beliau kini telah bersara dan bertugas sebagai Pensyarah Kanan, Fakulti Sains Pentadbiran & Pengajian Polisi di Universiti Teknologi Mara, Kampus Kota Semarahan, Sarawak.





# Ordnance



## PARTNERSHIP IN DEFENCE





By Lt Kol Surjeet Singh Jeggy

### SYNOPSIS

The Critical Period Hypothesis claims that there is a biological timetable whereby children acquire language more easily than adults. Initially this notion was connected to first language(L1) acquisition but over time this hypothesis was also related to second language(L2) acquisition. This also means that children are better in acquiring L2 and possibly L3 when compared to adults. However, there have been researchers who say this is not so as there are many other factors that affect language learning.

The author does a thorough discussion on this hypothesis by looking at it from various hypotheses such as brain plasticity, cerebral dominance and the cognitive aspect. The author also looks at other factors affecting language learning such as the affective variables, nature of input, time and the differences between language learning in adults and children. He has thus reached a conclusion that the Critical Period Hypothesis remains very much a hypothesis at the present time.

### INTRODUCTION

There have been many studies and statements made that children acquire language more easily than adults as there is a biologically determined period of life when language can be acquired known as the Critical Period Hypothesis. The hypothesis claims that there is such a biological timetable.

Initially the notion of a critical period was connected only to first language acquisition. Pathological studies of children who acquired their first language, or aspects thereof, became fuel for arguments of biologically determined predispositions, timed for release, which would wane if the correct environmental stimuli were not present at the crucial stage.

One popular belief about second language acquisition is that younger is better, that younger acquirers are better at second language acquisition

than older acquirers. In other words, children are better than adults at acquiring language. There is definitely a lot of research that has been done on this subject and the findings have been inconsistent some showing older, others showing younger performers to be superior (Walburg et al. 1978; Mc Laughlin 1977).

The purpose of this paper is to discuss the advantages that children generally have over adults and vice-versa if any. Furthermore the researcher also intends to highlight pertinent points whereby adults are said to have an advantage but do not use it to maximize the learning of a language. The age of puberty is used to distinguish between children, adolescents and adults.

The paper also shows that children generally have more things working for them in acquiring a language. The paper also intends to show that adults and older children in general initially acquire



the second language faster than young children, but child second language acquirers will usually be superior in terms of ultimate attainment, thus giving credence to the critical period hypothesis.

There are many arguments for and against child dominance over second language learning as compared to adults. In order to come a certain conclusion, we have to look into neurological factors based on the brain plasticity and cerebral lateralization, the cognitive factors, the affective variables, the input and the environment, comparisons between adult language learning and child language learning and lastly essence of time as an important variable.

### THE BRAIN PLASTICITY HYPOTHESIS

According to Penfield (in Penfield and Roberst, 1959) the child's brain is plastic compared to an adult. Before age of nine to twelve, he maintains.

*'a child is specialist in learning to speak. At that age he can learn two or three languages as easily as one. After the age of nine however for the purpose of learning languages, the human brain becomes progressively stiff and rigid'.*

(Penfield & Roberts, 1959: 235-236)

He also says that the secret of child success in L2 learning is a switch mechanism – a conditioned reflex that works in his brain automatically.

A number of people have thrown caution to the pathological kind of evidence that Penfield cites to L2 learning as his neurological argument is based mainly on his clinical studies of aphasia. (Genesee 1978: Jakobovits 1970, Lamendella 1977).

### CELEBRAL DOMINANCE

A well-known hypothesis is that there are clear neurological differences between child and adult brains and that these differences are directly responsible for child-adult differences in language acquisition. This was the critical period hypothesis as advanced by Eric Lenneberg (1967). He argued

that natural language acquisition by mere exposure can take place only during the critical period, which he set as occurring between the ages of 2 and puberty. The brain has not developed the capacities it needs for language acquisition earlier and after puberty the brain has lost its cerebral plasticity because of the completion of the process of cerebral dominance or the lateralization of the language function.

Lenneberg did not deny that language learning was possible after puberty but automatic acquisition from exposure to a second language seems to disappear after puberty due to 'language learning blocks'. Some questions however have been raised about Lennerberg's account of the process of lateralization. On reanalyzing some of the clinical data cited by Lennerberg, Krashen (1973) concluded that lateralization must be complete by 5, and that while a biologically based critical period may exist, it does not coincide with the development of lateralization.

### THE COGNITIVE HYPOTHESIS

There have been some attempts to relate "linguistic puberty to an event in the development of cognition the onset of what Piaget has labeled formal operations, which generally occurs at around 12. At this time according to Piaget, the child becomes able to think abstractly, that is, he or she is able, for the first time, to relate abstract ideas to each other without recourse to concrete objects. Because of greater cognitive maturity, it has been argued, older learners may have an ability to learn some aspects of an L2 more efficiently than younger learners (Ausubel 1964; Burstal et al. 1974).

Taylor (1974) also says that "its seems logical to assume that the adult's more advanced cognitive maturity would allow him to deal with the abstract nature of language better than children. Taylor suggests that cognitive differences between children and adults could not account for observed child-adult differences, since adults do not have a cognitive deficiency but rather have a cognitive superiority. He gives reasons of affective variables such as lack of motivation and absence of positive attitude towards the target language and culture

as the underlying cause for the “lack of uniform success in adult second language acquisition”.

There are many reasons given as to why an adolescent or an adult should be more ready to acquire a language. Firstly the formal thinker can have ideas about ideas” (Ausubel 1962). In addition, the formal thinker has a meta-awareness of this developing system of abstractions: “the adolescent seems to reflect on the rules he possesses and on his thoughts” (Developmental Psychology Today 1971; p. 336). The adolescent organizes his operations into higher order operations, ways of abstracting rules to solve a whole class of problems. Finally Elkind (1970) notes that the formal thinker can “conceptualize his own thought . . . take his mental constructions as objects and reason about them”.

Just as formal operations apparently do not occur in all people, all second language performers do not utilize conscious rule learning (Krashen 1978). Several scholars have argued that cognitive differences between children and adults should predict that the adult is better at second languages than children are. We will look at empirical findings later to see if this is true.

## AFFECTIVE VARIABLES

Research on the affective domain in second language acquisition has been mounting steadily for a number of years and this idea is popular one. Schumann (1975) has examined a number of affective variables such as culture shock, instrumental and integrative motivation, empathy and ego-permeability; and concludes that it may be even more important than neurological maturation in accounting for difficulties in adult language learning. He states:

*“in children, the initiating factors are generally favorably tuned or at least sufficiently neutral so that when exposed to the target language, the child’s cognitive processes will function to produce language learning. In adults, however, the development of firm ego boundaries, attitudes and motivational orientations which is concomitant with social and psychological maturation places constraints on the initiating*

*factors such that they may block or at least inhibit the cognitive data to which the adult is exposed”.*

(Schumann, 1975: 231 – 32)

Affective factors have been attributed for the superiority of children’s language acquisition when compared to that of their parents in the case of the immigrant child. They can be summed up as follows:

- The child is more exposed to the language than the adult.
- Children are more highly motivated than their parents are.
- Less is demanded of the child in achieving linguistic competence – constructions are simple, vocabulary relatively small – when compared with what is achieving linguistic competence – when compared with what is necessary for an adult to speak at an adult’s level of competence.
- The attitude is more positive to the language than an adult.

Thus it can be seen that the affective variables do have quite an effect on language acquisition especially in adults as the development of firm ego boundaries and a sense of cultural identity place constraints on language learning that are not found in the child.

## NATURE OF INPUT

The nature of input too affects language acquisition which is generally more favorable to the child. Macnamara (1973, 1974) maintains that a vital ingredient in children’s successful language learning in the nursery and the street is their involvement in real communication with members of the target language group. This ingredient is normally missing in the foreign language classroom where adults learn.

For Krashen, natural comprehensible input which focuses on communication rather than the

code had become “the fundamental principle” in L2 acquisition:

*“people acquire second languages when they obtain comprehensible input and when their affective filters are low enough to allow the input in. In other words comprehensible input delivered in a low filter situation is the only causative variable in second language acquisition. All other factors thought to encourage or cause second language acquisition only work when they provide comprehensible input”.*

(Krashen, 1981b : 8)

Krashen also says that although the adult may get sufficient quantities of input, it does not all become intake. Scarcella and Higa argue that the difference between children and older learners in the input they invite provides a rationale for more rapid progress by older learners in early L2 acquisition.

## LANGUAGE LEARNING IN ADULTS AND CHILDREN

There is a lot of debate as to whether an adult learning a second language with formal instruction learns that language in the same way that a child acquires a first language in the natural environment. Those authors who accept the critical period notion usually favor the view that second language learning in adults is qualitatively different from first language learning. The child is thought to process language in manner different from and superior to the way an adult processes language (Anderson 1969; Echeverria 1971). The child processes language in terms of a preprogrammed linguistic coding ability; the adult processes language in terms of general coding ability. If a new language is learned in adulthood, it must be filtered through the learning acquisition system of the individual, modified by the first language (Stern, 1970) The older the individual is, the more rules and habits of the first language interfere with learning a second language.

On the other hand, there are a number of authors who maintain that language learning in childhood and second language learning in adulthood essentially the same processes (Cooper

1970; Corder 1967; Macnamara 1973; Newmark & Reibel, 1968; Roberts, 1973). They admit that there are differences but argue that these are mostly quantitative differences and do not constitute differences in kind.

Thus, those who view language learning in processing terms, as a series of strategies employed by a changing language acquisition system tend to see no need to posit a qualitative difference between first language acquisition and second – language learning in adults. The basic features of the language acquisition system remain the same, although input conditions may be different for adults and children (Ervin-Trip, 1973a, 1981).

Taylor says that both adults and children over generalize target language rules, reduce grammatical redundancies, and omit those rules that they have not learned, presumably because of their apparent arbitrariness. What differences exist are thought to be quantitative in nature, resulting from greater cognitive maturity of the second-language learner and from social and affective factors. In processing terms, first language acquisition and second-language learning are seen to be identical, as evidenced by the kind of errors observed. (Taylor 1974).

## TIME AS VARIABLE

There is also a lot of discussion on the importance of time as a variable in L2 acquisition. The age at which a child starts learning a language is not important but what is important is the time spent on learning a language. Thus Carroll said that the amount of competence one achieves is largely a matter of time spent in learning, rather than the actual age of starting.

There is also a hypothesis that immigrant children who come into the country at an earlier age are better in language acquisition than children who come in at an older age. On the other hand, Burstall et al (1974: 123) agreed that: “the achievement of skill in a foreign language is primarily a function of time spent studying that language” but, they maintain, it is “also affected by the age of the learner, older learners tending to be more efficient than younger one”.



## IS THERE REALLY A CRITICAL PERIOD

The critical period hypothesis, is supported by Chomsky (1965) and McNeill (1966) because it is at the same time closely compatible with a transformational – generative theory of language acquisition, which stresses the richness and uniqueness of an innate language faculty. As said earlier, Krashen (1973) suggests that completion of lateralization occurs much earlier, possibly by age of 5, and this he did by reanalyzing Basser's data on unilateral brain damage in children.

"There does seem to be an emerging consensus, however, that the critical period hypothesis, as originally formulated is not supported by the available evidence (Ekstrand 1979; Kinsbourne 1981; Walsh & Diller 1981). Many authors favour an approach based on social and cultural, rather than on biological factors (HD Brown, 1980a; Gardner, Smythe, Cclement, & Gliksmann 1976; Snow-Hoefnagel-Hohle 1978).

Schuman (1978) presented an 'acculturation model for L2 acquisition in which he stresses social factors (eg. social dominance patterns, group integration strategies enclosure, cohesiveness, cultural congruence) as equal in importance to affective ones in determining the degree to which the L2 is acquired. He stated the following:

*Any learner can be placed in a continuum that ranges from social and psychological distance to social and psychological proximity with speakers of the target language, and that the learner will acquire the second language only to the degree that he acculturates.*

(Schumann, 1978:29)

## CONCLUSION

From the above discussion, it can be seen that generally children and adults do not have much differences in language learning and yet children get a faster grasp of the overall language. Children generally have less factors working against them, have a positive attitude, adapt culturally better than adults and get the right input for language learning.

As Krashen put it, the adult is still an excellent acquirer when he or she is provided with the input he or she needs for acquisition in a situation where the filter is "low". The classroom may be an excellent place to provide such a situation, as long as it satisfies both the acquirer's purely linguistic needs (comprehensible input) as well as his or her affective needs. If the latter needs are not met, if the student is "on the defensive" (Stevick 1976) and the filter is "up", the best input will be ineffective. If the filter is down, the adult can regain many of the advantages the child enjoys.

Personally, the researcher feels that although children seem to be able to pick up a language faster than adults, the critical period hypothesis remains very much a hypothesis at the present time. The evidence of functional localization based on recent research seems to rule out a strict lateralization model according to McLaughlin.

The classic argument is that the critical period for second language acquisition occurs around puberty, beyond which people seem to be relatively incapable of acquiring a native like accent of the second language. This has led some to assume, incorrectly, that by the age of 12 or 13 you are "over the hill" when it comes to the possibility of successful second language learning. We have to take into account other factors in language learning such as neurological, psychomotor, cognitive, affective and linguistic considerations as discussed in the paper to get a full account of second language learning.

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Oleh Lt Kol Ya'cob bin Hj Samiran

### SINOPSIS

Pada hari ini kesedaran terhadap pembangunan kreativiti telah diabaikan dan tidak menjadi keutamaan di dalam pembangunan sumber manusia. Akibat daripada pengabaian ini, di dapati ramai pemimpin dan organisasi menghadapi masalah terhadap keupayaan pegawai serta anggota yang dipimpinnya. Mereka tidak berupaya untuk menyumbang idea, menyelesaikan masalah yang mudah dan sering menunggu arahan yang sememangnya telah wujud dalam organisasi mereka.

Pembangunan kreativiti sepatutnya terus diperkasakan kerana ia terbukti menyumbang ke arah peningkatan kemahiran individu dan organisasi. Apabila pegawai dan anggota pimpinannya memiliki daya kreativiti yang tinggi, mereka berupaya untuk mencipta kaedah-kaedah baru yang lebih realistik dan dapat menyelesaikan sesuatu permasalahan dengan sempurna.

Terdapat beberapa teknik, pendekatan dan strategi yang boleh dilakukan untuk membangunkan kreativiti di kalangan pemimpin. Pendekatan yang sistematik boleh digunakan sebagai panduan untuk melatih seorang pemimpin memahami dan menilai masalah dengan sempurna termasuk melihat masalah yang tidak dapat dilihat oleh orang lain. Adalah wajar pembangunan kreativiti ini dilestarikan agar pemimpin dan subordinatnya mampu menghasilkan idea yang bernas serta membantu organisasinya mencapai kejayaan cemerlang.

### PENDAHULUAN

Ramai pemimpin mengeluh kerana terdapat di kalangan pegawai dan anggota yang dipimpinnya tidak mampu untuk melaksanakan tugas dan tanggungjawab dengan sempurna dan lancar. Keluhan mereka banyak berkisar tentang kemandulan idea, kekurangan kreativiti, tidak ada imaginasi dan inovasi. Kekurangan ini telah menyebabkan prestasi pegawai dan anggota bawahan mereka tidak mencapai tahap maksimum serta tidak menyerlah. Apa yang mereka mahukan adalah pegawai dan anggota yang bukan sahaja berperanan untuk menyumbangkan imaginatif, kreativiti dan inovatif. Pegawai dan anggota yang kreatif dapat menghasilkan idea yang berguna untuk membantu organisasinya mencapai kejayaan yang cemerlang.

Adakah kreativiti boleh diajar atau sememangnya seseorang itu dilahirkan kreatif? Ramai yang berpendapat bahawa kreativiti tidak boleh diajar. Sememangnya tidak dinafikan bahawa setiap individu mempunyai perbezaan yang besar dari segi daya kreativiti semulajadi dan kecenderungan pengaruh ke arah kreativiti. Walau bagaimanapun, tidak mustahil bagi setiap individu untuk menjana daya kreativiti, produktiviti yang kreatif serta mampu menggunakan daya kreatif yang telah dikurniakan semaksimum yang mungkin. Dalam artikel ini penulis akan membincangkan bagaimana pemimpin boleh membangunkan kreativiti dan menggunakannya semaksimum yang mungkin untuk meningkatkan potensi organisasi mereka.



## DEFINISI KREATIVITI

Menurut Kamus Dewan, kreativiti bermaksud sebagai kemampuan atau kebolehan mencipta atau daya kreatif. Ini bermakna kreativiti merupakan kelebihan yang dimiliki oleh individu mencipta kaedah baru atau cara baru yang berbeza daripada kebiasaan. Tujuannya adalah untuk memperoleh hasil yang lebih baik atau menyelesaikan sesuatu masalah. Oleh kerana ia merupakan satu kaedah baru maka kreativiti ini akan melibatkan kesediaan untuk melakukan perubahan di dalam melaksanakan sesuatu tugas atau menangani sesuatu permasalahan yang dihadapi sama ada di peringkat individu atau organisasi.

Kreativiti terhasil daripada tiga elemen utama iaitu individu yang memiliki kemahiran, pengalaman dan pengetahuan. Individu yang berkebolehan dan mempunyai keyakinan mampu untuk membantu pemimpin menyelesaikan masalah, merebut peluang-peluang yang ada, membangunkan idea baru dan mengambil faedah daripada sesuatu yang difikirkan sudah tidak berguna lagi.

## KEPENTINGAN KREATIVITI DALAM MEMBANGUNKAN ORGANISASI

Kreativiti memainkan peranan penting di dalam memperkasakan organisasi. Kreativiti membolehkan pemimpin membuat keputusan dengan memahami dan menilai masalah secara terperinci, termasuk melihat masalah yang mana pihak lain tidak melihatnya. Oleh itu, kreativiti akan mendatangkan pelbagai kelebihan kepada organisasi. Antaranya ialah:

- **Mewujudkan Hala Tuju yang Jelas.**

Kreativiti seorang pemimpin boleh membantu organisasi mengadakan hala tuju yang jelas untuk mencapai matlamat yang diinginkan. Seorang pemimpin yang cekap akan memikul tanggungjawab dan tahu peranan yang perlu dimainkan dalam organisasi. Pemimpin yang kreatif dapat membantu menjelaskan tentang matlamat individu dan pasukan. Ia seterusnya, membantu melaksanakan penilaian terhadap pencapaian dengan lebih berkesan. Pemimpin yang kreatif juga tidak akan menyalahkan pihak lain sekiranya berlaku sebarang

masalah sebaliknya berusaha mencari jalan penyelesaiannya.

- **Memberi Tunjuk Ajar dan Sokongan.**

Pemimpin yang memiliki kreativiti yang tinggi biasanya akan memberi tunjuk ajar dan sokongan kepada anggotanya. Ini kerana tunjuk ajar dan sokongan akan membantu meningkatkan prestasi pegawai dan anggotanya mencapai matlamat organisasi. Pemimpin yang berjaya mewujudkan suasana kerja bersama-sama, saling membantu antara satu sama lain akan menghasilkan kerja yang lebih memuaskan. Selain itu, kreativiti seorang pemimpin akan membantu mewujudkan hubungan yang erat antara pemimpin dan pihak bawahan seperti berkongsi idea apabila menyelesaikan masalah.

- **Menggalakkan Komunikasi Terbuka.**

Pemimpin yang kreatif akan membentuk suasana terbuka iaitu kesediaan untuk menerima teguran dan cadangan apabila berkomunikasi dengan pegawai dan anggota yang dipimpinnya. Pemimpin yang berkemahiran dan kreatif dalam berkomunikasi akan sentiasa berusaha mewujudkan hubungan atau interaksi dua hala bagi mencapai matlamat yang dikehendaki. Seorang pemimpin yang cemerlang akan sentiasa memberi peluang kepada anggota pimpinannya memberi cadangan atau mengeluarkan idea untuk memperbaiki mutu kerja atau suasana kerja. Peluang yang diberikan tidak akan disia-siakan kerana mereka tahu akan mendapat sokongan dan galakan daripada pemimpin. Pegawai dan anggota akan hilang minat sekiranya sentiasa dikritik.

- **Memilih Anggota yang Sesuai.**

Pemimpin yang mempunyai daya kreativiti yang tinggi akan mencari dan memilih pegawai serta anggota yang terbaik dari segi kemahiran. Pegawai dan anggota yang layak akan membantu pemimpin menyempurnakan wawasan dan matlamat organisasi. Apabila pegawai dan anggota mempunyai kriteria yang diperlukan, ia memudahkan sesuatu tindakan yang akan diambil seperti dalam pembahagian tugas, latihan dan pengurusan, penilaian terhadap pencapaian dan kenaikan pangkat.

- Menggalakkan Idea Baru. Pemimpin perlu menggalakkan anggota pimpinannya untuk menunjukkan inovasi dan memikirkan idea baru agar dapat membantu organisasi mencapai matlamat atau visi. Pemimpin perlu sedar bahawa anggota pimpinannya merupakan aset penting di dalam memperkasakan organisasi untuk mencapai matlamat yang diingini.

## KEMAHIRAN PEMIMPIN DALAM MEMBANGUNKAN KREATIVITI

Pemimpin yang kreatif mesti mempunyai kemahiran yang tersendiri untuk menjalankan tugas dan tanggungjawabnya dengan sempurna. Kreativiti pemimpin dapat dilihat melalui kemahiran membuat keputusan dan berkomunikasi. Daya kreativiti yang tinggi akan membantu pemimpin membuat keputusan. Mereka perlu menggabungkan idea-idea yang unik atau melakukan sesuatu di luar kebiasaan. Kreativiti membolehkan pemimpin memahami dan menilai masalah dengan sepenuhnya, termasuklah dapat melihat masalah yang tidak dapat dilihat oleh pihak lain. Pemimpin yang kreatif tidak beranggapan bahawa idea-idea baru yang dikemukakan adalah salah, sebaliknya idea itu disesuaikan dengan keadaan dan kehendak tertentu. Dengan ini, keputusan yang tepat dan fleksibel dapat dihasilkan.

Kemahiran komunikasi merupakan kemahiran yang penting dalam pembangunan kreativiti. Komunikasi mempunyai empat fungsi utama dalam sesuatu pasukan atau organisasi iaitu kawalan, motivasi, meluahkan emosi dan menyampaikan maklumat (Robbins, 2001). Pemimpin mestilah kreatif semasa berkomunikasi dengan anggota yang dipimpnnya. Komunikasi yang berkesan memainkan peranan penting untuk membuat keputusan yang tepat. Pemimpin yang kreatif perlu mewujudkan pergaulan secara terus dengan pegawai dan aggotanya dalam situasi formal ataupun tidak formal. Dengan ini, anggota pimpinannya akan lebih mudah didekati dan seterusnya maklumat dapat diperoleh dengan cepat dan mudah. Selain itu, komunikasi dua hala antara mereka adalah penting untuk mengetahui tindak balas daripada kedua-dua belah pihak.

## SEBAB-SEBAB KEKURANGAN KREATIVITI DALAM ORGANISASI

Persekitaran tempat kerja mempunyai pengaruh yang kuat terhadap pembangunan kreativiti. Ia termasuklah prosedur kerja, keputusan, jenis insentif dan hukuman, gaya komunikasi, peralatan, rakan sejawat dan lain-lain lagi. Terdapat pemimpin yang berasa terancam oleh kekuatan kreativiti yang dimiliki oleh pegawai dan anggota mereka. Pemimpin kerap melakukan perkara-perkara yang mematahkan semangat pembangunan kreativiti. Antara alasan-alasan yang menyebabkan kurangnya kreativiti di tempat kerja adalah:

- Pemimpin menganggap bahawa idea-idea dan cadangan-cadangan kreatif akan mengancam kedudukan mereka. Idea-idea tersebut akan membahayakan kedudukan dan mengancam keselesaan mereka. Oleh itu, mereka akan menentang idea-idea baru yang dirasakan dapat mengganggu-gugat kedudukan mereka.
- Terdapat pemimpin yang tidak berapa suka kepada pegawai dan anggota seliaannya yang sangat kreatif. Mereka berpendapat pegawai dan anggota sedemikian berpotensi untuk berpindah ke organisasi lain kerana bakat mereka sentiasa dalam pemerhatian.
- Terdapat di kalangan pemimpin yang menganggap kreativiti akan menyusahkan organisasi mereka. Ini kerana organisasi yang kreatif sukar membuat ramalan terhadap penugasan mereka kerana mudah berubah-ubah. Mereka merasakan bahawa kreativiti ini akan menjadikan pasukannya sentiasa beroleh penugasan yang lebih mencabar.

Faktor-faktor di atas berlaku kerana terdapat pemimpin yang kurang faham berkenaan fitrah kreativiti dan betapa pentingnya orang yang kreatif dalam organisasi. Daya kreativiti boleh dipertingkatkan melalui langkah-langkah berikut:

- Berikan lebih kebebasan kepada pegawai dan anggota untuk melakukan kerja secara

berbeza. Galakkan mereka membuat pelbagai percubaan untuk memudahkan lagi kerja-kerja harian yang dilakukan. Galakkan mereka supaya berani mengambil risiko dan menguruskan risiko itu secara rasional.

- Beri dorongan kepada anggota seliaanya untuk mencipta projek-projek baru. Berikan bantuan kepada mereka untuk menjayakan projek-projek tersebut. Hapuskan suasana yang suka menghukum pegawai dan anggotanya yang melakukan kesilapan dalam aktiviti kreatif yang mereka usahakan. Hukuman akan menimbulkan rasa tidak puas hati dan akan mematikan kreativiti.

- Kurangkan pengawasan atau kawalan terhadap pegawai dan anggota di bawah pimpinannya. Pengawasan yang terlalu kerap akan menjadikan mereka kurang kreatif. Sentiasa memperkasakan tugas dan tanggungjawab kepada pegawai dan anggota pimpinannya. Proses memperkasakan akan membuka peluang kepada mereka untuk belajar daripada kesilapan serta dapat menonjolkan diri melalui kemajuan yang dicapai.

- Sasaran kerja anggota di bawah seliaanya perlu dinilai dari semasa ke semasa. Sasaran kerja yang realistik akan menghasilkan produktiviti yang lebih tinggi. Sentiasa memperbaiki sistem maklum balas agar pemimpin mendapat maklumat yang betul dengan serta-merta apabila berlakunya sesuatu masalah. Libatkan semua orang yang berkaitan apabila membuat sebarang keputusan.

- Memberi galakkan kepada setiap pegawai dan anggota supaya berinteraksi dengan pegawai dan anggota dari organisasi lain. Mereka patut diberi peluang untuk berinteraksi dengan semua orang untuk mendapatkan pelbagai idea dan maklum balas. Selain itu, galakkan mereka supaya mengemukakan idea-idea secara bebas dan tanpa rasa takut. Jangan tunjukkan rasa lucu, sinis, menghina dan prejudis sewaktu mendengar mereka menerangkan idea-ideanya.

Budaya organisasi yang tidak menggalakkan pembangunan kreativiti kepada pegawai dan

anggotanya akan sukar mencapai kecemerlangan. Pemimpin perlu diberi lebih banyak pendedahan tentang kepentingan kreativiti kepada organisasi. Memang menjadi fitrah bahawa kreativiti mengkehendaki adanya kesanggupan mengambil risiko. Pemimpin tidak boleh menolak kemungkinan bahawa anggota yang memperkenalkan kreativiti akan menimbulkan pelbagai masalah baru yang tidak diduga akan terjadi. Oleh kerana budaya organisasi terutama dalam ketenteraan selalunya bersifat negatif terhadap kreativiti, inovasi dan kesilapan-kesilapan baru menyebabkan pegawai dan anggota tidak mahu tampil ke depan untuk memperkenalkan kreativiti-kreativiti baru.

Ada kalanya pemimpin mengkehendaki pegawai dan anggota pimpinannya supaya berfikir kreatif dan inovatif tetapi pada masa yang sama mereka tidak mahu mendengar apa-apa masalah yang timbul hasil daripada kreativiti yang dibangunkan. Oleh itu, mereka sanggup melakukan apa sahaja untuk tidak melakukan kesilapan dan tidak mahu mengemukakan idea-idea kreatif mereka kepada pemimpin. Terdapat beberapa faktor yang menyebabkan kreativiti dan inovatif dalam organisasi tidak berkembang. Antaranya ialah:

- Di kalangan pemimpin sendiri, mereka saling mencurigai dan saling tidak menghormati dalam kerjasama untuk membangunkan kreativiti. Mereka bimbang kreativiti yang dimiliki oleh seseorang mampu menyisihkan pihak lain.
- Pemimpin sibuk bermain politik pejabat dengan mengutamakan agenda peribadi yang tersembunyi.
- Demi kepentingan, keegoan dan rasa sifat ketuanan yang dimiliki oleh pemimpin menyebabkan mereka sanggup memperlekehkan pandangan yang diberikan oleh anggotanya.

#### **LANGKAH-LANGKAH DALAM PEMBANGUNAN KREATIVITI DI DALAM ORGANISASI**

Ramai pemimpin yang berdepan dengan masalah kegagalan pegawai dan anggotanya mencapai sasaran kerja yang telah ditetapkan. Memang sedia difahami bahawa pegawai dan



anggota merupakan aset yang menjana organisasi ke arah pencapaian matlamat yang telah ditetapkan. Tetapi pemimpin juga berdepan dengan persoalan tentang bagaimana hendak mendorong pegawai dan anggota di bawah pimpinannya supaya menjalankan tugas dengan bersungguh-sungguh, cekap, boleh diharapkan, produktif dan terus meningkatkan diri dari semasa ke semasa.

Satu lagi persoalan yang biasa dihadapi oleh pemimpin dalam membangunkan kreativiti ialah masalah berkaitan dengan pencapaian pegawai dan anggotanya yang tidak menentu kerana dipengaruhi oleh emosi sehingga tidak dapat diduga tingkah laku mereka. Perlakuan yang sebegini bukan sahaja menyukarkan pemimpin memantau pencapaian dan produktiviti mereka, malah dalam keadaan-keadaan tertentu, perlakuan itu melibatkan masalah disiplin dan kemungkinan tindakan-tindakan tegas terpaksa diambil sehingga dapat menjejaskan pembangunan kreativiti itu sendiri.

Daya kreativiti dan inovasi pegawai dan anggota dapat dipertingkatkan melalui langkah-langkah yang dicadangkan seperti berikut:

- **Memberikan Maklumat yang Tepat.**

Pegawai dan anggota akan lebih mudah dan komited menjalankan kerja mereka jika mereka mempunyai maklumat yang mencukupi mengenai kerja yang mereka lakukan. Oleh itu, pemimpin perlu memaklumkan kepada mereka matlamat sesuatu tugas, bagaimana tugas tersebut patut dijalankan, apakah piawaian yang ditetapkan dan bila tugas tersebut patut disiapkan. Pegawai dan anggota yang tidak dibekalkan dengan maklumat tersebut bukan sahaja tidak akan dapat menjalankan kerja dengan baik, tetapi juga akan cepat berasa kecewa dan merasakan pekerjaan mereka sesuatu yang membebankan.

- **Maklum Balas yang Berterusan.**

Seorang pemimpin yang kreatif akan sentiasa memberikan maklum balas kepada pegawai dan anggotanya mengenai pencapaian tahap prestasi mereka. Tanpa maklum balas yang berterusan pegawai dan anggota tidak akan mengetahui samada mereka telah menjalankan tugas yang dikehendaki oleh pemimpin. Mereka tidak dapat melihat bagaimanakah prestasi

kerja mereka dan sudah pasti mereka tidak akan seronok untuk melaksanakan tugas.

- **Minta Pendapat Mereka.** Seorang pemimpin yang cemerlang juga akan berusaha untuk melibatkan pegawai dan anggotanya dalam proses membuat keputusan terutama yang melibatkan matlamat jangka panjang organisasi dan tugas-tugas yang mereka lakukan. Mereka perlu diberikan peluang untuk menyatakan pendapat mereka tentang sesuatu perkara yang berkaitan dengan tugas yang mereka jalankan. Galakkan mereka memberi maklumat tentang bagaimana tugas mereka dapat dipertingkatkan dengan mengenal pasti masalah yang mereka hadapi. Dengan cara ini, pemimpin akan mendapat pelbagai input yang dapat membantu mereka melaksanakan perubahan dengan lebih berkesan.

- **Mewujudkan Saluran Komunikasi yang Lebih Berkesan.**

Pemimpin perlu pastikan terdapatnya komunikasi dua hala di antara mereka dengan pegawai dan anggotanya. Elakkan kerenah birokrasi yang dapat menyukarkan pegawai dan anggota untuk terus berkomunikasi dengan pemimpin. Kerenah seperti ini akan menyekat pegawai dan anggotanya daripada menggunakan saluran komunikasi yang telah disediakan. Saluran komunikasi terbuka digalakkan melalui komunikasi bersemuka, di mana pegawai dan anggota dengan mudah dapat berbincang dan mengemukakan pandangan pada bila-bila masa dan di mana-mana sahaja yang difikirkan sesuai. Melalui saluran komunikasi terbuka juga akan mengelakkan pegawai dan anggota daripada mendapatkan maklumat melalui khabar-khabar angin, gosip atau sumber-sumber lain yang boleh dipersoalkan kebenarannya.

- **Ucapkan Tahniah Secara Peribadi.**

Jika seseorang pegawai dan anggota telah dapat menjalankan tugasnya seperti yang dikehendaki dengan jayanya, ucapkanlah tahniah secara peribadi atau berikan surat pujian kepada mereka. Ucapan yang ringkas ini akan dapat meninggikan semangat pegawai dan anggota serta menggalakkan mereka menunjukkan prestasi yang lebih baik lagi.

Cara ini lebih berkesan dan pegawai serta anggotanya akan lebih menghargai ganjaran yang diberikan. Ucapan tahniah atau surat penghargaan hendaklah menyatakan dengan jelas tugas atau tingkah laku pegawai dan anggota yang melayakkan mereka untuk memperoleh ganjaran. Tindakan sebegini membolehkan pegawai dan anggota yang lain mengetahui dengan tepat tingkah laku atau tugas yang membuatkan mereka menerima ucapan tahniah berkenaan.

- **Memberi Penghargaan Secara Terbuka.**

Penghargaan yang dibuat secara terbuka akan mendapat perhatian seluruh anggota dalam organisasi. Pegawai dan anggota yang mendapat pujian merasakan bahawa sumbangan mereka telah diberi pengiktirafan yang setimpal dan dihargai. Tindakan seperti ini akan menggalakkan rakan sekerja yang lain untuk turut sama mengikut contoh pencapaian berkenaan malah juga akan mewujudkan persaingan yang sihat di kalangan mereka untuk mendapat perhatian dan pengiktirafan yang sama. Oleh itu, pemimpin perlu bersedia untuk memberi penghargaan kepada pegawai dan anggota yang layak menerimanya dengan menghebahkannya semasa mesyuarat atau siarkan dalam buletin organisasi.

- **Berikan Mereka Tugas yang Mencabar.**

Perkara yang paling cepat mematikan daya kreativiti serta inovasi pegawai dan anggota adalah melakukan pekerjaan yang hambar, tidak mencabar dan dilakukan secara berulang. Tugas seumpama ini cepat membosankan, mematikan semangat dan tidak membantu mereka meningkatkan kemahiran diri sendiri. Oleh itu untuk memastikan pegawai dan anggota menjalankan tugas dengan baik, berikan mereka tugas yang mencabar minda serta emosi mereka. Tingkatkan tanggungjawab mereka dari masa ke semasa secara berperingkat-peringkat agar tugas tersebut dapat memberikan cabaran kepada otak kreatif mereka dan menggalakkan mereka meningkatkan kemajuan diri.

- **Menggunakan Prestasi Kerja Sebagai Asas Kenaikan Pangkat.** Banyak yang telah diperkatakan tentang bagaimana berkesannya

jika prestasi kerja dijadikan asas kepada kenaikan pangkat. Namun secara praktiknya, masih banyak pemimpin menggunakan kaedah jangka masa perkhidmatan sebagai asas penilaian untuk kenaikan pangkat di dalam organisasi. Cara ini bukan sahaja tidak akan menggalakkan persaingan yang sihat di kalangan pegawai dan anggota tetapi juga mematikan semangat kerja yang tinggi walaupun mereka mempunyai banyak idea-idea baru dan lebih bersemangat untuk bekerja. Di samping itu, dasar organisasi yang seumpama ini akan menggalakkan pegawai dan anggota yang tidak membuktikan pencapaian yang tinggi dan tidak produktif untuk terus kekal menunggu masa untuk diberi kenaikan pangkat.

- **Mewujudkan Semangat Kekeluargaan dan Kekitaan.**

Persaingan di kalangan pegawai dan anggota untuk memperoleh ganjaran serta insentif yang terbaik bukan sahaja melibatkan kos yang tinggi tetapi akan mewujudkan persekitaran kerja yang tidak sihat. Persekitaran seperti itu dapat membunuh pembangunan kreativiti di kalangan mereka kerana masing-masing cuba mencari jalan pintas dalam usaha untuk mendapatkan ganjaran yang lebih. Oleh itu, menjadi peranan pemimpin untuk membangunkan semangat kekitaan di kalangan pegawai dan anggotanya dalam usaha mewujudkan persekitaran organisasi yang harmonis. Melalui semangat kekeluargaan dan kekitaan dapat menyokong keperluan sosial antara pegawai dan anggota dengan satu keyakinan bahawa kekuatan kreativiti yang dimiliki secara berbeza dapat menampung kekurangan pegawai dan anggota yang lain. Budaya sedemikian bukan sahaja dapat meningkatkan dorongan kerja pegawai dan anggota, tetapi juga meningkatkan komitmen mereka terhadap organisasi.

## PENUTUP

Kebiasaannya, pelaksanaan perubahan bukan hanya dapat dilakukan dengan satu pendekatan, strategi dan teknik. Mungkin pemimpin menemui kegagalan apabila mengaplikasi salah satu daripadanya tetapi mereka perlu yakin terdapat cara lain yang dapat menjayakannya. Justeru kreativiti

adalah penting kepada pemimpin kerana melaluinya membolehkan mereka melihat permasalahan daripada perspektif yang berbeza, memilih pendekatan yang berlainan dan mengaplikasi strategi serta teknik yang di luar kebiasaan. Oleh itu, pembangunan kreativiti perlu diberi keutamaan oleh pemimpin dengan satu keyakinan bahawa

setiap pegawai dan anggotanya memiliki kelebihan yang tersendiri. Sungguhpun begitu, potensi kreativiti yang dimiliki oleh pegawai dan anggota tidak mungkin mampu dibangunkan seoptimumnya dalam pembangunan kreativiti organisasi jika tidak disokong oleh kebolehan pemimpin mereka.

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Lt Kol Ya'cob bin Hj Samiran telah ditauliahkan pada 4 Okt 1986 ke dalam kor Rejimen Askar Melayu DiRaja. Dilahirkan di Batu Pahat, Johor pada 22 Mac 1965 dan telah memegang berbagai-bagai jawatan dalam perkhidmatan Tentera Darat. Beliau adalah pemegang Ijazah Sarjana Teknologi Maklumat (UKM) dan kini menjawat jawatan sebagai Pegawai Memerintah Batalion Kelima Belas Rejimen Askar Melayu DiRaja di Kem Senawang, Seremban.





By Mej Christopher Ignatius Chong

### SYNOPSIS

When referring to cyber warfare many would think that it is something out of the science fiction story books. It brings to mind the use of highly sophisticated weapons to destroy the enemy. Currently, there is neither formal military doctrine nor official definitions of information warfare. Despite the computer jargon involved, the idea of information warfare has not only captured the attention of military analysts - it also poses important policy questions. "Net War" and "Cyberwar" are emerging as key concepts in discussing Information War. Technically cyberwar refers to conducting military operations according to information related principles. It means disrupting or destroying information and communications systems. It means trying to know everything about an adversary while keeping the adversary from knowing much about oneself. It means turning the "balance of information and knowledge" in one's favor, especially if the balance of forces is not. It means using knowledge so that less capital and labor may have to be expended. Cyberwar may raise broad issues of military organization and doctrine, as well as strategy, tactics, and weapon design. It may be applicable in low and high intensity conflicts, in conventional and non conventional environments and for defensive or offensive purposes. As an innovation in warfare, it is anticipated that cyberwar may be to the twenty first century what blitzkrieg was to the twentieth century. Yet, for now, it is also believed that the concept is too speculative for precise definition.

### INTRODUCTION

*The information revolution is transforming warfare, contend the authors. No longer will massive, dug-in armies fight bloody attritional battles. Instead small, highly mobile forces, armed with real-time information from satellites and battlefield sensors, will strike with lightening speed in unexpected places. The winner: the side that can exploit information to disperse the fog of war yet enshroud an enemy in it.*

John J. Arquilla and David F. Ronfeldt

As "first wave" wars were fought for land and "second wave" wars were fought for control over productive capacity, the emerging "third wave" wars will be fought for control of knowledge. And, since

"combat form" in any society follows the "wealth-creation form" of that society, wars of the future will be increasingly "information wars." Currently, there is neither formal military doctrine nor official definitions of information warfare. Despite the computer jargon involved, the idea of information warfare has not only captured the attention of military analyst it also poses important policy questions.

Despite the lack of authoritative definition, "netwar" and "cyberwar" are emerging as key concepts in discussing Information War. Originally these ideas seem to have come from the science fiction community. Consider, for example, the thought-provoking future war suggested in Bruce Sterling's *Islands in the Net*.<sup>1</sup> More recently, the

<sup>1</sup> Bruce Sterling, *Islands in the Net* (New York: Ace, 1988).

concepts of netwar and cyberwar have been developed by John Arquilla and David Ronfeldt in their important essay, "Cyberwar is Coming!"<sup>2</sup> Their suggestions provide a thoughtful starting point for exploring the issues that surround "information war."

## WHAT IS CYBER WARFARE?

Cyberwar refers to conducting military operations according to information related principles. It means disrupting or destroying information and communications systems. It means trying to know everything about an adversary while keeping the adversary from knowing much about oneself. It means turning the "balance of information and knowledge" in one's favor, especially if the balance of forces is not. It means using knowledge so that less capital and labor may have to be expended.<sup>3</sup>

This form of warfare may involve diverse technologies, notably for command and control, for intelligence collection, processing and distribution, for tactical communications, positioning, identifying friend-or-foe and for "smart" weapons systems, to give but a few examples. It may also involve electronically blinding, jamming, deceiving, overloading and intruding into an adversary's information and communications circuits.

As an innovation in warfare, cyberwar may be to the 21<sup>st</sup> century what blitzkrieg was to the 20<sup>th</sup> century. At a minimum, cyberwar represents an extension of the traditional importance of obtaining information in war: having superior command, control, communication and intelligence and trying to locate, read, surprise and deceive the enemy before he does the same to you.

## WARFARE IN THE INFORMATION AGE

Although most of us have been largely ignorant of the term cyberwar, there have already been many examples of cyber conflicts. The struggles

in Kosovo, for example, had some minor attributes of Cyberwar.<sup>4</sup> Those were in large part nothing particularly new, but rather the logical extension of new tools into military space. They should more properly be termed "information warfare" or even psychological warfare in that they consisted largely of a struggle to dominate the flow of information.

Probably the most common form of Cyberwar has been to attack the Internet information resources of the opponent, World Wide Web (WWW) pages or servers. There have been, for example, major such clashes between Israeli and Palestinian groups. Hacker ethics generally restrain "hacktivists" from doing real damage to the opponent, so the level of violence has usually been the post modern equivalent of counting coup defacing the opponent's web pages. In this struggle, interestingly, the Palestinian hackers are said to have mounted 200 successful assaults versus (vs). Israeli hackers' 40.<sup>5</sup> There have been similar clashes between Indian hackers and Pakistani ones (Pakistanis victorious), between China and Taiwan (China over Taiwan), Portugal vs Indonesia over E. Timor (Portugal, no contest) and many lesser known ones, including Chinese hackers vs. American ones (a draw).<sup>6</sup>

Cyberwar, (all forms of electronic attack or defense) like all things cyber, might give an impression of being so evanescent as to be unimportant. But to so dismiss them would be to make a grave mistake. It is true that the above examples clearly have an aura of adolescent hijinks about them. This is in large part because of the hacker ethos that unites the contestants. But a true struggle between nations or ethnic groups that escalates to deadly force will, of course, likewise escalate in cyberspace. There are already many examples of cyber conflicts with potentially disastrous outcomes for one or more of the participants.<sup>7</sup>

<sup>1</sup> John Arquilla & David Ronfeldt, "Cyberwar is Coming!," *Comparative Strategy* 12: No.2 (April–June, 1993), pp.141–165.

<sup>2</sup> Ibid, John Arquilla et al.

<sup>4</sup> See McGirk, Tim. "Wired for Warfare," *Time.com* <http://www.time.com/time/magazine/printout/0,8816,32558.00.html>

<sup>5</sup> Americo, R.P.C. "Cyberwar: The Mouse is Mightier than the Missile," *QSDG Magazine* [http://www.qsdg.com/phpelements/retrievearticles.php?article\\_ID=12444](http://www.qsdg.com/phpelements/retrievearticles.php?article_ID=12444)

<sup>6</sup> Kalman, Matthew. "Middle East Conflict Spills into Cyberspace." USA Today, 1992.

<sup>7</sup> Ibid.

Escalations of such conflicts include “denial of service attacks” in which one side disables the electronic resources of the enemy. In October of 2000, for example, the Israeli Knesset, as well as the Foreign Ministry Web site, was down for thirty hours due to blizzards of E-mail which crashed their servers. These attacks came simultaneously from Lebanon, Saudi Arabia, Europe and North America, apparently coordinated from Lebanon.<sup>8</sup>

Groups like *Hamas* (Palestine), the Algerian Armed Islamist Group (Algeria), the *Harkat Ul Moujahedeen* (Pakistan) and *Hezbollah* (Lebanon), each at some time said to have been linked to Bin Laden, have demonstrated a high level of skill in utilizing the Internet for political purposes.<sup>9</sup> Louis Freeh, then Director of the F.B.I., ranked terrorist skills with computers among “threats to U.S. national security” as early as January of 1998.<sup>10</sup> Yousef, himself was later linked to such terrorist groups as the *Gama al-Islamiya*, Islamic jihad, *Hamas*, the Sudanese National Islamic Front and *al-Fuqrah*.<sup>11</sup> Bin Laden, of course has been linked to many additional groups. It is probable that the interchange of people, skills and equipment guarantees that computer hacking skills are very widespread in all the groups.

The nature of hacking makes it difficult to assign responsibility to particular incidents. It is known that hackers have successfully penetrated even the National Aeronautics and Space Administration Jet Propulsion Laboratory computers which held data pertaining to commercial air traffic, Global Positioning System navigation satellites, and the location of Stealth aircraft among other bodies of information. This particular hacker was traced back to the Persian Gulf. But whether or not he was associated with al Qaeda is unknown.<sup>12</sup>

<sup>8</sup> Bickers, Charles. “Cyberwar: Combat on the Web” *Far Eastern Economic Review*, Oct 2001.

<sup>9</sup> Piller, Charles and David Wilson. “The Terrorists are Winning the Cyberwar.” *Latimes.com* <http://www.latimes.com/news/nationworld/nation/la-091901techspy.story>

<sup>10</sup> Freeh, Louis J. “Threats to U.S. National Security” Statement for the record before the Senate Select Committee on Intelligence, Washington D.C., January 28, 1998.

<sup>11</sup> “February 1993 Bombing of the World Trade Center in New York City” Center for Nonproliferation Studies, Monterey Institute of International Studies, <http://www.cns.miis.edu/pubs/reports/wtc93.htm>

<sup>12</sup> Ibid, Piller, Charles and David Wilson. .

It is clear that present conflicts already involve substantial elements that can be seen as an impact of the Internet. It is certain that the “war against terrorism” will involve a substantial electronic element, accurately described as “Cyberwar.”

## CONCEPT OF CYBER WARFARE

Throughout history, military doctrine, organization and strategy have continually undergone profound, technology driven changes. Industrialization led to attrition warfare by massive armies in World War I. Mechanization led to manoeuvre predominated by tanks in World War II. The information revolution implies the rise of a mode of warfare in which neither mass nor mobility will decide outcomes; instead, the side that knows more, that can disperse the fog of war yet enshrouds an adversary in it, will enjoy decisive advantages.

Seas of changes are occurring in how information is collected, stored, processed, communicated and presented, and in how organizations are designed to take advantage of increased information. Information is becoming a strategic resource that may prove as valuable and influential in the post-industrial era as capital and labour have been in the industrial age.

The information revolution sets in motion forces that challenge the design of many institutions. It disrupts and erodes the hierarchies around which institutions are normally designed. It diffuses and redistributes power, often to the benefit of weaker, smaller actors. It crosses borders, redraws the boundaries of offices and responsibilities, and generally compels closed systems to open up. The information revolution will cause shifts, both in how societies may come into conflict and how their armed forces may wage war.<sup>13</sup>

As the lessons of the hyperwar waged against Iraq in 1991 are examined and their implications debated, the battle over the nature of future wars has been joined. The scientists want to delegate more of the fighting to the “brilliant” weapons that they hope to develop and deploy by the turn of the

<sup>13</sup> Ibid, John Aquilla et al.



century; the generals want to keep human operators “in the loop.”<sup>14</sup>

The leading military concept of the new era called “cyberwar,” in which robots do much of the killing and destroying without direct instructions from human operators. The weapons would be “autonomous,” to use one of the weapons designers’ favourite words.

The outcome of machines versus people controversy is critically important, not only because it will determine the relationship between human and computer based intelligence at the beginning of an era that many observers see as marked by competition between the two, but because it will determine the nature of future wars. It’s important to note that the debate is no longer over the desirability of more advanced weaponry, even though many observers believe the Gulf War demonstrated that the U. S. lead is so great that the frenetic pursuit of new military technologies at the Cold War pace is no longer necessary.

The issue now is how the power of technology especially of advanced computers will be applied to military problems, and what role human operators will play. The “smart” weapons used in Vietnam and Iraq were guided by pilots via an electronic data link; but the future, some say, will be dominated by “brilliant” cruise missiles that require no human guidance after launch.

The armed services agree that smart bombs and cruise missiles should be used to save pilots from being shot down and taken prisoner or killed, but they are less than comfortable with the full blown cyberwar concept. They fear that cruise missiles will supersede piloted bombers and aircraft carriers respectively, the U.S. Air Force’s and Navy’s favourite programs and put pilots out of work. But they also note that, unlike industrial robots that perform their tasks more accurately and reliably than humans, cruise missiles are-and will remain less accurate and reliable than weapons directed by piloted bombers.

More serious issues arise regarding the targets of autonomous weapons. Missile guidance

computers, albeit with initial instructions from human operators, would decide where and when to detonate their warheads that is, whom to kill and what to destroy.

Although the idea of cyberwar may be discomfiting to anyone who has seen the “Terminator” movies, in which human like robots are programmed to kill anyone who stands between them and the completion of their mission, the services’ preferred alternative is also problematic. The services promote centralized systems like the air force’s Airborne Warning and Control System (AWACS), the army and air forces’ Joint Surveillance and Target-Attack Radar System (JSTARS), and the navy’s ship-borne equivalent of AWACS, called “Aegis.”<sup>15</sup>

Human judgement is required in these systems, but computers screen and filter a daunting array of data that would otherwise overwhelm a human operator. As new sensors provide more data collected over greater areas, and as the pace of combat accelerates, the role of the computer rapidly expands. Human operators, their decisions practically prescribed by computer, will become, in essence, subordinate to their machines.

Cyberwar promoters cite a number of reasons for investing in smart weapons. One convoluted argument is based on the theory that if brilliant weapons could seek out and destroy the nuclear arsenal of a developing country, it would permit the West to give up its nuclear weapons and thereby stigmatize the nuclear programs of developing countries. But will smart weapons ever be that good? Time will tell.

Compared to the traditional security threat, which consists of the dimensions *actor*, *intention*, and *capabilities*, “cyberwar” threats cannot easily be categorized. First, there is no clearly identifiable *actor* who could become a possible enemy. The cyber attackers can be teenagers, rogue nations, terrorists or disgruntled insiders, even private companies or political activists like the critics of globalization. This implies, secondly, that it is very hard to get verifiable information on the hostile intentions of the possible attacker: Does he or

<sup>14</sup> Eric H. Arnett, *Welcome the Cyberwar*, Bulletin of the Automatic Scientist, 1989.

<sup>15</sup> Ibid, Eric H. Arnett.

she want to attack the country they choose? Is he planning to use cyber attacks? This leads to the third open question: Does the possible enemy have the capability to wage a large-scale cyber attack against the country of their choosing? It is far from clear even in the intelligence community if strategic rivals like China or Russia already have the technology and, even more important, the knowledge and qualified personnel to hack into computers that control critical infrastructures. Traditional means of intelligence do not help very much in this field, because the capabilities for an attack largely consist of software, commercial-off-the-shelf hardware components, and an Internet connection. In its 1997 report, the President's Commission on Critical Infrastructure Protection explicitly wrote that the possible enemies are unknown, while the tools for cyber attacks are easily available.<sup>16</sup>

In the case of cyber risks, almost everything is new. The weapons are not kinetic, but software and knowledge; the environment in which the attacks occur is not physical, but virtual; the possible attacker is unknown and is able to hide himself effectively even during an attack.

## DETERRENCE AND CYBERWAR

Much of this paper has been concerned about the concept and idea of cyberwar. When analyzing deterrence dynamics, care must be taken to denote clearly the strategic conditions one is assuming. Cyberwar, the preparation and conduct of military operations against military connectivity, represents an enhanced dimension of conflict. On the one hand, it refocuses combat into a new area. As former US Army Chief of Staff General Gordon Sullivan explains it in reference to the abstract organizational chart, instead of focusing primarily on the boxes, as armies traditionally did, the 21<sup>st</sup> century Army will direct attention toward the lines that connect those boxes. Connectivity is the key. Under this strategic notion, however, the application of deterrence strategy will have to contend with the type of dynamic associated with traditional conventional weapons; deterrence strategy will have to overcome the problem of contestability.<sup>17</sup>

A menace to the connectivity of an opposing military may represent a significant threat, particularly if that military is highly dependent on those connections. Two related problems, however, present themselves. First, the disruption to the military network would have to be substantial for it to be feared. Destruction of only a segment of the network would not necessarily preclude the rest of the military force from achieving its offensive goals and thus the deterrent threat directed toward connectivity would not likely be seen as prohibitive. Second, if one of the major objectives of moving toward a networked military is to provide it with greater sustainability through redundancy and economy of force, the deterrent threat directed at connectivity may suffer from a perceived low reliability of effect. If a state can hope to sustain attacks on its connectivity, it will likely view deterrent threats directed at connectivity as contestable and, in the moment of decision, of questionable credibility (in terms of the capability to inflict unacceptable costs).

If cyberwar is to be dominated by a contest for supremacy over the electromagnetic spectrum,<sup>18</sup> the side that achieves such supremacy will have an enhanced ability to see, decide, and move at a pace that should overwhelm adversaries. This spectrum of conflict is better understood in the context of offense and defense than deterrence. Since the operations of networked militaries will be dependent on their connectivity, combat will, by necessity, involve direct attacks on that connectivity.

Traditionally, the securing of flanks or reserves and general force protection requires the deployment of combat troops. However, if the electromagnetic spectrum can be seized and "top sight" over the entire battle space provided, combat troops would not have to be dedicated to protect flanks and rear areas not under potential pressure from the enemy.<sup>19</sup> Some of these combat forces could then be used in offensive operations. Thus, connectivity not only can create greater lethality, it has the potential to increase the number of combat forces available to commanders.

<sup>16</sup> President's Commission on Critical Infrastructure Protection (PCCIP), *Critical Foundations. Protecting America's Infrastructures* (Washington, D.C., 1997), p 14.

<sup>17</sup> Richard J. Harkenett, *Information Warfare and Deterrence*, Parameters, Autumn 1996, pp. 93-107.

<sup>18</sup> Morris Boyd and Michael Woodgerd, "Force XXI Operations," *Military Review*, Vol 74, November 1994, pp. 16-28.

<sup>19</sup> David Gelernter develops the concept of topsight, which captures the essence of shared situational awareness. See his *Mirror Worlds*, p. 52; Arquilla and Ronfeldt also discuss the term in "Cyberwar is Coming!"

A force with such capabilities, provided and sustained by connectivity, should cause most opponents to take pause. States that acquire dominance in cyber warfare could make the whole prospect of challenging them seem prohibitively costly. The problem, of course, is that such dominance can be contested, both before and after war begins. Command, control, communications, computer, and intelligence (C4I) assets are susceptible to disruption and failure. The employment of computer viruses, electronic disinformation, or direct destruction of sensing equipment could therefore become increasingly prevalent as the importance of connectivity increases. As the *Gulf War Air Power Summary Report* suggested,

*The more sophisticated and expensive the information gathering system, the greater the premium opponents will put on disabling it. . . . The pay off for shooting down a state-of-the-art radar surveillance aircraft, for example, will surely attract efforts to do so.*<sup>20</sup>

Cyberwar cannot be understood in a static context. The Persian Gulf conflict, considered by some a harbinger of cyberwar, may be a poor touchstone. In the future, opponents of high-tech networked militaries are unlikely to make the same mistake Iraq did by giving the United States a “free ride” to deploy and use its communications network.<sup>21</sup> This, of course, does not mean that the ability to overwhelm potential adversaries in cyber warfare should not be used to promote deterrence against attacks on vital interests. It should be recognized, however, that cyber deterrence suffers from the same inherent difficulties that are built into conventional deterrence. As long as the costs associated with a deterrent threat can be viewed by an opponent as contestable to a significant degree, deterrence is unlikely to hold under great stress. The dynamics associated with cyberwar would seem to support the conclusion that much more time should be directed toward the development of both

offensive and defensive cyber warfare capabilities, tactics and strategies, than on deterrence models.

## CONCLUSION

The post modern battlefield may be fundamentally altered by the information technology revolution, at both the strategic and tactical levels. The increasing breadth and depth of this battlefield and the ever improving accuracy and destructiveness of even conventional munitions have heightened the importance of information to the point at which dominance in this aspect alone may now yield consistent war winning advantages to able practitioners.

Cyberwar may have broad ramifications for military organization and doctrine. As noted, the literature on the information revolution calls for organizational innovations, so that different parts of an institution function like interconnected networks rather than separate hierarchies. Thus, cyberwar may imply some institutional redesign for a military in both intra and inter service areas.

Cyberwar may also imply developing new doctrines about the kinds of forces needed, where and how to deploy them and what and how to strike on the enemy's side. How and where to position what kinds of computers and related sensors, networks, databases and so forth, may become as important as the question once was for the deployment of bombers and their support functions. Cyberwar may also have implications for integrating the political and psychological with the military aspects of warfare.

In summary, cyberwar may raise broad issues of military organization and doctrine, as well as strategy, tactics, and weapons design. It may be applicable in low and high intensity conflicts, in conventional and non conventional environments and for defensive or offensive purposes. As an innovation in warfare, it is anticipated that cyberwar may be to the twenty first century what blitzkrieg was to the twentieth century. Yet, for now, it is also believed that the concept is too speculative for precise definition.

<sup>20</sup> Eliot Cohen, “The Mystique of U.S. Airpower,” *Foreign Affairs* No 73, January-February 1994, p 115.

<sup>21</sup> *Ibid*, Cohen, pp 109-125.



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By Mej Inderjit Singh a/l Tara Singh

### SYNOPSIS

e-Learning is the delivery of training, education or professional development using multiple media and technologies when and where they are required. To complement the Learning Organization culture more military organization are looking at the way forward in implementing e-Learning. The main aim of introducing e-Learning is not only to reduce face to face and residential training but create a seamless umbilical cord for knowledge to soldiers anywhere in the world which inevitably reduces cost and movement of soldiers. The Knowledge Management Plan has been developed and requires drivers such as e-Learning as tools to complement this phase of knowledge sharing amongst military personnel. Best practices can be learnt from the UK, US and Australian Army in creating a model for the implementation of e-Learning in the Malaysian Army in the future.

*Power comes from effectively combining information with technological capacity and the creative capacities of human beings. Knowledge has become “the single most important factor of production” requiring in turn, fundamentally different management strategies and ways of valuing these intellectual assets.*

*T.A. Stewart, Intellectual Capital: The New Wealth of Organizations*

### INTRODUCTION

A learning organization has a culture that supports learning and innovations both by individuals and by the organization itself. The environment promotes a culture of learning, a community of learners, and it ensures that individual learning enriches and enhances the organization as a whole. The process of learning must ultimately be made part of the culture, not just as a solution to a given problem. Leading military organizations recognize the strategic opportunity presented by learning technologies. e-Learning is generally accepted by learning experts and organizations as a critical and cost-effective strategy to enhance training capability. In an era when capacity to provide face-to-face training is constrained by budget realities, e-Learning has emerged as a

viable technological innovation to complement traditional learning methods and improve the efficiency of training administration.

e-Learning also provides crucial knowledge and information, and an e-Learning system should have the ability to exchange information with the Knowledge Management (KM) systems to maximize an organization's intellectual assets. Organizations are eager to find ways of reducing training costs, while ensuring that people are acquiring the intended skills and knowledge.

This paper looks at the overall perspective of realization of e-Learning in the military organization with best practices inculcated from various militaries to further augment the learning organization culture. This includes the benefits of e-learning and

showcasing the enabling factor and drivers of e learning into the knowledge management paradigm shift in facing the future challenges especially in technological advances.

## WHAT IS e-LEARNING?

**Definition of e-Learning.** e-Learning is a delivery mechanism for Distributed Learning (DL). DL refers to the delivery of training, education or professional development using multiple media and technologies when and where they are needed. This can range from paper-based correspondence courses to interactive online learning taken anywhere. E-Learning “refers to training and education that is delivered digitally, which includes multimedia computer-based training and other forms of technology-assisted learning”. E-Learning is normally delivered through a network or the Internet but it may also be delivered via Compact Disc Read Only Memory (CD-ROM). In most organizations, personal computers are used to deliver e-Learning digitally but personal digital assistants (PDAs) and other wireless devices are increasingly being used. E-Learning therefore includes multimedia computer-based training (CBT) and other forms of technology-assisted learning”.

## BENEFITS OF e-LEARNING

Learning organizations demand a new view of information which relates to knowledge which is considered corporate capital, and Knowledge Management (KM) systems are created to assist people in obtaining the information that they need. Over the past few years rapid advancements in ICT have contributed towards a staggering growth in global computer networking and the emergence of a globally connected world. The Internet has evolved from being a network for researchers and academics into a platform that has enabled new organizations to find alternative ways in which to offer their products and services. We have witnessed a paradigm shift in the ways in which the transfer and management of knowledge is handled. The Internet and Web-based technologies have both had a profound effect on the ways in which educational and training institutions now operate in that it has made it possible for many innovative educators/trainers (within ICT enabled

nations) to think of new ways in which to use the Internet in order to provide Web-based knowledge management and training opportunities.

Constant change in the external environment with increasing operational demands and within the Army, particularly frequent staff movements, has impacted on e-learning implementation. Knowledge of e-learning has largely been developed from the experiences of learners and teachers in education using interactive internet technologies to create online learning environments that support learning communities (Downes1998). Research into e-learning in workplaces is more limited and tends to be anecdotal accounts by organizations or commercially based research companies with a US focus. Reporting from knowledge-based industries, where computers tend to be integral to their core business has also created a bias in the e-learning case study literature (Newton et al. 2002). The importance of recognized, professional qualifications alongside academic ones is already beginning to have an impact in both the Army and higher education. The market demand for e learning can include the following benefits to an organization and the individual:

- **Efficient Learning Time.** There is minimal work time lost with just-in-time (JIT) learning or on-demand training. The user can learn anywhere and at anytime at their convenience: self-paced, self-directed, self-managed, learning-on-demand, JIT training, just enough training, distance learning and open learning. The individual can immediately apply what he or she learns to the job when this takes place in the working environment.
- **Cost-Effective Learning.** e-learning provides inexpensive in house and global distribution that can be delivered to any networked computer, to a large number of individuals. By using Internet learning the organization need only pay for off-the-shelf training required, i.e. pay-as-you-learn thus reducing training costs. Programs can be delivered and re-used with fewer costs than with traditional training methods. There are no expenses required for the individual's travel, subsistence, or accommodation as with off-site instructor-led courses.



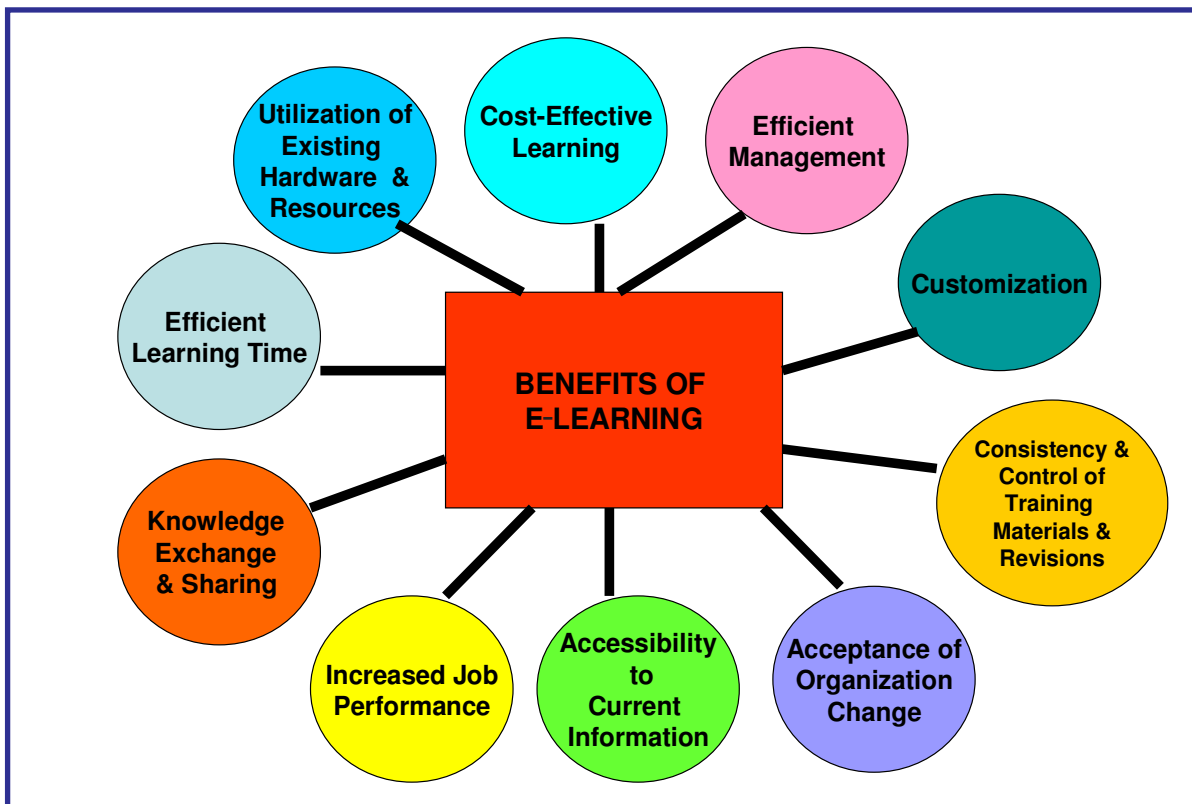


Figure 1: Benefits of e-Learning

- **Efficient Management.** The self-managed learner is a useful resource to the organization, given the right training and guidance. The empowered individuals can organize their own training and learning methods with the e-learning environment thus freeing up their managers to do other tasks.

- **Customization.** e-Learning courses can be customized to meet the organization's specific training needs. This flexible learning environment can also be department, product or individual specific.

- **Knowledge Exchange and Sharing.** Individuals can share their new knowledge and skills to others in the team and department. This increases the comprehension of other employees by integrating and sharing information with other departments, suppliers and customers.

- **Job Performance is Increased.** Understanding is developed from achieving

greater knowledge retention by wanting to learn. Hence, fewer unproductive mistakes are made in the organization. Self-motivated, self-disciplined, self-reliant, self-assessed, better-trained employees are more autonomous and can contribute better to the whole organization performance.

- **Lower Turnover of Staff.** Employees are more confident, competent and valued, due to the learning climate and are more likely to stay in the organization. Organizations that offer ongoing education and training have a higher rate of employee retention and benefit from a better-skilled workforce. Organizations are becoming aware of the importance of continual training.

- **Acceptance of Organization Change.** Self-directed individuals accept organization change more readily as they adapt by learning new techniques and processes (Reay, 1994). French (1999), identified that self-directed learning benefits to a company by employees who see

themselves in a learning environment add value to the companies, increase productivity, are more accepting of change, and can adapt to movement within the company.

- **Accessibility to Current Information and New Material.** Knowledge and skills within an organization can be continually updated through e-learning. The organization can adapt more quickly to the environment in which it operates, due to better-informed employees. According to Steed (1999), skill transfer and retention with e-learning is at least 30 per cent more effective than instructor-led training.
- **Utilization of Existing Hardware and Resources.** A Web browser provides the interface to the Internet and allows access to the e-learning environment on any operating platform, such as Windows, UNIX, Mac or OS/2. A training program can be delivered to any networked computer without authoring different programs for each platform.
- **Consistency and Control of Training Material and Revisions.** After the original implementation of an e-learning module

that links to Web-based information, further program changes, additions, enhancements, and developments can be made on the server where the program resides and everyone company-wide and globally can access the latest updated version.

### COMPONENTS OF A TYPICAL e-LEARNING SYSTEM

A typical e-Learning system, or suite, includes the following components:

- **Learning Portal.** This provides the initial point of contact for users for access to training, education, knowledge resources and support tools. The portal can be customized by the department and individual user.
- **Learning Management System.** This is the infrastructure on which e-Learning can be built and delivered. It comprises registration capabilities; management of curriculum and courses, skills and records management; student interfaces to courses; administration and interfaces with external enterprise systems.

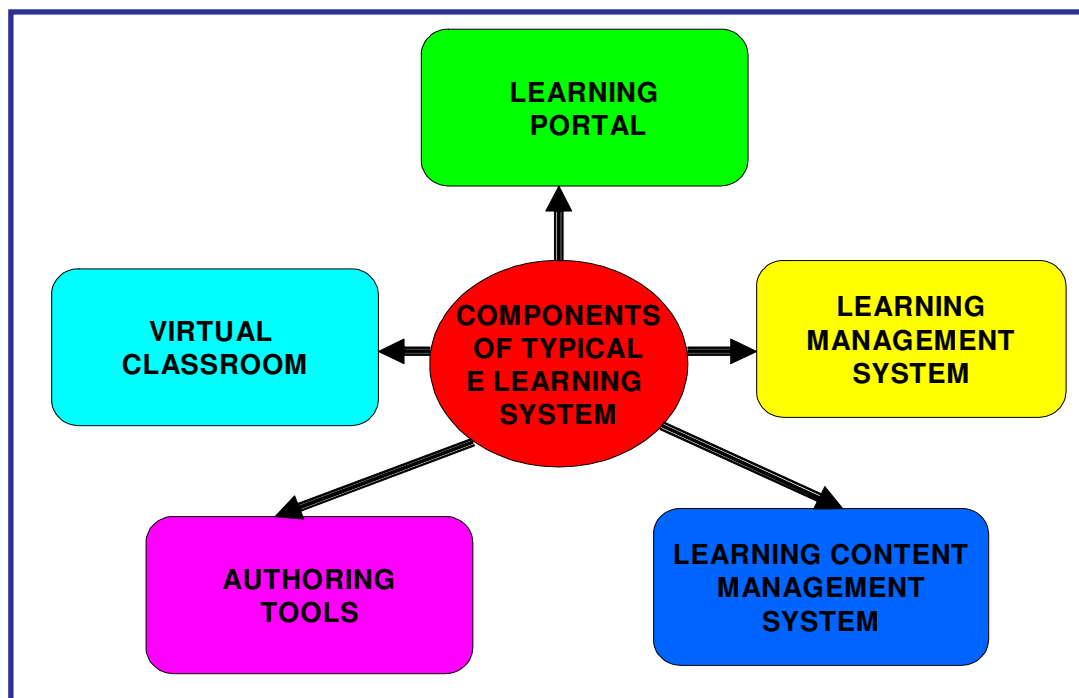


Figure 1: Benefits of E-Learning

- **Learning Content Management System.**

This is the software application that manages the creation, storage, use and reuse of learning content. Content is often stored in granular forms referred to as learning objects.

- **Virtual Classroom.** This is a teaching and learning environment located within a computer-mediated communication system and intended to fulfil many of the learning facilitation roles of a physical classroom and

- **Authoring Tools.** This is a program designed for use by a non-computer expert to create training products.

## e-LEARNING IN THE MILITARY CONTEXT

Constant change in the external environment with increasing operational demands and within the Army, particularly frequent staff movements, has impacted on e-Learning implementation. Demographic trends, the rate of attrition of experienced personnel and the continued emphasis on recruitment are placing pressures on the demand for training and education services that are already overtaxed. As a result, drivers for investment in e-Learning technology include a desire to increase capacity, reduce instructor-led training time, improve access to learning resources and provide improved quality of life.

The authoritarian and hierarchical nature of Army decision-making and its training culture have influenced e-Learning design and development. The Army has adopted competency-based training and assessment and has a specified scope of registration for the types of training that it can deliver and assess. However, there are other skills, knowledge and attitudes required of the trainees outside of training package requirements. For example, there is a need for all training to comply with Army doctrine that provides standard operating procedures. Doctrine is constantly revised to meet operational requirements and these changes need to be reflected in all training. There is also a need for “socialisation” (Manager) of trainees from civilian to Army culture. Thus, there is a range of content and attitudinal outcomes that need to be included in e-learning.

However, like many other organizations, the Army’s primary function is not training delivery. Although the initial push for e-learning reflected a need for efficiency outcomes, managers’ perceptions of the goals of the learning environment also influenced e-learning development.

The reasons for implementing e-Learning in the military are supported by the following reasons:

- Cost-effectiveness in saving travel time and expenses .To minimize the disruption to units, trainees and their families arising from their participation in training. This is evident especially the movement of personnel from all over Malaysia especially in East Malaysia and those attached to other militaries or involvement in long term attachments such as UN mission.

- Whenever possible (and necessary) to deliver the same training to regular and reserve Army members. With the need of a strong foundation in Army reserve, the lack of time for training can be supported by self training through the portal at the trainees own time. This will elevate the minimum requirement of face to face training.

- To facilitate cost saving for the Army on administrative cost to facilitate trainees to the Training Institute. This will reduce the cost of residential training for trainees from all over the country. There is additional capacity to train at lower cost by reaching more people in a shorter amount of time. This increases the return of Investment which is leveraged over the years to large number of learners;

- Learners have just-in-time access to training anywhere and anytime, and can select their own pace of learning for some courses. There will be more consistent course delivery and reduction of instructor variance. This will induce the possibility of building learning communities fostering human interaction and knowledge sharing.

- There is an increase in learning impact through engaging multimedia presentation and interactivity to reinforce understanding and application.



Of even greater concern to Army leadership was the fact that traditional methods used for training its Information Technology (IT) workforce were not keeping up with demand. e-Learning programs today provide many militaries all over the world with an additional management tool to effectively achieve these ends, and with the flexibility and cost-effectiveness they require. Distance learning has existed for a long time. Originally it was just a book in the mail. Later there were correspondence courses. When computers became available, educators were tempted by this new means to deliver education at a distance. Now e-Learning seems to be the next generation of inculcating a learning organization, which must be fitted into organizations Knowledge Management Plan.

Knowledge of e-learning has been largely developed from the experiences of learners and teachers in education using interactive internet technologies to create online learning environments that support learning communities. The Australian Army has been using e-learning since 1987 and has received strategic support from 1996 to develop multimedia CD-ROM training packages as part of its regular training content. Since its establishment in 2000, the Army's Training Technology Centre's (TTC) staff of instructional designers and course developers has produced over 50 CD-ROM multimedia training packages

## **IMPLEMENTATION OF e-LEARNING**

In today's fast-paced environment, it's difficult to find the time or the inclination to participate in structured training. From the strategic overview of the Army's perspective, in many cases, it is neither fiscally responsible nor mission compatible to send people from their duty stations to complete required training. In most organization today, experiential learning, or learning by doing, is hard to find because it is so hard to implement E-learning can change the paradigm of learning and transform the lecture model to an interactive model. It was the beginning of simulated experiential learning. Obviously, the implementation of information and communication technology (ICT) and educational technology in most military is at the planning stage but the momentum and the pace is left

much to be desired. A long list of problems (or rather challenges) in implementing ICT in military institution has been addressed. These range from infrastructure, info structure, time, technical knowledge, financial implications, attitudes and resistance to change. Army e-Learning provides the Army's soldiers and civilians the opportunity to take advantage of a multitude of valuable courses for free, while enabling the Army's workforce to be trained to a higher standard.

## **BEST PRACTICES AND TRENDS IN e-LEARNING**

e-Learning technology lends itself to shared technology platforms that produce economies of scale. To obtain the greatest return on investment, best-practice organizations first develop or adapt a clear, purposeful vision of e-Learning that is linked to overall organizational strategies, then support that vision with a coordinated and typically centralized technology strategy. A coordination of effort and a clear end-state brings about lower costs and normally results in less time spent to achieve target objectives.

It is important to note that all of the organizations researched for best practices have in place or are planning to build a single, centralized technology platform for e-Learning and other training administration requirements. This approach allows them to obtain the greatest benefit from their investment by spreading costs over a larger population. It also provides other benefits such as agreement upon common standards for quality, greater visibility for the project with senior leadership, and "one stop shopping" for personnel seeking training and/or educational options, whether they are instructor-led or web-enabled.

Some best practice military organizations permit commands with unique needs to pursue their own separate technology platform, provided that a business case supports the request.

The UK Ministry of Defence (UK MoD) is in the process of soliciting a bid to implement a single, coherent and mandated method of delivery and management for e-Learning material across

the whole of Defence. The MoD is supporting a single defence-wide capability that allows reuse of shareable e-Learning material.

The US Navy implemented Thingq, a Commercial Off The Shelf (COTS) system, providing a single point of access for all training commands via the web. Training commands can customize their “view” and can have their own unique “instance” of the software if it is needed. The Canadian Naval Education and Training Command (CNETC) has initiated a plan to standardize and integrate the requirements, systems, and network architectures to support the Fleet, the Sailor, the Learning Centres, the schools, the training managers, and the civilian workforce.

The Australian Defence Force (ADF) has approved funding for the implementation of an e-Learning strategy over a 4-year period to provide an e-Learning system for the Defence personnel.

Reducing the cost of training was also a driver for more centralised e-Learning implementation with a defence efficiency review (Department of Defence, 1996). Residential training involves transporting trainees from all over Australia and accommodating them in training centers, each specialized in a type of training (e.g., signals). An estimated 70 per cent of the costs of training were attributable to residential costs and time off for trainees from regular duties (Training Technology Centre Army, 2003 ). Face-to-face classes are also very resource intensive with a high expenditure on materials (e.g. ammunition) and staffing. This efficiency review encouraged the use of technology to optimize effectiveness of manpower and resources and became the policy vehicle to support and scaffold changes required to refocus priorities in Army training. A Model of Effective e-Learning Implementation based on The Australian Army is shown in Figure 3.

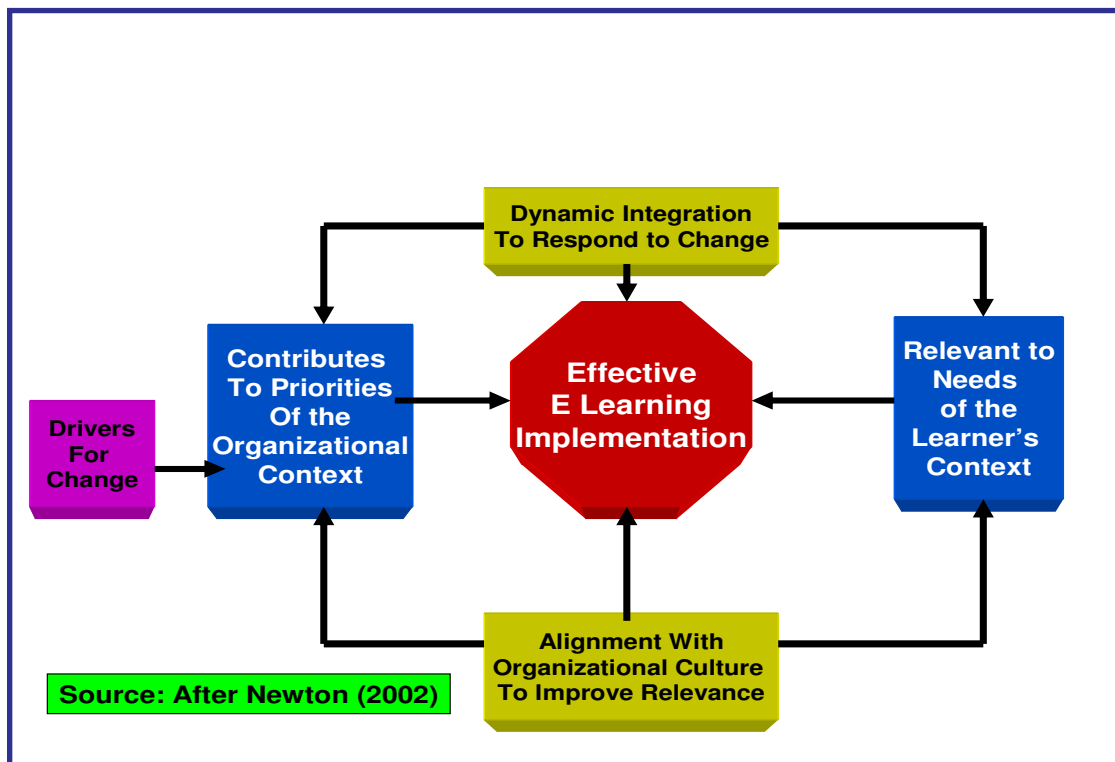


Figure 3: Model Of Effective E-Learning Implementation Based On The Australian Army

## CONCLUSION

e-Learning is emerging as a dynamic solution that can create productive and engaging learning environments if implemented appropriately. e-Learning can deliver a broad range of solutions to enhance knowledge and performance to accommodate the diverse needs of working adults. The benefits of e-Learning are just-in-time training, flexibility and convenience for the learner, the ability to rapidly reach a large number of learners and satisfy the training needs of a geographically dispersed workforce without a large investment in travel and living expenses. Research has demonstrated that individualized learning environments can result in learning retention rates that are equivalent to a traditional classroom lecture. e-Learning technology lends itself to shared learning management platforms (LMP), supported by a coordinated vision, that produce economies of scale for maximum return on investment. A single, centralized learning platform includes the overall system for the management and delivery of various forms of e-Learning such as web-based training, conferencing, virtual classrooms, and online libraries.

However, achieving the benefits of e-Learning requires a significant investment in time and money,

and return on investment may be longer term, or in the form of increased capacity to deliver training. In this regard, e-Learning can augment conventional training and capitalize on opportunities offered by new learning technologies. The challenges of implementing e-learning mirror those of conducting knowledge management and involve the development of a technical infrastructure, paradigm shifts in organizational behaviour and design of a knowledge strategy. Despite the challenges involved in creating a successful e learning environment, it is clear that the benefits of e-learning complement and strengthen other knowledge management activities in the military environment. The importance of e-learning is it incorporates the traditional pedagogy of education with the advantages of technology to capture, disseminate and share knowledge throughout an organization.

The UK, Australian and US armies have all implemented various forms of e-learning, and have all used processes that open, distance and flexible educators would consider successful. All three armies have carried out reviews of their e-learning provision and considered its effects on recruitment, retention and effectiveness. This not only makes a comparison timely but also offers an opportunity to reflect on the success factors for e-learning in other settings.

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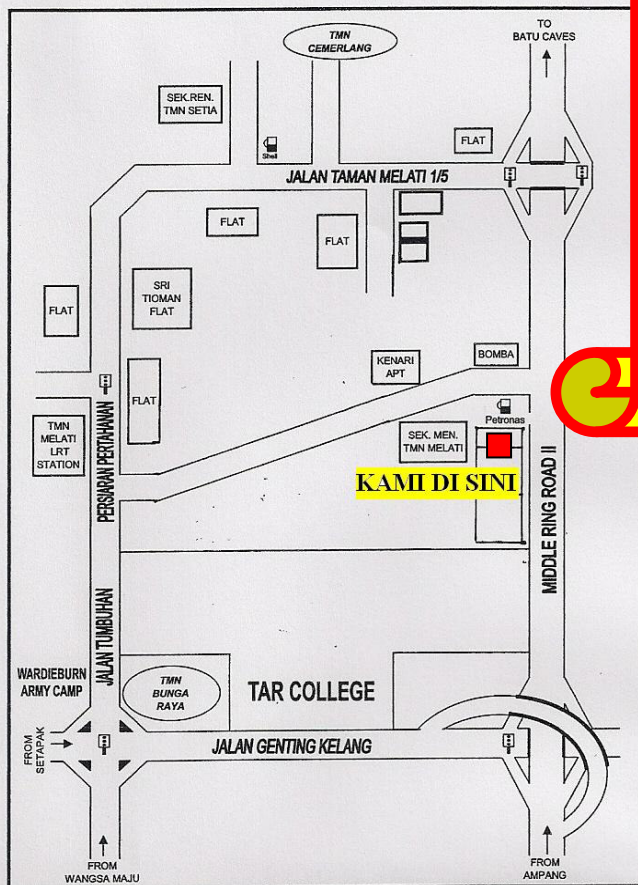
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By Kol Abu Sufian bin Hj Ahmad

### SYNOPSIS

Military deterrence although is an old strategy and applications, has evolved with the new innovations and military developments. This article seeks to discuss on concept and strategies of conventional deterrence and the lessons learned from the cold war.

It highlights the two concepts of deterrence which are the 'cost-gain expectation' and also 'stability'. With these two concepts, it will inevitably discuss on the possible strategies involved. The strategies focus on the deterrence as function of three areas which are weaponry, numerical superiority and also specific strategy. The other strategies discussed are the offensive strategies the attrition strategy and the Limited Aim's Strategy.

The credibility of deterrence is also a factor to be considered and there are few significant factors influencing the credibility of deterrence. This article rounds up with the issue of success and failures in deterrence and complemented with an evaluation of the concept.

### INTRODUCTION

Deterrence is an old strategy and its application has a long tradition in the art of war. The idea of deterrence has been "simplified and referred to military strategy"<sup>1</sup> under which one uses a threat to prevent an attack from an enemy power. Therefore, threat and fear are the main issues to the original meaning of deterrence. During the early stages of mankind, the main method of deterring an enemy was to capture the attention of his senses, mainly visual and thereby to activate the enemy's imagination. As time passed by, military developments and innovations of new means of fighting were being introduced, thus increasing the credibility of deterrence.

The end of World War II and the use of nuclear weapons in Hiroshima and Nagasaki, marked a

new era in military deterrence. Nuclear deterrence assumed a special prominence when it became the central element in the defense of the nuclear powers. But in late 1970s, there was evidence that the Soviet Union was preparing for possible non-nuclear conflict in Europe<sup>2</sup>. At this juncture, the Cold War has witnessed international politics dominated by the Soviet Union, who had the Warsaw Pact behind her, and the United States with NATO perceived by the world in terms of tight bipolarity. Both NATO and the Pact realized and accepted the drawback of nuclear weapons for the purpose of defence and brought greater interest in the conventional balance. It had influenced NATO who gave serious consideration to fighting only conventional battles, unlike those of the Second World War. Certainly, nuclear weapons still continue to play a role in deterring war in Europe and will do so as long as they remain available.

<sup>1</sup> Bertham, Christop. 1981. pg 37.

<sup>2</sup> Noguee, Joseph L. 1988. pg 258.

This essay discusses certain concepts and strategies of conventional deterrence and the lessons learned from the Cold War.

## CONCEPTS OF CONVENTIONAL DETERRENCE

Concepts of conventional deterrence borrow heavily from nuclear deterrence. The initial study of conventional deterrence was by Alexander L. George and Richard Smoke in 1974 who seek “to prevent the use of force by non-nuclear threats”<sup>3</sup>.

Deterrence has been defined by Richard Ned Lebow<sup>4</sup> as something that “seeks to prevent undesired behavior by convincing those who might contemplate such action that its probable cost will exceed its anticipated gain”. It implies the use of threat by one actor to influence the behavior of another so as to discourage him from first use of force. Hence a model for deterrence would be, ‘If you attack me, I will attack you, and you are going to suffer more’.

Another definition of deterrence is given by John Mearsheimer<sup>5</sup> who explained the concept of deterrence as a “cost-risk benefit relationship” where this paper will discuss. In its broadest sense, it means persuading an opponent not to initiate a specific action because the perceived benefits do not justify the estimated costs and risks. He goes on to state that conventional deterrence has two components on which it is based; punishment which is threatening to destroy large portions of an opponent’s civilian population and industry; and denial, which is convincing an opponent that he will not attain his goals on the battlefield. The punishment component, the author maintains is a part of nuclear deterrence in which to survive a nuclear first strike and inflict unacceptable damage on the opponent in a retaliatory second strike. It is the denial portion that conventional deterrence can at best focus on although there is an element of punishment with conventional means also experience. Conceptually, it is possible to dissuade in two ways: firstly, by trying to persuade other countries to take actions which would be helpful or

secondly, by trying to dissuade them from actions which would be harmful. Deterrence by conventional means, is primarily concerned with the mechanisms of dissuasion rather than persuasion.

At nuclear deterrence level, the dissuasion; because of the risk of immediate physical and calculable destruction is easily understood by the concerned parties. At conventional level, the risk that deters is less simple. It is the fear of being beaten, in other words of finding that the victory has gone to the enemy. Mearsheimer also stated, “fear of consequences’ is the heart of deterrence”<sup>6</sup>. According to the author, there is a difference between the superpower practicing deterrence and a lesser or a regional power. The superpower exercise deterrence by “credibility of commitment”, which is only relevant to conventional deterrence when, as a third party, it intervenes and has stated commitments.

- **Cost-Gain Expectation.** The concept of deterrence operates in a gain, cost and risk scenario. If the cost to the attacker is high in all probability, he would be deterred. Cost has also a relationship to duration of the conflict in a conventional deterrent environment. The opportunity of short quick victory, even if risk is high, is enough to reduce a potential attacker into overlooking deterrence. The promise of a long drawn war with obvious greater cost in men and materials, is a scenario in which conventional deterrence is likely to prevail. However in nuclear situation, the destruction effects on both sides in varying degree but conventional victory must go to one side only. It is this essential differences that make conventional deterrence a difficult and perhaps a dangerous concept to follow.

- **Stability.** Another aspect of deterrence is its concern with imposing stability to remain effective. In nuclear situations there is a natural trend towards absolute stability. The contributory factors are being psychological aspects of inhibitions on the use of weapons and the uncertainty. It also the mere increase in size of nuclear arsenal, on both sides, tends to reinforce the reluctance to use them and

<sup>3</sup> George, Alexander L. pg 11.

<sup>4</sup> Lebow, Richard N. pg 1.

<sup>5</sup> Mearsheimer, John J. pg 23.

<sup>6</sup> Ibid. pg 63.



thus imposing stability. The conventional level, however, tends to become unstable as soon as expectation of victory is even slightly visible. Increase in conventional forces and equipment improve the chances of victory and thus brings instability. In the conventional deterrence area thus strategists are constantly attempting to impose stability to preserve peace, when the natural tendency is towards instability.

During the Cold War, military deterrence has been indispensable in avoiding of a direct clash of arms between the West and East. It has provided a period of peace along the East-West axis and indeed for most countries of the world, although it is important to realize that it has not been the only factor. War was avoided, since the side that initially had a nuclear monopoly and superiority, that is the West, wished only to defend the existing territorial-political arrangements. On the other hand, the Pact was preoccupied with recovering from the devastation of war and trying to gain parity.

Military deterrence also operated independently of the superpowers among countries not aligned with them. This is not because these countries emulated the superpowers, but because deterrence is integral to any international conflict in which armed adversaries must resort to war or the threat of war.

## STRATEGIES OF CONVENTIONAL DETERRENCE

As mentioned earlier, conventional deterrence is directly related to military strategy or to be precise is the matter of how a nation's armed forces are employed to achieve specific battlefield objectives. The conventional deterrence 'exponents advocate broadly three possible strategies to deter the opponents'<sup>7</sup>:

- **Deterrence as a Function of Weaponry.** It is assumed by some that deterrence would perhaps not hold if one side has 'offensive' weapons. Thus force structures are modified to include what they perceive to be offensive weapons. This logic usually finds favor within military circles. But there is a difficulty with definition of offensive conventional weapons

and as such it is difficult to determine deterrence from purely the nature of weapons held by the opposing sides. The weaponry systems which consist of mobility, survivability and firepower known as armored divisions equivalent (ADE) between NATO and the Pact during the peak of their aggression was in favor of the Pact with a 1.2:1 advantage.<sup>8</sup> But it is clear that NATO is not hopelessly outnumbered.

- **Deterrence as a Function of Numerical Superiority.** Other traditional theory is that deterrence would fail if one side has significant numerical superiority over the other. There is a difficulty with quality and quantity factors, to come to a judgement on balance of forces, although to an extent, a side that is numerically superior would find it easier to arrive at a decision to break the deterrence. Thus defence forces go on to maintain large conventional forces in reaction to the numerical strength of the other, attempting to impose stability through balance of forces. Such an approach leads to further instability as discussed. Robert Lucas Fisher<sup>9</sup>, in his 1976 study of conventional balance noted that NATO had 414,000 men in its divisions, while the Pact had 564,000 men. The ratio did not favour much to the Pact as far as the overall manpower levels on the central front because NATO had assigned more men to combat units which are not organic to divisions.

- **Deterrence as a Function of Specific Strategy.** The third theory of conventional deterrence is that conventional deterrence is a specific strategy available to the potential aggressor, who could pursue three possible strategic options in an attempt to pursue deterrence:

- **Offensive Strategy or Blitzkrieg.** Since the potential attacker would look for a short quick victory to save on cost, he is likely to structure his forces to pursue a blitzkrieg type of strategy, and hope to maintain a deterrence. Hence in a given situation if one side adhered to a blitzkrieg attack, even if it is numerical inferior, deterrence

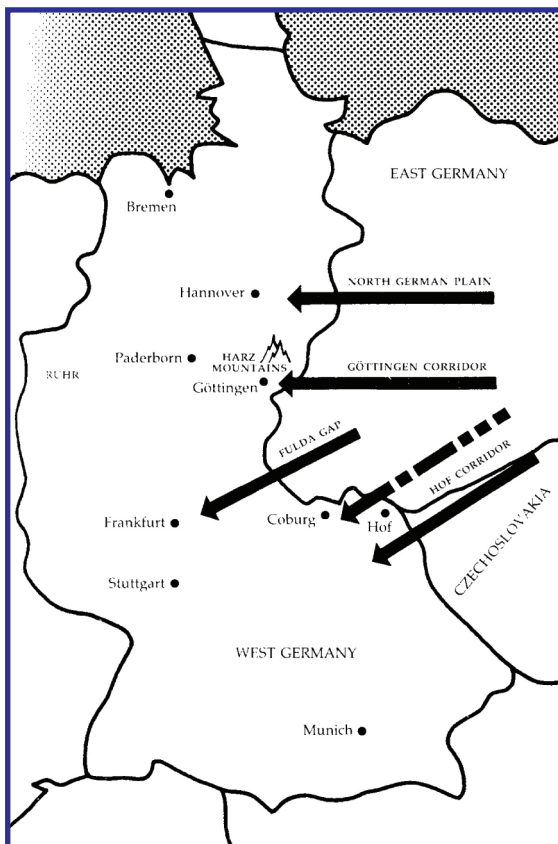
<sup>7</sup> Buzan, Barry. Pg 31.

<sup>8</sup> Fisher, Robert L. pg 20.

<sup>9</sup> Ibid. pg 65.

will not hold in a conflict situation. NATO chose a forward defense strategy in view of the tight terrain and had effectively determined that a war in Europe will be won or lost along the inter-German border. The Pact on the other hand, chose any point on the NATO front and attempted to tear open a hole or two to exploit the openings and to penetrate into the depths of the NATO defence before they have the chance to shift forces and to slow the penetrating spearheads of the Pact.

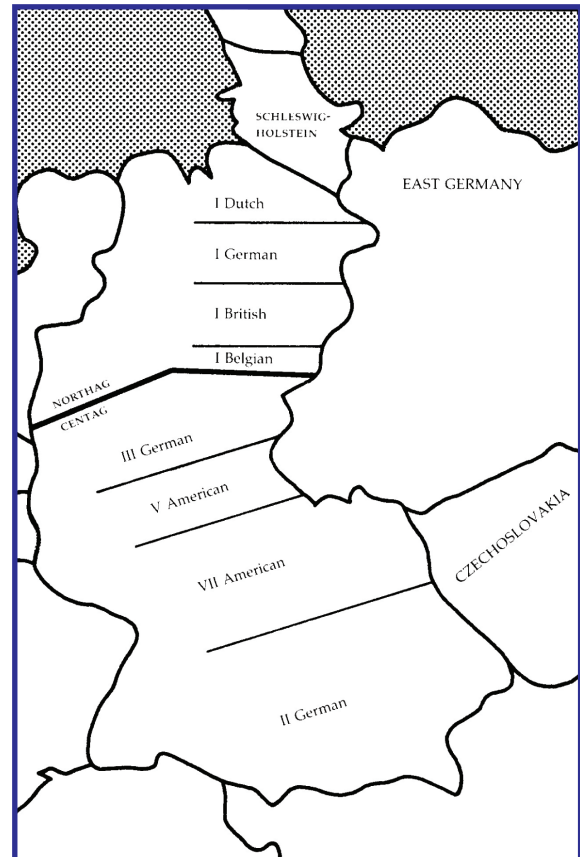
*Blitzkrieg is a form of warfare used by German Forces in World War II. In a Blitzkrieg, troops in vehicles, such as tanks made quick surprise strikes with support from airplanes. This tactics resulted in the swift German conquest of France in 1940. It is also known as 'lighting war'.*



*Most likely axes of advance in a Warsaw Pact attack against NATO*

**Source:** Mearsheimer John J. 1983, *Conventional Deterrence*. Cornell University Press. P 177

• **Attrition Strategy.** The other potential use of deterrence is with a strategy of attrition, which is basically a defensive strategy aimed at inflicting a high cost to the potential attacker. Deterrence is likely to hold. In this particular strategy, NATO forces were divided into eight corps sectors, which were aligned in layer cake fashion along the inter-German border and arrayed to support a strategy of forward defence. In other words, to meet the Pact offensive, the forces in each of NATO's corps sector were employed very close to the border between the two Germanies. The objective was to meet and to thwart an attack right at this boundary. NATO was confident that its deterrence and forward defence would provide an overwhelming disincentives to such war plan.



*Most likely axes of advance in a Warsaw Pact attack against NATO*

*NATO corps sectors, West Germany*

**Source:** Mearsheimer John J. *Conventional Deterrence*. 1983. Cornell University Press. P 170

• **Limited Aims Strategy.** Lastly, in the limited aims strategy, the attacker by surprise captures an opponent's territory and then bargains. He does not aim to defeat the enemy but to avoid contact and attempts to re-establish deterrence by offering the defender a way out through political negotiations. It is not costly to the attacker. But the limited aims strategy does have the danger of degenerating into a war of attrition and the cost may force the attacker to back down. Limited aims strategy remains as the next best option for an attacker because of force structure constraints he can not go for blitzkrieg but is compelled by political pressure to initiate action.

Acceptance of a military deterrence as a primary and independent defensive state strategy is obviously more cost-effective and modern. At the same time, this approach requires the engagement of fewer forces and means, remaining effective by including numerous uncertainties and providing capabilities of credible threat by rendering aggression unprofitable and by the possibility of punishment once the aggression is committed. Military deterrence may lay solid foundation of peace, characterized as 'peace motives'<sup>10</sup>, rendering aggression improbable due to its high cost. Apart from preventing aggression, military deterrence serves other purposes such as:

- Discouraging a potential aggressor from using its Armed Forces as a means of exerting political pressures.
- Preventing military aggression.
- Halting combat actions.
- Strengthening the position and authority of a medium- sized country.<sup>11</sup>

Another important aspect of conventional deterrence is the political will. It is this will not the military capability that is a threat to conventional deterrence. The military calculation may deter war but it is the political considerations which are usually

driven by domestic forces that compel the military to make suitable plans for war to alter. With limited aims strategy, even if the military does not have the blitzkrieg option, it would venture to break the deterrence.

During any crisis, tremendous pressure is placed on the military to devise a strategy but given that war or crisis is an instrument of policy, we may assume that civilian policy makers determine the specific political objectives. They then oversee the military's conduct of war, ensuring that military objectives commensurate with political goals. The central message for powers attempting to impose stability through conventional deterrence is that they need to watch the political will area more than military capabilities.

## CREDIBILITY OF DETERRENCE

Deterrence is a result of thinking of a potential action of the opponent and of the forces involved in such an action. Deterrence is "located in the human mind"<sup>12</sup> and concern not only the assets of the deterring country, but also what it will do, what it is committed to do, as well as what others think that it will do. The military potential necessary to carry out deterrence is the material basis of the threat. Such potential is never static and it undergoes continuous transformation depending on the dynamics of the situation in which deterrence is carried out. According to experts in the field, Huth,<sup>13</sup> the most significant factors influencing credibility of deterrence are as follows:

- Destructive potential of the deterring forces.
- Effectiveness of a retaliatory strike.
- Effectiveness of psychological actions.
- Survivability of military deterrence forces.
- Appropriateness of targets.

<sup>10</sup> Cited by Mearsheimer. pg 26.

<sup>11</sup> Boyd-Carpenter, Thomas. pg 145.

<sup>12</sup> Huth, E. pg 63.

<sup>13</sup> Ibid. Pg 4-11.

Credibility of a threat is also dependent on the scale of damages potentially inflicted, which involves proper selection of targets. A threat must contain a mixture of possibilities and the intentions of the deterring party as clear evidence of the fact that the threat would be fulfilled if necessary. The most important factor in making deterrence credible is “conviction on the part of the person making the threat that he has not only the potential, but also the will to use it”<sup>14</sup>. The credibility of military deterrent threats is based on three things; fear of war, uncertainty and chance. Uncertainty and chance can “cloud human judgement and lead to constant suspicions that this threat may be fulfilled to leading to war”<sup>15</sup>. Deterrence by uncertainty brings about doubts concerning any attack and the probable response. Factors that may contribute to deterring a potential aggressor from taking the risk include its overestimation of its opponent, its underestimation of itself, as well as inappropriate interpretation of its opponent's intentions. The threat of chance is connected with unpredictable complication that can occur despite efforts of both sides. The intervention of third parties or ineffective processes of making decisions are the examples of possibilities that can cause unwanted consequences.

The likelihood of any aggressor's attack is the result of four basic factors which when combined together can be described as a “risk calculation”<sup>16</sup> of the aggressor. Those factors are as follows:

- Aggressor's military target.
- Calculation of the costs of aggression.
- Credibility of possible deterrent reaction.
- Ability to achieve aggression targets in case of various reactions of a victim.

## SUCCESS AND FAILURES IN DETERRENCE

The immediate goal of deterrence is to dissuade another actor from carrying out a specific behavior

that is “prevention of the use of force”<sup>17</sup>. To achieve this result, it is stipulated that a state must carefully define the unacceptable behavior, communicate a commitment to punish transgressor (or deny them their objectives), possess the means to do so and demonstrate the resolve to implement its threat. When these conditions are met and those behaviors still occur, we can say that deterrence has fail.

Deterrence advocates that war would have occurred if deterrence had not been practised. In interpreting the success and failures, the most straightforward procedure is to ask first what happened on the last occasion that the defender, the United States, was challenged. It can be viewed that the military strategy based on deterrence had succeeded in Central Europe during the Cold War. Both, the Soviet and the United States managed to secure the national objectives of the two superpowers and of NATO and the Warsaw Pact. By using conventional military force in some cases and by threatening its use in others, the two superpowers have controlled tension in their relations with each other and have avoided a Third World War.

## EVALUATION OF THE CONCEPT

- **Conventional Deterrence, Strategy and War.** Conventional deterrence does not prevent war, it only at best manages and limit it. Perhaps such a concept has been in place ever since warfare but because of terminology coming out of nuclear deterrence, it seems to have a new appeal and now perhaps incorrectly even called strategy. Deterrence is more of an instrument to conduct international relationship than a specific military defence policy or a strategy. For example, the United States does not deter by issuing credible threats or by purchasing armed forces of a particular kind. Deterrence works when a would-be enemy chooses to be deterred. Another aspect is the interference into military strategy that has an effect of misinforming the political leadership. These political leaders may expect too much from the large defence structure and plan to use military force to further policies without

<sup>14</sup> Byers, R. Pg 32.

<sup>15</sup> Cited by Mearsheimer pg 36.

<sup>16</sup> Cited by Mearsheimer. Pg 37.

<sup>17</sup> Mearsheimer. Pg 28.



perceiving that the existence of the military force is primarily to deter and avoid war not to win them. Such fatal errors of over rating capabilities can occur in the absence of proper national security institutions.

- **Environment for Conventional Deterrence.**

Conventional deterrence depends upon large standing armies having suitable offensive weapons and a doctrine to fight big battles and campaigns as being demonstrated at Central Europe during the Cold War. This scenario is not relevant to third world countries where such concepts are becoming obsolete due to the fact of economic realities and social compulsions. This is being replaced by low intensity conflict as the preferred form of warfare. Conventional deterrence does not either deter a low intensity conflict nor does it indicate a strategy in such an environment. Conventional deterrence is not relevant to the most likely form of war.

- **Destabilizing.** Deterrence by definition introduces an element of competition and coercion and thus threatens stability. When deterrence is a policy, then going to war leads to collapse of policy. Conventional deterrence operates best in third party situation when a regional power defines commitments and deter other lesser power.

- **Arms Race.** Conventional deterrence has the potential for introducing an expensive arms race as military capabilities have constantly to be updated vis-à-vis potential opponents. This end result instability and threatens the very

existence of deterrence that the arms build up is trying to impose. It also leads to increase in defence expenditure than reducing it, as is commonly thought. The scenario in Central Europe between NATO and the Pact on arms race showed that each side has introduced new weapons and each side had soon offset its adversary's new weapons with its own. The Soviet arms effort had followed a pattern of steady increase, but the West efforts have periodically decreased until Soviet precipitated crisis induced rearmament.

## CONCLUSION

Deterrence by its very definition is a concept that generates tension and spurs competition. It is used to define relationship between two states, rather than become a policy or a strategy or shaping force structures. It is a concept that is totally alien to the most likely scenario which would exist and shape the course of future wars, particularly in the third world countries.

It would be necessary to look at other strategic options for a defence policy. Options that build upon the prevailing realities of the environment and reinforce stability rather than introduce conventional deterrence and invite a host of destabilizing influences. Malaysia for one must avoid the expenditure on large force structures in the name of attempting to retain a deterrence capability and regain initiative in the policy area by developing a military strategy that blends with and is built upon all the elements of our national power.

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