THE JOURNAL OF DEFENCE AND SECURITY

CONTENTS

Aim and Scope

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THE DECLINE OF US HELMED GLOBAL HEGEMONY: THE EMERGENCE OF A MORE EQUITABLE PATTERN OF INTERNATIONAL RELATIONS?

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ABSTRACT

This paper is a modest attempt at offering some tentative thoughts on one of the most momentous changes taking place in the contemporary world: the decline of United States' helmed hegemony and the possible emergence of a more equitable pattern of international relations with all its implications for global politics and economics. This paper shall begin with an analysis of the first phase of the US quest for global hegemony from 1945 to about 1991 then examine the causes of the decline of US hegemony in the current phase. This will be followed by an overview of a post-hegemonic world and its possible pattern of power. The paper ends with some reflections on some of the implications of this pattern of power for a more just and equitable world order.

***Keywords**: hegemony, post-hegemonic world, pattern of power*

INTRODUCTION

It should be stated at the very outset that US hegemony has never been global or total in the real sense. In 1945, it appeared for a while at least that the US would dominate the world totally. It had just emerged from the Second World War, (WW2) relatively unscathed, as the world's mightiest power. To demonstrate its military superiority to the world, it atom bombed Hiroshima on August 6 1945. Three days later, it bombed another Japanese city, Nagasaki, killing a total of two-hundred and fifty thousand people. This twin bombing had no justification since the Japanese military elite had already intimated to US commanders in the Pacific that their country was prepared to surrender [1]. The real motive behind the bombs, to reiterate, was to send a warning to all other powers that no one should fool around with the planet's supremo.

The US's military might was one critical dimension of its hegemonic power in 1945. It established its power in two other important areas as well. It set up the United Nations as the political infrastructure for its dominance and control. This is why it established within the UN an entity called the Security Council with five permanent members, the US and four of its allies at that time (Britain, France, the Soviet Union and China), each equipped with a veto, to ensure that the five would determine the direction of the world. For managing the global economy, which was even more important, the US elite devised three inter-related institutions: the General Agreement on Tariffs and Trade (GATT), the International Monetary Fund (IMF) and the World Bank [2]. GATT, now supplanted by the World Trade Organisation (WTO), was initiated ostensibly to create an environment

that was conducive to free trade--- free trade which often was not fair trade. The IMF's proclaimed goal is to stabilise exchange rates and foster global monetary cooperation though what it has done in fact especially since the nineties is to strengthen neo-liberal capitalism and to preserve the US dollar as the pivot of the global financial system. Similarly, the World Bank, whose main stated aim is to extend loans to developing countries has been asking them to promote liberalization, deregulation and privatisation which lies at the core of what has come to be known as The Washington Consensus.

The US was also at the forefront of science and technology immediately after WW2 which was one of the reasons for its economic dominance at that point. Its command over technology also gave the US a huge advantage over other states in the dissemination of information and in the popularisation of American culture.

In a sense, the combination and concentration of overwhelming military power, political power, economic power, scientific and technological power and information and cultural power in the hands of a single nation in 1945 was a unique and unprecedented moment in history. It would have set the stage for total US global hegemony. However, certain developments occurred in the years that followed which stymied the US's hegemonic ambition.

The first of these was the split between the US and the Soviet Union. Uneasy allies in WW2, the ideological chasm that separated capitalist US from communist Soviet Union came to the fore in the immediate post-war period. Fearing the expansion of Soviet influence from Eastern Europe --- most of the states there were Soviet satellites--- to Western Europe, the new US President, Harry Truman, enunciated the Truman Doctrine in 1947 that sought to check communism. His aggressive stance towards the Soviet Union culminated in a clash between US led Western allies and the Soviet Union over Germany in 1848-9. As a consequence, Germany was divided into the German Federal Republic (West Germany) and the German Democratic Republic (East Germany). The US and its European allies then established a military alliance ---- the North Atlantic Treaty Organisation (NATO) ---to counter what it perceived as the Soviet threat to Europe and North America. Six years after NATO was formed, in 1955, partly in response to the incorporation of West Germany into NATO, the Soviet Union forged the Warsaw Pact, a military agreement that linked the Soviet Union to its East European satellites. The lines were drawn for a confrontation between the US and its allies, on the one hand, and the Soviet Union and its satellites on the other--- a confrontation known as the Cold War.

It was the Cold War which checked US hegemony from the late forties to the early nineties. Indeed, the communist challenge to the US also emanated from another direction. In 1949, the pro-US regime in Beijing, the Kuomintang, was overthrown in a popular revolution led by the communist leader, Mao Tse-Tung. China, another war-time ally of the US, was now an adversary.

There were other communist challenges from Asia. As a result of the Korean War from 1950 to 1953, the peninsula was divided with North Korea professing communism.

Over the last 59 years it has been consistent in opposing US hegemony. Vietnam is another country in Asia which was a victim of US hegemony in the sixties and early seventies. More than 3 million Vietnamese died at the hands of the hegemon defending their land and their integrity.

It was not just communist states. The post-war decades saw the growth of nationalism and the rise of independent nation-states all over Asia and Africa. While some of these states were completely aligned to the US, a number of them were determined to protect their newly acquired independence and sovereignty [3]. The Bandung Conference of 1955 which brought a galaxy of Asian leaders to the Indonesian city was a manifestation of this determination. It was the Bandung spirit that gave birth to the Non-Aligned Movement (NAM) in 1961. NAM's leading lights such as Indonesia's Sukarno, India's Nehru, Egypt's Nasser, Yugoslavia's Tito and Ghana's Nkrumah were committed to the creation of a force in international politics that would be neither the pawn of the US nor the puppet of the Soviet Union. It is worth observing that in the early seventies, some members of NAM, propelled by their oil wealth pushed hard for the UN General Assembly to adopt resolutions on the establishment of a New International Economic Order (NIEO) and a New International Information Order (NIIO). It was, to a large extent, a response to US and Western dominance of both the global economy and the global media.

However, resistance to hegemony from the newly independent states of Asia and Africa and NAM began to lose momentum from the early eighties onwards. The explanation for this lies in a variety of reasons. The capitalist model of development pursued by some of these states which increased their dependence upon the centres of power in the West; different rates of growth and progress among them which impacted negatively upon their solidarity; preoccupation with their own internal challenges; conflicts between states which not only increased mutual antagonism but also sapped their resources; and most of all, the enormous difficulties encountered by nation-states seeking to preserve their independence and sovereignty within a global system dominated by the interests of the hegemon, would be some of the reasons that account for the weakening of resistance to US power.

The communist challenge also waned from around the same time. China chose to embrace the market and open itself to Western investments and technology from 1978 onwards, two years after the death of Mao. So did Vietnam in the mid- eighties. Like China, it felt that the market was a necessary pre-requisite for its economic development. More importantly, Vietnam has been most accommodative of US interests in the region.

In the case of the Soviet Union, both internal and external circumstances forced it to yield to US hegemony. The inability of a command economy to fulfil the consumer wants of a significant segment of society was a factor as was pervasive corruption which tarnished the integrity of the ruling elite. Since the Soviet State maintained its power through a degree of regimentation and repression it fuelled widespread anger and resentment against the communist system. The defeat of the Soviet Army in Afghanistan

after almost a decade of occupation also eroded the credibility and legitimacy of the State. In the midst of all these, the reforms introduced by President Mikhail Gorbachev through *Glasnost* (Openness) and *Perestroika* (Restructuring) only served to exacerbate the situation. One of the consequences of his reforms were the democratic uprisings in the Soviet satellite states - from Poland and Bulgaria to Czechoslovakia and Rumania - in 1989 which reverberated within the constituent republics of the Soviet Union itself. As a result of these upheavals the Soviet Union itself disintegrated from August 1991. It should be emphasised that the US under Ronald Reagan also had a hand in these upheavals. The pressures exerted directly and indirectly by the US and its agencies without doubt loosened the Soviet grip upon its satellites and hastened the disintegration of the Soviet Union itself [4].

With the disappearance of the Soviet Union, the most formidable challenge to US hegemony for more than four decades had evaporated. The US was once again the world's sole superpower. It was master of the universe. That unique 1945 moment had returned.

What this means, in other words, is that in 1991 the US was in a position to establish total, global hegemony. President George Bush Senior's ability to mobilise a whole spectrum of nations to liberate Kuwait from Iraq's Saddam Hussein who had invaded the Sheikhdom the previous year, in August 1990, in complete violation of international law, showed that the US commanded considerable support in the international arena.

But that support began to wane when it became clear that it was not just the liberation of Kuwait which was the goal of the US leadership [5]. It was using the Kuwait War to emasculate Iraq through crippling economic sanctions in pursuit of the US's - and Israel's - agenda. This agenda which is an important aspect of the ideology, interests and actions of the US elite is partly responsible for the decline of the US.

The paper shall now look at this decline from three angles. The first is related to the US elite.

DECLINE: THE ELITE

War, with the aim of ousting a leader or a government and installing in its place a servile, subservient regime has been a major policy platform of the US elite since the early nineties - though it was evident even in the first phase of hegemony. If the imposition of sanctions in order to punish a state or leader who refuses to submit to the will of the hegemon is a form of war, then Iraq would be the first of the US's wars in the current phase of its hegemonic drive [6].

After almost 13 years of sanctions which had taken a heavy toll on Iraqi society, the US and Britain, with the connivance of some Arab states, invaded Iraq, without authorisation from the UN Security Council, in March 2003. The pretext offered for the

invasion was that the Saddam government possessed 'weapons of mass destruction' - which needless to say was a monstrous lie [7].

The real motives for the conquest and occupation of Iraq are well-known by now: control over the oil of one of the world's major exporters of the commodity; control of one of the most strategically located countries in the world's most strategic region that is home to some of the most strategic seas and straits on earth; control over a country which has an abundance of water--- the Tigris and Euphrates--- which is specially crucial for arid Israel; the elimination of a leader and a regime that had utilised its wealth to develop a strong scientific and technological foundation a product of which was a nuclear plant that Israel destroyed in 1981; and the elimination of a leader and a regime that was firmly committed to the Palestinian cause which it supported with ample funds and was, at the same time, totally opposed to Israeli occupation of Palestinian land [8].

Because the motives behind the occupation of Iraq, it is so apparent, only served US and Israeli interests, anger and disillusionment with the hegemon and its surrogate remain high, in spite of US troop withdrawal. Besides, it is estimated that from 2003 to 2011 between 107,789 and 117,776 civilians had died as a result of the violence associated with the occupation [9]. Many Iraqis continue to carry physical and psychological scars of rape, of torture, of incarceration. A very big proportion of Iraqi society still has no access to the basic amenities of life. Youth unemployment remains a huge problem. Corruption is rife. There is no political stability either. Massive killings in the name of sects and factions continue [10]. The Shia-Sunni divide has become deeper and is a major cause of violence and bloodshed. In a nutshell, Iraq today is a broken society - when it was once an organised, functioning nation with a relatively prosperous middle-class.

The current Iraqi situation is a damning indictment upon US hegemony. That the hegemon has been forced to withdraw testifies to the failure of occupation. It is one of the reasons why the majority of the American population is opposed to their government indulging in military adventures of this sort in the future.

A section of American society also knows that the invasion and occupation of Iraq has been a colossal burden to the taxpayer. According to Economics Laureate, Joseph Stiglitz and Linda T. Bilmes the entire operation had come up to 3 trillion dollars by 2008 and is irrefutably much higher today [11]. While some US oil companies which have won handsome contracts would have benefitted from the occupation, for the ordinary American there have been no direct gains.

The US led NATO invasion and occupation of Afghanistan in October 2001 is another war that proves the failure of hegemony. The war was retaliation of sorts for the 9-11 attack on the Twin Towers in New York and the Pentagon in Washington D.C. since the Taliban regime in Afghanistan had refused to hand over the alleged master-mind of the attack, Osama bin Laden, to the US justice system. As an aside, the attack itself has raised some legitimate questions about who the actual perpetrators were and what the

motive was [12]. Whatever the truth, 9-11 became the rationale for launching a 'War on Terror.'

The US-led War on Terror, contrary to the denials of its initiators and their friends, has for the most part, targeted Muslim groups. Equating Muslims with terrorism and violence which has a long history behind it has become even more rampant [13]. 9-11 has thus rendered Islamophobia more pervasive than before and has even seeped into non-Western societies. This is why there are individuals who argue that the targeting of Muslims and Islam may well have been one of the motives behind 9-11 and the War on Terror.

There may have been other motives. Invading Afghanistan as the curtain-raiser in the War on Terror may have been linked to its strategic location as a nation in the vicinity of China and Russia, on the one hand, and Iran, on the other, and therefore of tremendous significance to the US. Control over Afghanistan also enhances access to the oil fields of a couple of Central Asian republics and Caspian Sea oil. It has been suggested that in terms of oil production the entire region could rival Saudi Arabia in the near future [14].

Since occupying Afghanistan, the US and its NATO allies have realised that they cannot stem the unending violence which is due largely to their presence. The Taliban who were ousted from power by the NATO invasion have become stronger and have much more support today because they are perceived as a movement fighting the foreign occupier. It is said that they control more of Afghanistan than the NATO backed Hamid Karzai government in Kabul.

The fighting between the Taliban and the NATO-Karzai forces has resulted in thousands of deaths. Tens of thousands of others have also become victims of this conflict mainly because of the displacement and dislocation it causes. Like the war in Iraq, Afghanistan has also been a financial albatross around the neck of the US and its other NATO partners. A 2011 report states that, "The final bill will run at least $3.7 trillion and could reach as high as $4.4 trillion, according to the research project " Costs of War" by Brown University's Watson Institute for International Studies" [15].

Once again, both the colossal loss of human lives and the exorbitant financial costs associated with the Afghan adventure condemn the US's and NATO's hegemonic agenda. They underscore - if one may reiterate - the failure of hegemony. The financial costs in particular have sapped the strength of the US economy. The hegemon's two full-scale wars have contributed to the nation's burgeoning debt. The world's largest debtor nation, - with a national debt that stands at 15.9 trillion as of 7 August 2012 [16] - it is quite conceivable that about a third of that debt is attributable to the wars the US has been embroiled in since the beginning of the last decade.

Apart from its national debt, there are other serious flaws in the economy which are also responsible for its deepening malaise. In 2007, the richest 1% of the population owned 34.6% of the nation's total wealth while the bottom 80% owned 15% [17].

Economic and social disparities in the US are the worst among all industrialised nations of the world. One out of six persons lives in poverty and needs food assistance. In July 2012, 8.3% of the population was unemployed.

Given the magnitude of its economic malaise, the US is in no position to dictate to the world. It is ironical that it is partly because of its quest for global hegemony, that the US is no longer capable of dominating the global economy. But it is not just hegemony that is the cause of its economic decline. Neoliberal capitalism which is the economic credo of the US elite concentrates wealth in the hands of a few. It is an economy that allows investment bankers, hedge fund managers and currency speculators to call the shots.

DECLINE: RESISTANCE

While the ideology, interests and actions of the US elite has been a major factor in the decline of the US, the resistance of many groups, movements and States to US hegemony has also played a significant role.

The resistance from Latin American states, a continent which for nearly two centuries has borne the ignominy of the hegemon's hubris. In the last 10 years or so, the situation has been changing as one Latin American state after another stands up to defend its independence and integrity.

Before the current period, there was one country though that resisted the might of the US with invincible courage and indomitable fortitude [18]. Because Cuba, an island republic of 11 million people, has refused to submit meekly to its giant neighbour and has insisted upon pursuing its own communist path to development, it has been subjected to severe sanctions for the last 51 years, an invasion, biological warfare, bombings, an airline explosion, and countless attempts to assassinate its revolutionary leader, Fidel Castro. To put it simply, the US has been at war with Cuba for decades [19].

The ability of the Cuban leadership to preserve the honour and dignity of the country for so long has inspired other states in Latin America to resist US hegemony and to enhance their own sovereignty and independence. In the present phase, Venezuela under Hugo Chavez was perhaps the first to follow Cuba's example [20]. Others such as Bolivia, Ecuador, Nicaragua, and to a lesser degree, Brazil and Argentina have also sought to reduce US power and influence upon their economies. There has been a sincere attempt to restructure their economies so that the well-being of ordinary citizens and the interests of the nation would take precedence over elite privileges and the demands of the hegemon in Washington.

What is remarkable about the resistance of some of these Latin American states is their foresight in trying to forge a regional alliance which would endow them with the collective strength and solidarity to withstand pressures from the US. This regional

outfit called ALBA, the Bolivarian Alternative of the Americas, was the brainchild of Chavez who in April 2001 objected to the US idea of establishing a Free Trade Area of the Americas (FTAA) which would have perpetuated US hegemony over Latin America, and instead proposed an organisation that would facilitate the economic, social, political and cultural integration of Latin America and the Caribbean. ALBA became a reality in December 2004 with the signing of an agreement between Venezuela and Cuba. Today, it has eight members. Apart from the two founders, the others are Bolivia, Nicaragua, Ecuador, the Commonwealth of Dominica, Antigua and Barbuda, and St. Vincent and the Grenadines [21].

Among the principles of ALBA are a commitment to fair trade; promoting trade and investment for attaining sustainable and just development; encouraging capital investments within the region; seeking energy integration among countries in the region; defending the cultural identity of the people of the region; and evolving common foreign policies among ALBA states [22]. Since its formation, ALBA has undertaken some concrete projects. It has for instance facilitated the delivery of about 96,000 barrels of oil per day from Venezuela to Cuba while in exchange Cuba has sent 20,000 medical staff and thousands of teachers to the poorest states in Venezuela. Through mutual assistance programmes of this sort, ALBA hopes to enhance the resilience of individual states and the region as a whole as it confronts US hegemony.

The other region which has had to face US helmed hegemony is of course West Asia and North Africa (WANA). For a lot of people in WANA the stark reality of US hegemony presents itself through the powerful presence of Israel. Since the US is the patron, the protector and the provider of Israel, the people know that the annexation and occupation of Palestinian land and the expulsion and annihilation of the Palestinians would not have been possible without the collusion of the hegemon [23]. So when Palestinians resist Israeli arrogance --- as they have been doing for 64 years - they also see it as resisting US power. The steadfastness and perseverance that they have shown in their resistance places them in a class by themselves.

The Lebanese also deserve accolades for their resistance to Israel which has invaded their small country on three occasions. Indeed, since the advent of Hizbollah in 1982, Lebanese resistance has become more organised and focussed. It is partly because of this that the Israeli armed forces suffered a major setback when it sought to crush Hizbollah in 2006 [24].

Syria - whose Golan Heights has been under Israeli occupation since 1967 - has also been unyielding in its resistance. The Syrian leadership is that vital link that connects Iran to the Hizbollah. Together, they constitute a steady, solid ring of resistance to US-Israeli dominance and control. This is the main reason why Israel working hand in glove with the US, Britain and France and aided and abetted by states in the region such as Saudi Arabia, Qatar and Turkey are hell-bent on crushing Syrian President Bashar Al-Assad [25].

In fact, few other nations in the world have been as consistent as the Islamic Republic of Iran in its opposition to US hegemony. The birth of the Republic itself in 1979 was an expression of the people's rejection of US hegemony and its client ruler on the peacock throne. For the last 33 years, the Iranian people have been subjected to wide-ranging sanctions, assassinations, terrorist plots and even cyber-attacks in order to coerce the leadership into acquiescence with the US-Israeli agenda in WANA. But the people and the leadership have stood firm. Iran's insistence that its nuclear programme is for peaceful purposes and is not geared towards the production of nuclear weapons - in spite of all the aggressive posturing from Israel and the US - is an example of that resoluteness [26].

It should be mentioned at this point that Syria and Iran have forged close ties with various countries in Latin America which are also resisting hegemony. Economic and cultural relations have been strengthened with Cuba, Venezuela, Ecuador and Brazil. In December 2010, Syria and Iran were accepted as observer states in ALBA. This bridge between WANA and Latin America is of tremendous significance for the struggle against hegemony.

There are other states in WANA who have also resisted hegemony - hegemony often expressed through Israel. Libya under its mercurial leader, the late Muammar Gaddafi, was also an opponent of US hegemony. Apart from his rejection of Israeli occupation of Palestinian and other Arab territories, Gaddafi resisted all attempts by Western oil corporations to gain control over Libyan oil which he had nationalised at the outset of his 42 year-old rule. He was also an enthusiastic advocate of African unity and was particularly keen on developing a single African currency that would reduce the continent's dependence upon the US dollar. At the same time, Gaddafi made it known publicly that he was opposed to the US sponsored, German based concept of African military cooperation called The Africa Command (AFRICOM) which he regarded as another form of Western neo-imperialism. For all these reasons, Gaddafi had to be eliminated [27].

One can argue that both Somalia and Sudan have also been victims of hegemonic politics. With its strategic location at the Horn of Africa and its potential oil reserves, Somalia is a magnet that has attracted the US, on and off, for the last 20 years. Its tribal and factional politics have been manipulated by both the hegemon and groups resisting the hegemon such as affiliates of Al-Qaeda, aggravating the violence and lawlessness that have blighted the land for so long. Sudan, a huge oil exporting nation, divided by internal religious, sectarian and tribal loyalties was also an easy prey for regional and global predators with their own nefarious agendas. In this regard, the Khartoum government, always wary of US and Israeli designs, in the end failed to protect the territorial integrity of Sudan and had to acquiesce to the separation of the south from the north of Sudan.

Sudan and Libya, like Syria and Iraq, some critics observe, are - or were - opposed to hegemony but are - or were - led by autocrats. Shouldn't we condemn their suppression of the rights of their people? We should, but we should also not hesitate to oppose global hegemony and all that it stands for. Those who resist hegemony should be supported

while we make it abundantly clear that if they are autocratic we would want them to introduce democratic reforms. This sort of position is quite different from those who are opposed to autocratic regimes when it suits their interests but are happy to hobnob with autocracies and endorse the suppression of democratic rights when it serves their agenda [28].

In Afghanistan, the Taliban continues to resist hegemony. The Taliban's violence is also an issue which critics have raised. Here again, we should repudiate their violence without losing sight of the larger significance of resistance to hegemony.

Russia is also resisting US helmed hegemony as is obvious from the triple veto it has cast in the UN Security Council in the last few months to thwart Machiavellian moves by Western powers and their regional clients and proxies to further their hegemonic goal in Syria [29]. It is not just in relation to Syria. In recent years, Russia has witnessed manoeuvres by the US in Georgia, in Ukraine and in some of the East European states which have convinced her that she has to both sharpen her diplomatic skills and strengthen her military muscles in order to protect the sovereignty and integrity of the Russian Federation.

A triple veto was also cast by China in the Security Council on the Syrian crisis for the same reason. China has become increasingly conscious of why and how US's hegemonic agenda is going to impact upon her. She is after all one of the primary targets. This is why when US President, Barack Obama openly proclaimed that "as a Pacific nation, the United States will play a larger and long-term role in shaping this region (Asia-Pacific) and its future" [30], China began to watch US moves closely. The US plan to establish a base in Darwin, Australia; to deploy ships in Singapore; to forge closer military ties with the Philippines; and to enhance its military cooperation with Japan and South Korea are matters of concern for China. Viewed against this backdrop, it is not surprising that China has decided to adopt a firm position on the question of its claims over the South China Sea [31]. In other words, it will resist any attempt by the US to impose its hegemony over Asia-Pacific. China's ally North Korea - its outlandish pronouncements notwithstanding - is also an uncompromising opponent of US led hegemony.

There are two other elements that are part of resistance that should be recorded. In the current phase of hegemony, as in the past, there are numerous citizens' groups that are struggling for a world that is more just and egalitarian [32]. In a sense, the mass protest movement against the Iraq war in 2003 was a boost to citizens groups opposed to hegemony though a lot of the energy and enthusiasm generated at that time has since dissipated. A small segment of the media also challenges US power. These media outlets are sometimes the only channels of expression available to global dissidents.

If we reflected upon resistance to hegemony in different parts of the world - from Latin America to East Asia - it is apparent that in each and every instance it is the US's drive for control and dominance that compels its targets to respond. This is a dimension

of international relations that is concealed from the general public by the media which is often in cahoots with the hegemon. The impression given by the media is that the target of hegemony is the party responsible for the conflict.

DECLINE: RISE

Resistance to hegemony is intimately linked to the rise of new centres of power. For instance, ALBA is both resistance and rise. Its resistance could give rise to a new pattern of inter-state cooperation in Latin America and the world. Similarly, Iran's scientific output is not only a contribution to resistance but also a sign that the country's scientific foundation is viable enough to enable it to catapult into the future. Russia is not only resisting hegemony but also preparing to play a bigger role in terms of security and politics within a region that it categorises as 'Eurasia.'

However, of all the nations that are on the rise, it is China's ascendancy that has astounded the world. Thirty years after abandoning the communist model of development and opening itself to free enterprise and the market, China has become the world's economic powerhouse. Through domestic firms and foreign corporations operating in China, the world's largest nation produces goods for the entire human family. From Bangkok to Buenos Aires, 'Made in China' is a ubiquitous trade label. Both in manufacturing and trade China is number one.

China also has massive investments everywhere. It has poured billions of yuan into infrastructure development in almost every African state just as it is building oil rigs in Venezuela, a hydroelectric project in Ecuador and a railway system in Argentina [33]. In Asia itself, there is perhaps not a single country that has not benefitted from Chinese investments in manufacturing or infrastructure or from trade ties with China.

In all three continents, the Chinese presence is viewed favourably. For instance, "a 2007 Pew Research Center survey of 10 sub-Saharan countries found that Africans overwhelmingly viewed Chinese economic growth as beneficial. In virtually all countries surveyed, China's involvement was viewed in a much more positive light than America's; in Senegal 86 per cent said China's role in their country helped make things better, compared with 56 per cent who felt that way about America's role. In Kenya, 91 per cent of respondents said they believed China's influence was positive, versus only 74 per cent for the United States" [34].

China's global economic role is a reflection of fundamental strengths in its economy. Its foreign reserves are the largest in the world at 3.24 trillion in June 2012. Its domestic savings rate is high. Its adult literacy rate is now almost 95 per cent. "Shanghai's 15 year-old students were recently ranked first globally in mathematics and reading as per the standardised PISA metric. Chinese universities now graduate more than 1.5 million engineers and scientists annually" [35].

To enhance its economic ascendancy, China has been in the forefront of a couple of groupings. The BRICS --- Brazil, Russia, India, China, and South Africa--- brings together five large economies at more or less the same level of development which through joint programmes and initiatives hopes to create a more equitable global system. China is also a founder of the Shanghai Cooperation Organisation (SCO) in which it partners Russia, Kazakhstan, Kyrgyzstan, Tajikistan, and Uzbekistan, with the aim of further strengthening economic and social cooperation.

As an aside, China's phenomenal economic transformation has also seen China becoming more prominent globally in other areas as well. International sport is one such activity. China's stellar performance at the 2012 Olympics in London which came on the heels of its splendid showing at the Beijing Olympics in 2008, confirms its position as a great sporting nation.

China's successes do not mean that there are no weaknesses in the system which can impact upon its rise. Environmental protection could be better. Issues of governance related to public accountability and integrity should be addressed with greater vigour and sincerity. People's participation in the political process should be enhanced. The gap between those who have-a-lot and those who have-a-little in the cities should be reduced, just as income disparities between urban and rural sectors should be narrowed.

Having said that, no one can deny that the rapid and dramatic rise of China in the last few decades is an amazing achievement without precedent or parallel [36]. It is an achievement which worries the hegemon, the hegemon who fears losing his dominance and therefore seeks to contain and encircle China [37].

A POST-HEGEMONIC WORLD

China's phenomenal rise signals the birth of a post-hegemonic world. There are of course sceptics who dispute this. China they say will be the next hegemon.

There is no basis for drawing such a conclusion. For three sets of reasons, it is very unlikely that China will attempt to conquer other lands militarily or usurp their resources through aggression or massacre hundreds of thousands of people in its drive to control and dominate the world.

One, historically, China has never sought hegemony even when it possessed the strongest fleet in the world during the time of the Ming Dynasty. The commander of the fleet, the famous admiral, Zheng He, made seven voyages to various parts of the world but did not pillage or plunder the lands he visited. It is also a matter of some significance that the land territory that China occupies today is what it was since the Western Han Dynasty (206 BC- 24 AD).

It is true that throughout history China has been obsessed with safeguarding its borders. It has sometimes resorted to force to protect its territorial integrity. But this is quite different from marauding land and ocean in order to subjugate some unknown alien people through barbaric violence.

Two, even in the contemporary period, in spite of China's voracious appetite for oil and gas and other minerals, it has not tried to control the source of these resources. All it wants is access, not control. This is why China does not have a single overseas military base. Indeed, China is the first nation to emerge as a big power on the world stage that has not resorted to imperial wars or bloody conquests or the usurpation of someone's resources in its ascent up the ladder. To put it in another way, China's rise to power without violence, and through peaceful means, is unique. This is something that the world should appreciate.

Here again, one must concede that when it comes to what it defines as its territorial integrity, China has no qualms about using force. This is what it did in 1962 vis-a-vis India in the dispute over the McMahon Line. In 1974 and 1988, China clashed with Vietnam over the Spratly Islands. But even in such conflicts, China is more inclined towards bilateral talks, negotiations and peaceful settlement.

Three, all said and done, China, the world's second largest economy, is still a poor country and is determined to concentrate upon raising the standard of living of its people in the next three or four decades. Seeking hegemonic power, especially through war and violence, is certainly not on its agenda. Chinese policy-makers and analysts never cease to remind the world that with 1.3 billion people, "China's per capita GDP is only US 3,800, ranking about 104th in the world, even lower than many African countries. By the United Nations standard of one US dollar a day, 150 million Chinese are still living below the poverty line" [38].

It is also important to note that China is perhaps the only big power that has a clause in its Constitution that repudiates hegemony. The Chinese Communist Party (CCP) also renounces hegemony. Every major Chinese leader in the present phase of US helmed hegemony from Deng Xiaoping to Hu Jin Tao has pledged that his country will never ever seek hegemony. This was also the position of the late Chinese Prime Minister, Chou En-Lai [39].

Apart from historical and contemporary evidence, constitutional guarantees and verbal undertakings, that underline China's non-hegemonic character and orientation, one must also acknowledge that the regional and global environment will not allow any one nation to dominate and control regional and international politics and economics. Even within China's immediate neighbourhood, countries such as Japan and South Korea are economically powerful and politically influential. If South and North Korea re-unify over the next two decades - which is not inconceivable - it would be a formidable force which the world will not be able to ignore.

In Southeast Asia, Indonesia and Vietnam, with huge populations and credible economic performances, could well emerge as important players in the future. India is often spoken of as a rising power. Iran has the spiritual strength, the material resources and the human capital to contribute towards a more equitable global order. So has Turkey whose economy and society exhibit some positive traits. Russia, given its history, its resources and its leadership is destined to become a major world actor again. South Africa, Brazil, Argentina, Venezuela and Cuba, among others, all have the potential of emerging as important centres in a post-hegemonic world.

The United States, though no longer a hegemon, will still be a significant player. Its northern neighbour, Canada, will continue to wield some economic clout. And in Europe, there is no doubt at all that Germany which in the midst of the European sovereign debt crisis has remained resilient and viable will be a major force to reckon with well into the future.

There will be other states in all continents that will also rise to the forefront in a post-hegemonic world. The post-hegemonic world will have multiple centres of power, some more important than others. Even in their exercise of power, these centres would be varied, with some commanding more clout in politics, others exhibiting more economic strength and yet others displaying their prowess in the realm of culture. What is important is that there will be no one dominant centre combining the different manifestations of power and coercing all others into submission.

There is a trend in international relations which, could well strengthen post-hegemonic politics and economics. This is the formation of regional bodies. For instance, the birth of ALBA. It should be mentioned in passing that there is an even newer regional grouping from that part of the world called CELAC, The Community of Latin American and Caribbean States, which hopes to enhance cooperation in economic, security and social matters among all the 33 states that constitute the Latin American and Caribbean region [40]. The role of BRICS and the SCO. NAM was mentioned in the context of the first phase of hegemony. Then there are the older regional entities such as the Arab League or the Association of Southeast Asian Nations (ASEAN) or the South Asian Association for regional Cooperation (SAARC) or the African Union. There are also outfits such as the European Union and the Organisation of Islamic Cooperation (OIC).

Not all the above bodies will be able to contribute to a post-hegemonic world. In fact, some of them like the Arab League are mere vehicles for the perpetuation of US helmed hegemony in WANA. Others - whatever their current orientation - may choose to adjust to a post-hegemonic world as it emerges as the new reality.

A POST-HEGEMONIC WORLD: WHAT IT MAY SIGNIFY

A post-hegemonic world may be less unjust and iniquitous. When power is diffused and dispersed, there is a greater possibility of the different states and regions adjusting to,

and accommodating, one another. The interests of the various actors, big and small, will have to be given due consideration. As a result, there will be some sort of equilibrium, a just balance.

A degree of justice manifesting itself in a number of areas in a post-hegemonic world.

One, in the observance and implementation of international law.

Because of hegemonic power, political leaders who had fabricated a lie to justify the invasion and occupation of a sovereign nation leading to the massacre of hundreds of thousands of people are not hauled up before the International Criminal Court or some other international tribunal. In a non-hegemonic world, a crime against humanity of such magnitude would not go unpunished.

Two, in the effective and honest functioning of international institutions charged with protecting global peace such as the UN.

Since a number of major wars in the last 67 years are linked directly or indirectly to the hegemon, its clients and proxies, or other big powers, and their pawns, the UN whose primary purpose is to save humankind from the scourge of war, has not been able to play its role. It is hoped that in a non-hegemonic world, the UN will be in a better position to keep the peace.

Three, in defending the dignity of the victims of oppression and aggression wherever they may be.

Here again, the power of the hegemon has been a primary factor in denying justice to one of the longest suffering victims of dispossession in the contemporary world, namely, the Palestinians. In a non-hegemonic world, one hopes that justice will finally be delivered to them.

Four, in ensuring that iniquities in the global economy are eliminated so that development will bring the greatest benefits to the greatest number of people on earth.

It is largely because of the hegemon and economic elites elsewhere that speculative capital dominates the global economy and neo-liberal capitalism holds sway to the detriment of ordinary women and men. Since some of the leading states in the emerging non-hegemonic world are not beholden to neo-liberal capitalism, there is a possibility that this scourge will be eliminated.

Five, in overcoming some of the impediments that prevent the global community from adopting more effective measures aimed at protecting the environment and saving the planet.

The hegemon and elites in many other societies are averse to dealing with the fundamental causes of the environmental crisis since they impinge upon their vested interests. When hegemonic power disappears, it may be easier to achieve and to implement a just global consensus on saving the planet. I am sure there are other areas too where the end of hegemonic power and the rise of a non-hegemonic world may bring justice.

CONCLUSION

However, if justice is to become the leitmotif of a non-hegemonic world, the people as a whole should exhibit a deep and abiding commitment to justice. It should be a vision of justice that is inclusive and universal. Only such a vision will cater for the interests and meet the aspirations of all the states that are part of tomorrow's non-hegemonic world.

For justice to be inclusive and universal, states and regions should have some empathy for the other. Justice, in other words, should be accompanied by compassion. There is yet another value which is also important. This is restraint. It is restraint that indicates that one is disciplining oneself with the interests of the other in one's heart. Likewise, responsibility is a virtue in a non-hegemonic world. A profound sense of responsibility ensures that power is neither aggrandized nor abused. For if the exercise of power fails to meet ethical standards, hegemonic tendencies may set in - which would be a bane in a non-hegemonic world.

These values and virtues essential for sustaining a non-hegemonic world are embodied in all our great spiritual and philosophical traditions. They are our common legacy. They bind us together as human beings [41]. They should be at the core of our popular consciousness.

In the ultimate analysis, this is perhaps the most compelling reason why a non-hegemonic world is imperative. If hegemony distorts our humanity, a non-hegemonic world celebrates our humanity [42].

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THE HUMAN DIMENSIONS OF SOLDIERING: A PERSPECTIVE ON FUTURE REQUIREMENTS IN THE COMPLEX OPERATIONAL ENVIRONMENT

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ABSTRACT

For past centuries, military leaders have debated the qualities desired in a soldier. It is easy to find that nearly every prominent military leader and researcher has advocated the importance of attributes such as courage, integrity, perseverance, intelligence, loyalty and self-confidence. All militaries consider the soldier central to mission success and emphasize the importance of better understanding moral, cognitive, and physical aspects of soldier performance across a full spectrum of operations. The human dimension of soldiering meets the complex operational environment which exists today and in the near future, with the range of threats during this period extends from smaller, lower-technology opponents using more adaptive, asymmetric methods to larger, modernized forces able to engage forces in more conventional, symmetrical ways. Due to these increasing complexities coupled with rapid state of the art technological advancements, in future soldier technology envisage a different operational environment in the future but without the consideration and understanding of the capabilities of our soldiers both physically, mentally in both moral and cognitive dimensions which will ultimately limit the effectiveness of both the technologies and our soldiers. This paper describes the human dimension as the moral, cognitive, and physical components of soldier and organizational development and states that the Army concepts acknowledge the soldier as the centerpiece of the Army, but none, individually or collectively, adequately addresses the human dimension of future operations. Nevertheless leadership and military education provides the pillar of strength for the individual soldier to perform besides the support of his family.

Keywords*: Human Dimension, operational environment, complex operational environment, military leadership*

INTRODUCTION

Soldiers need to be mentally prepared to perform well on operations. But there is little agreement on how commanders can best prepare the individual soldier and the unit for deployment. The Armed Forces cannot afford to focus only on current operations as a predictor of the future. It must prepare people so that future commanders can sustain operations in a time of persistent conflict. Approved military concepts describe the

employment of soldiers in the future. This concept reaches beyond the issues of equipping soldiers with hardware tools of war into the more subtle moral, cognitive, and physical components of soldier development.

The human dimension is based on professional mastery and mission command, and requires high standards of training, education, doctrine, organization, and leadership [1]. The dimension is about the way people collaborate to share their awareness of the situation, so that they can fight more effectively. It requires trust between warfighters across different levels, and trust between warfighters and their supporting agencies. This emphasis has evolved from the increasingly complex and diverse operating environments in which soldiers perform, and the increased demands and stresses that are unique to current conflict (e.g., small-unit conflicts and asymmetrical warfare). Furthermore, due to these increasing complexities coupled with rapid technological advancements, the development of the very technologies aimed at supporting the military mission without the consideration and understanding of the capabilities of our soldiers will ultimately limit the effectiveness of both the technologies and the soldiers. The military leverages enhanced means to identify, access, retain, and develop soldiers with unsurpassed cognitive, physical, and social (moral and cultural) capabilities [2]. Soldiers are enabled by technology, cognitive, medical and social sciences to achieve excellence in small unit competence and to dominate increasingly complex operational environments. Soldiers are able to leverage technologies and processes that optimize and restore cognitive and physical performance.

This paper will look at the human dimension of soldiers in meeting the challenges of the complex operational environment (COE) in the moral, physical and cognitive components in reaction to the man, machine, and method interface whereby leadership skills will spearhead the major challenge. This paper will also highlight on the potentials, relationship and correlation of the human dimension of soldiers in meeting the challenges of the current and future complex operational environment.

THE HUMAN EVOLUTION

Human characteristics are defined as those traits that distinguish people from other species. They include the ability to change or alter their surroundings makes them to be unique from the rest of the animals. "Human are self-aware social mammals generally possessing the ability to reason, speak and use complex tools in complex environment to achieve an objective" [3]. Then, we have the human trained to be soldiers who kills without care or remorse, shows no fear, can fight battle after battle without fatigue and generally behave more like a machine than a man? "A soldier is a man or woman who selflessly devotes their life to ensure that all citizens of their country can sleep with peace of mind and live out day to day without fear. A soldier gives you your freedom, and asks nothing in return" [4].

Differences exist in individual genetics, their environmental and social/psychological influences, and the complex genetic-psychological interactions, which influence virtually everything about an individual soldier**.** In the past military leaders have debated the qualities desired in a soldier and has advocated the importance of attributes such as courage, integrity, perseverance, intelligence, loyalty, self-confidence and many more [5]. Technology can provide the tools and avenues by which wars are fought but it is the individual soldier on the battlefield facing life and death who remains a constant. Due to the increasing complexities coupled with the rapid state of the art technological advancements, future soldier technology envisages a different operational environment in the future which is rather complex. A soldier differs from a civilian in that he calls the final shots with his thinking cognitive capabilities and the psychomotor actions on whether he kills the enemy or the enemy kills him.

THE COMPLEX OPERATING ENVIRONMENT LANDSCAPE

History also shows us it is very hard to do, and particularly with the military, it always seems to be preparing for the last war instead of the next. Predicting the future is not possible, but tools such as trend monitoring, scanning, and scenarios are very useful in assisting leaders with developing vision and strategy about future conflicts [6]. The Fourth Generation War (4GW) holds that warfare has progressed through four generations from the use of *massed manpower* to *firepower*, then *maneuver*, and now evolved in the form of *insurgency* that employs all available networks political, economic, social, military to convince an opponent's decision makers that their strategic goals are either unachievable or too costly [7] .

The operational environment is a composite of the conditions, circumstances, and influences that affect the employment of military forces and bear on the decisions of the unit commander [8].

The complex operational environment (COE) is the overall operational environment that exists today and in the near future, with the range of threats during this period

extends from smaller, lower-technology opponents using more adaptive, asymmetric methods to larger, modernized forces able to engage forces in more conventional, symmetrical ways. In some possible conflicts (or in multiple, concurrent conflicts), a combination of these types of threats could be especially problematic [9].

The Operational Environment (OE) sets the conditions that may lead to conflict. An ever-shrinking pool of vital resources, (food, water, energy), combines with the growing global population to stress the capacity of the world to provide an acceptable quality of life for all. The current operating environment will continue to evolve, presenting ground forces in the future with an ever increasing challenge to defeat irregular and hybrid enemies that are connected by cell phone, computer network and satellite phone technology [10]. In most cases, support from the local population in defeating these threats cannot be assumed. In addition, the possibility of major combat operations remains real. The future complex operating environment will include adversaries ranging from well-led, well-trained and well-equipped conventional military formations experienced in close fighting to irregular and hybrid forces.

Our most likely opponents will continue to be irregular forces, extending from trained insurgents focused on local or regional regime change or global jihad to criminals and tribal groups focused on maintaining power within their local areas for economic reasons. In some cases these enemies will work together, forming a hybrid threat that combines conventional and unconventional units, equipment and tactics. Regardless of makeup or aim, however, the enemy will continue to be adaptive and networked, employing a range of weapons and technologies along with conventional and improvised weapons [11].

At the same time, the information age has dramatically expanded people's access to knowledge and information [12]. These phenomena in shrinking resources, growing populations, ubiquitous access to real-time information to interact and merge to create a global relative depravation. Collectively, these trends in the domestic and worldwide OE will affect the military's most critical resource, the soldier. These trends include social and cultural factors; the dynamics of geopolitics and governance; the globalization of economics and resources; the revolution in science, technology, and engineering; and, global climate change [13]. While globalization is not a new phenomenon, the rapidly accelerated blending of business, technology, and culture coupled with near instant media coverage offers both opportunities and threats for the future. The effects of globalization include interdependent economies, the empowerment of non-state actors, porous international boundaries, and the declining ability of the nation-state to control fully its own territory and economy, and to provide security and other services. Globalization shrinks the world and forces the interaction of differing societies and cultures.

Ubiquitous and cheap access to the World Wide Web and telecommunications has made knowledge universally available and facilitate targeted information engagement. Social media such as facebook, twitter has paved the way for open communications especially the Y generation soldiers in speaking openly on all matters. Climate change has the potential to result in multiple chronic conditions occurring globally intensifying

the causes of instability and persistent conflict. Demographic and economic pressures multiply as world population grows and the distribution of wealth and resources change [14]. Ethnically and culturally, these "Millennials" or the Y Generation are a diverse and fragmented generation. They are emerging as a tolerant, pragmatic, ambitious, and optimistic group. They believe themselves to be influential and unique.

THE HUMAN DIMENSION CHARACTERISTICS OF A SOLDIER
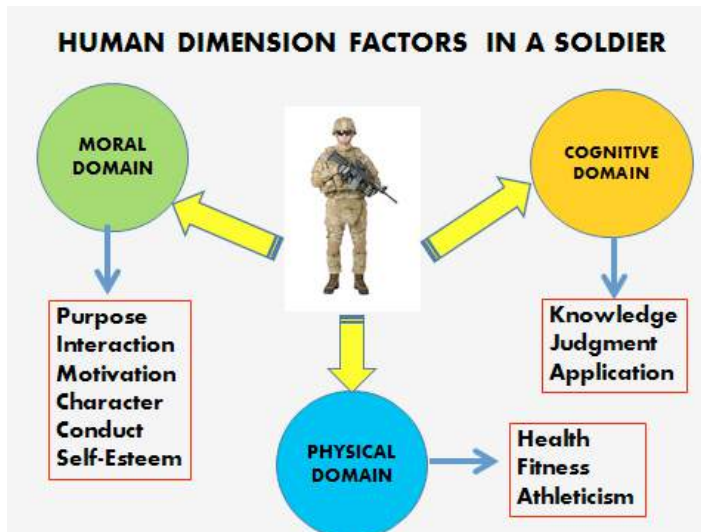
The human dimension encompasses the moral, physical, and cognitive components of soldier, leader, and organizational development and performance essential to raise, prepare, and employ the military in full spectrum operations. This definition recognizes that soldier readiness everything from training proficiency to motivation to well-being is fundamental to the military's future success. It introduces the concept of holistic fitness, a comprehensive combination of the whole person including all components of the human dimension triad. The Army leverages enhanced means to identify, access, retain, and develop soldiers with unsurpassed cognitive, physical, and social (moral and cultural) capabilities. Soldiers are enabled by technology, cognitive, medical and social sciences to achieve excellence in small unit competence and to dominate increasingly complex operational environments. Soldiers are able to leverage technologies and processes that optimize and restore cognitive and physical performance [15].

The human dimension definition also acknowledges that war, notwithstanding the inevitable changes in the purposes, ways and means, will remain a savage clash of wills. Future conflict will remain complex and chaotic, and human frailties and irrationality will continue to characterize war's nature [16]. Ambiguity, danger, physical exertion, friction, and chance, constitute the climate of war, which contributes to the fog of war with which commanders must contend in future operations. The 'ugly human implications'

of persistent conflict is also evident in the rising number of soldiers identified with Post Traumatic Stress Disorder. "By one estimate, more than 300,000 of the nearly 2 million U.S. servicemen and women deployed since 9/11 suffer from the often-debilitating condition, with symptoms that include flashbacks and nightmares, emotional numbness, relationship problems, trouble sleeping, sudden anger, and drug and alcohol abuse [17]. Researchers at Stanford University feel this number could climb to over 500,000 in the next few years [18].

Technology, intelligence, and operational design can reduce uncertainty. However, commanders must still make decisions based on incomplete, inaccurate, or contradictory information. These factors will continue to play a predominant role in the environment of future full spectrum operations. USMA Department of Systems Engineering, West Point conducted a research on the Whole Soldier Performance [19] which displays the final functional hierarchy of US soldier performance attribute groupings in the moral, cognitive, and physical domains as seen in **Figure 1**.
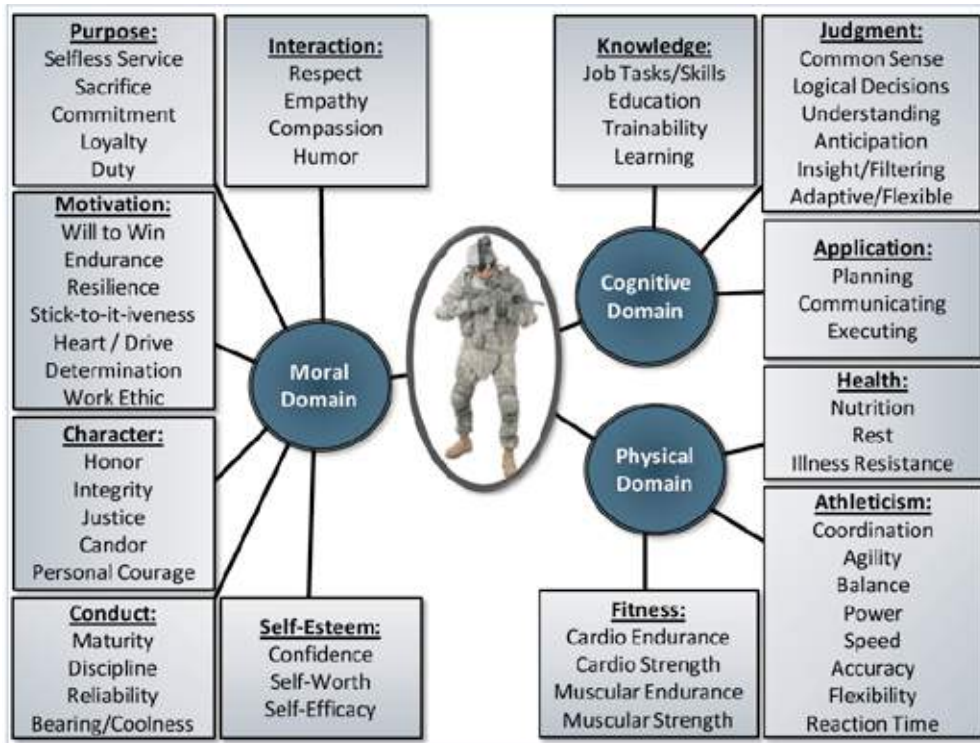

Figure 1. Whole Soldier Performance Attributes

Moral Domain

Within the moral domain, the Army culture that previously focused on major combat operations must begin to shift to a culture that recognizes changes in the Army's role and responsibilities including a broader range of military operations [20]. Purpose relates to why a soldier does things. The main sentiment of those consulted centers

around selfish versus unselfish attitudes. Motivation relates to the level of effort that soldiers demonstrate to accomplish the mission. Character relates to the manner in which soldiers accomplish the mission. Conduct relates to how soldiers carry themselves. We desire soldiers that display maturity and discipline leading to a balanced life. Interaction characterizes the attitudes that a soldier demonstrates towards other members of the team. The first level baseline expectation is that soldiers always display respect towards others. Self esteem characterizes the attitudes that a soldier holds concerning himself/herself [21].

Cognitive Domain

Cognitive psychology is the branch of psychology concerned with the scientific study of the mind.The mind creates and controls mental capacities such as perception, attention, and memory, and creates representations of the world that enable us to function. The work of Donders [22] (simple vs. choice reaction time) and Ebbinghaus [23] (the forgetting curve for nonsense syllables) are examples of early experimental research on the mind. Because the operation of the mind cannot be observed directly, its operation must be inferred from what we can measure, such as behavior or physiological responding. This is illustrated in the human perspective of cognition and visualization as in **Figure 2** [24].

Figure 2: Human Perspective of Cognition and Visualization (Source: Goldstein, 2005)

Knowledge refers to the information possessed by soldiers and their ability to assimilate additional information. Relating to the information currently possessed, we desire soldiers that have a mastery of their specific job tasks and a strong basis in general education [25]. Judgment refers to a soldier's ability to effectively process information and make logical decisions. With the information they have, soldiers should understand what is relevant, filter out the irrelevant, and gain insight into situations through a systematic thought process. Application refers to a soldier's ability to translate decisions into effective actions. Once a decision has been made, we desire soldiers that can develop a plan to accomplish the desired end state.

Physical Domain

Fitness indicates that soldiers are fit in the traditional sense of the word. In academic settings, this is referred to as the health-related components of fitness. These components are somewhat measured with the current Army physical fitness test and include cardiovascular and muscular endurance and strength [26]. Athleticism can be considered functional fitness, and was consistently the first set of attributes mentioned in the physical domain during our consultation [27]. Health indicates that soldiers maintain their bodies in accordance with well-known principles of rest and nutrition. Nutrition and rest play major roles in energy levels, resistance to illness, and body composition.

In relation to a human dimension variable research, the Human Dimensions Research (HDR) team from the US Army was sent to Haiti to assess the psychological status and adaptation of the US Army force deployed for Operation Uphold Democracy in 1995 [28]. Research questionnaires were collected from 3,205 soldiers, interviews were conducted with 267 soldiers, and 1,250 soldiers provided 2,650 verbatim comments regarding the operation which were content analyzed. The HDR results demonstrated that, when viewed as a population, soldiers deployed to Haiti did not report unusually high levels of psychological distress or physical health symptoms. Subsamples of individuals did report elevated reports of psychological distress and physical health symptoms. Four sets of factors are discussed which were found to be significantly related to the well-being of soldiers in Haiti: (1) stress associated with the operational environment, (2) stress due to family separation, (3) unit and work issues, and (4) broader policy issues. The results have implications for unit leaders at all levels, mental health and medical personnel, and policy makers.

MAN MACHINE METHOD INTERFACE ON HUMAN DIMENSIONS IN SOLDIERS
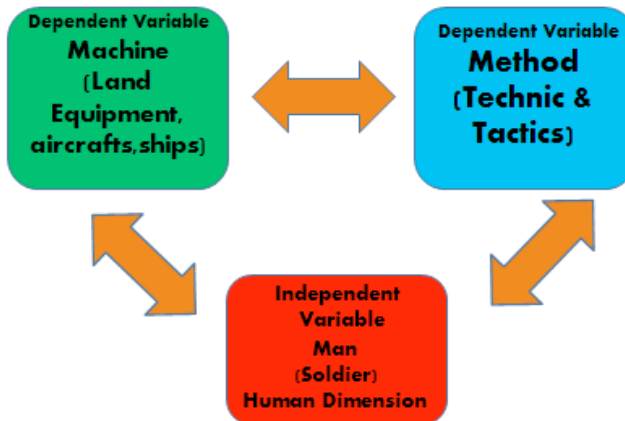
The Improved Man-Machine Interfaces research area is motivated by the fact that technology designed to enhance soldier performance often imposes both physical and cognitive stress on the soldier in ways that equipment developers do not envision [29]. Many research area addresses optimization of the way used soldiers use emerging technology by providing system designers with the knowledge and tools necessary to design equipment that does not enhance one aspect of performance while sacrificing another aspect that is critical to overall mission success. Research area focuses on understanding the interaction between physical and cognitive stress and their effect on individual dismounted soldier and small team performance, and additionally understanding the value of using alternative technologies, such as bone conduction communications and tactile displays, for providing information to the soldier [30].

The complex operational environment focuses on the machine and method which are dependent variables in correlation with the man or the soldier who is the independent variable. The soldier has emotions, feelings, reasoning and cognitive thoughts which invariably changes according to the battlefield environment. The machine platform management is the changing environment from modern fighting equipment in land forces to aircrafts and ships promulgates from different dimensions of tactical requirements, the method, but the man i.e. the soldier remains a thinking platform requiring the human dimension perspective as a strong foundation in anticipation of the complex operational environment.

A typical case study is the National Defence University Malaysia (NDUM) model of learning and education transforming from a Military Academy to a full fledge University.

This conversion requires the cognitive learning from the cadets in the academic field and the end state of the defence university is to produce intellectual leaders of character through the cognitive education learning and the psychomotor requirements of military training. This is illustrated in the NDUM Model of Officer Development Construct in **Figure 3** [31].
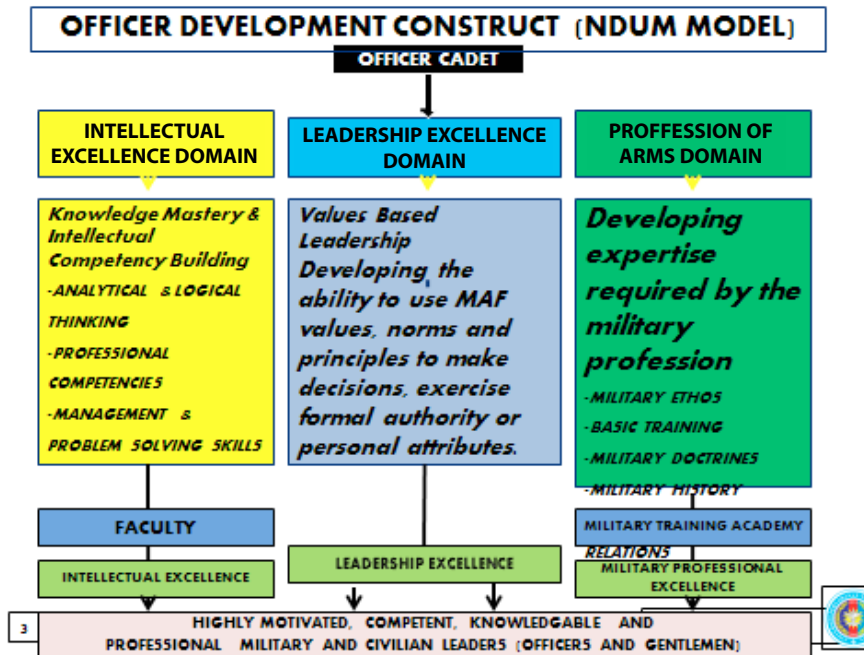

Figure 3. NDUM Model of Officer Development Construct (Source: NDUM Strategic Plan[Revised] 2012-2015.Creating a Future Excellence)

A mix of laboratory, simulation, and field experiments are used to determine the effects of soldier equipment (load carriage devices, helmets, weapon sights, information systems, tactile systems, etc.) on performance [32]. New approaches to measure human-system performance that are both operationally relevant and minimally invasive are being developed.

A study by US Army TRADOC [33] describes the human dimension as the "moral, cognitive, and physical components of soldier and organizational development" and states that "Army concepts acknowledge the soldier as the centerpiece of the Army, but none, individually or collectively, adequately addresses the human dimension of future operations." Within the context of the expected future global operating environment, this study looks in depth at expected soldier performance in the moral, physical, and cognitive domains. **Figure 4** is a visual depiction of the established operational problem statement:
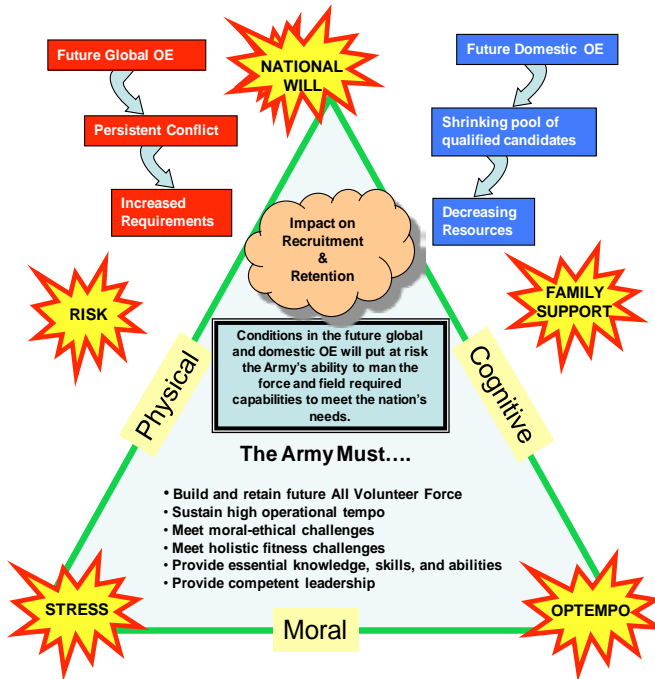
Figure 4. Depiction of Human Dimension Operational Environment (TRADOC 13 SEP 2008)

In **Figure 4**, the expected future global operating environment is characterized by persistent conflict, resulting in increased demand for quality soldiers while we expect to simultaneously observe a future domestic operating environment characterized by decreasing supply. All the while, "the military will require extraordinary strength in the moral, physical, and cognitive components of the human dimension, existing accessions, personnel, and force training and education development efforts will not meet these future challenges."

CURRENT OPERATIONAL REQUIREMENT FOR SOLDIERS

Current trends in the global and domestic operational environments will challenge all militaries operational ability to maintain a future responsive, professional and reactive force. Soldiers will operate in an era of persistent conflict amongst populations with diverse religious, ethnic, and societal values. The psychological individual and collective readiness is attributed to their combat performance as soldiers are convinced that their team or unit would perform well on operations, this will bolster their sense of readiness, increase how much effort is put into group tasks and augment the degree of persistence when group efforts do not deliver expected outcomes [34]. In an Israeli Defence Force study [35], beliefs about collective readiness in combat units were examined. Out of a range of variables (soldier experience levels, leader tenure in the current unit, leader confidence in the unit, soldier confidence in leadership, unit discipline levels and identification with the unit) the strongest predictor of perceived combat readiness was the identification with the unit. Unit identification has been called "vertical cohesiveness", "vertical bonding" and "organizational cohesion" but most commonly known in the military it is known as esprit de corps [36]. Faced with continuous employment across the full range of military operations, the military will require extraordinary strength in the moral, physical, and cognitive components of the human dimension. Existing accessions, personnel, and force training and education development efforts will not meet these future challenges, placing at grave risk the military's ability to provide combatant commanders the forces and capabilities necessary to execute the all military and national defense and security policies. Improved capabilities must address the broad range of human dimension actions necessary to prepare, support, and sustain this force.

RELATIONSHIP BETWEEN HUMAN DIMENSION OF SOLDIER AND COMPLEX OPERATIONAL ENVIRONMENT

People accomplish the mission. It is the human dimension with its moral, cognitive and physical components that enables land forces to deal with the situational complexity of tactical actions with strategic impacts and adapt to rapidly changing conditions. This emphasis has evolved from the increasingly complex and diverse operational environments in which soldiers perform, and the increased demands and stresses that are unique to current conflict (e.g., small-unit conflicts and asymmetrical warfare).

Future operations such as the Three Block War concept in **Figure 5** illustrate the complex spectrum of challenges likely to be faced by soldiers on the modern battlefield [37]. Soldiers may be required to conduct full scale military action, peacekeeping operations and humanitarian aid within the space of three contiguous city blocks. The thrust of the concept is that modern militaries must be trained to operate in all three conditions simultaneously, and that to do so, leadership training at the lowest levels needs to be high.

Figure 5. 3 Block War (Source: Krulax, 1999)

For the foreseeable future, militaries will continue to operate in complex environment that challenge soldiers, leaders and organizations. The military cannot afford to focus only on current operations as a predictor of the future. It must prepare people so that future commanders can sustain operations in a time of persistent conflict. Approved military concepts describe the employment of soldiers in the future. This concept reaches beyond the issues of equipping soldiers with hardware tools of war into the more subtle moral, cognitive, and physical components of soldier development [38].

LEADERSHIP CHALLENGES IN A COMPLEX FUTURE ENVIRONMENT

The crucible of combat requires both farms and leaders. The complexity of the future OE creates new demands on future leaders, most evidently in information management. Today, individual soldiers from the lowest to the highest echelon follow the situation across entire theaters of operation. Knowing more and sharing a common operating picture reduces uncertainty, increases situational awareness and understanding, and enables mission command and self-synchronization, tenets of both current battle command doctrine and future battle command concepts [39]. Having such visibility may also create stress and the potential for information overload.

Developing the means to manage knowledge and to get the right information to the right people has both technical and human solutions. Successful leaders learn what is critical and what is not. This skill or talent rises from experience more than any other source. It suggests that one of the critical issues in leadership development in the future will be creating opportunities for leaders to cope with complex information and high-pressure rapid decision making. Full spectrum operations demand the ability to transform from major combat to humanitarian assistance, and everything in between, repeatedly and rapidly. Soldiers will face life and death decisions with little time to reflect.

Persistent conflict presents another present and future leadership challenge. Humans respond relatively well to short bursts of tension followed by periods of respite. Soldiers steeled for a lengthy deployment in a non-linear conflict of indeterminate duration must respond in a new way. In such conflicts, soldiers must focus on mission progress while tolerating setbacks and understanding that settling the basic conflict may take years. Unpredictability and changing circumstances tax even the best of highly motivated units. Leaders must learn to mitigate this for their subordinates and cope with it in themselves. The list of 'human implications' caused by persistent conflict is probably infinite. However, the aforementioned cover many of the main issues and help identify three strategic issues that must be addressed by leaders in all Armed Forces [40]:

- How to best exploit the positive effects of persistent conflict.
- How to balance the training, readiness and force structure to win the current conflicts and stay ready for the future.
- How to achieve and maintain the proper end strength to reduce stress on the force now and in the future.

LEADERSHIP CHANGES IN MEETING FUTURE HUMAN DIMENSIONS IN SOLDIERS

Leadership in the future will require adaptive decision making based on an assessment of the situation as viewed through the eyes of subordinates armed with the commander's intent and support. Research will focus on how to improve leader adaptability across the full spectrum of operations, including personal and interpersonal skills such as perspective taking, self-awareness, and influence techniques within the chain of command and across organizational and cultural boundaries [41]. Leadership stability, optimism, open communications, and frequent presence at training are essential to developing an environment of confidence, trust, and respect. Research efforts will develop and empirically validate measurement and feedback techniques to assess and improve leadership effectiveness.

MILITARY TRAINING AND EDUCATION

Developing future leaders will require rebalancing the combination of training, education, and experience the Army currently uses. Training develops skills and techniques through practice and observation. Educating leaders must include emphasis on developing a cooperative leadership style that releases authority to the lowest level of competence. Training and education on theory and application of both cohesive and leadership team building skills and conflict resolution is necessary at all levels of the professional military education system. Mid-level and senior leaders will have to learn to function in joint, civil-military, and coalition-based operations, understanding the differences in style, culture, and expertise necessary in those settings. Experience will remain progressive and will influence selecting and pairing of leaders team for compatibility not in terms of similar attitudes or complementary leadership styles, but in terms of their ability to work together and respect each other's views [42]. Future leaders must excel in their ability to build rapidly adaptive, cohesive, and high performing teams. Future soldiers must excel in their ability to be effective team members and effective followers. The shift from training for operations within sharply defined institutional chains of command, to the conduct of highly decentralized, politicized, and collaborative operations involved in future full spectrum operations, has placed a high value on negotiation skills. Traditionally military leaders have a great deal of experience negotiating but not necessarily in contexts of ambiguous authority, limited political guidance, and significant cultural diversity. This set of trainable skills needs to be progressively more sophisticated as leaders increase in grade and responsibility.

Future leaders must excel in their ability to build rapidly adaptive, cohesive, and high performing teams. Future Soldiers must excel in their ability to be effective team members and effective followers. Geographical dispersion will heighten the need for shared understanding of the commander's intent and teamwork built on trust. Emerging communications methods (force tracking, on demand teleconferencing, instant messaging, virtual collaboration, e-mail, text messaging, podcasting) will become the

norm for interactions among team members and between leaders and their teams. Teams and task forces will form and operate without opportunities for face-to-face encounters between leaders and subordinates. Leaders and their followers must learn the principles of effective teamwork at a distance and understand the roles and impacts of various communication media in building effective distributed teams.

THE SOLDIER, THE FAMILY AND UNIT READINESS

The Army family has a major impact on combat readiness today and there is every reason to believe this impact will be just as critical in the future. Experience and extensive research demonstrate a synergy between the unit, the soldier, and the family that can positively affect retention and commitment to the unit, the mission and the Army [43].

Unit leaders have the greatest impact on reducing military-family tension, improving family satisfaction with military life, and enhancing unit readiness. Current trends indicate that Army families in the future will become more like their civilian counterparts. They will represent ethnic diversity and face commonly stressful issues such as finances, childcare, physical and emotional challenges. They will also have increased access to other family members, spiritual resources, community services, and friends. Military leaders must be able to assist soldiers' and families having trouble and at the same time ensure that the unit's mission is accomplished. Leaders require the skill and knowledge to direct soldier and family members to military and civilian services designed to correct or mitigate family related stress. Leaders that respected and trusted subordinates, made off duty time predictable, treated soldier and family problems as unit problems, and fostered family readiness groups, found that attention to family support added to the soldier's war fighting capabilities [44].

As the Army struggles to identify what the future will demand and how to prepare leaders for those demands it needs to be wary of trying to create soldiers that are jacks of all trades as the Army has tended to do in the past. If the Army wants masters of battle

command, it must identify those best suited for the challenge and tailor their careers to capitalize on those experiences that will produce and encourage truly extraordinary practitioners of military art and science.

REASSESSING THE FUTURE REQUIREMENTS OF HUMAN DIMENSION IN SOLDIERS

The move from traditional warfare engages soldiers with traditional weapons and traditional human dimensions and mindsets. But the future soldier needs to be rebranded and seek away from the mainstream generic responsibilities as the future warfare looks at different dimensions of the playing fields and the rules of the games has changed drastically. The universal traditional battlefield has moved from the traditional threats to nontraditional threats which require a different approach of training and leadership skills.

To operate effectively under conditions of uncertainty and complexity in an era of persistent conflict, future forces and leaders must strive to reduce uncertainty through understanding of the situation which gazes at the volatile, uncertain, complex and ambiguous (VUCA) environment and situation in which we are facing in complex operational environment [45]. This emphasized the importance of future soldiers' attributes in knowledge skills and attitude which need to be relook and synchronized with the training cultures to meet the demand of COE. The military must exploit current and emerging human dimension developments to increase the effectiveness of our human dimension programs and policies. Army decision makers will have to support that effort by identifying the most critical required capabilities across all doctrine, organization, training, materiel, leadership and education, personnel, and facilities domains. Then Army policy executors will have to partner with the influencers who specialize in the components of the human dimension and the art and science of leadership in order to recruit, lead, and manage the next generation of soldiers.

CONCLUSION

The human dimension encompasses the moral, physical, and cognitive components of soldier, leader, and organizational development and performance essential to raise, prepare, and employ the Army in full spectrum operations. Army concepts acknowledge the soldier as the centerpiece of the Army, but none, individually or collectively, adequately addresses the human dimension of future operations. The soldier performance attribute groupings in the moral, cognitive, and physical domains provides a platform for the intangible factor needed in the human interface in man-machine method. Today, across the world, everyone is facing several challenging, dangerous, and potentially inescapable geo-strategic trends. These trends include social and cultural factors; the dynamics of geopolitics and governance; the globalization of economics and resources; the revolution in science, technology, and engineering; and global climate change. This

will have an impact on the human dimensions of the soldier and the challenge is to build up their warrior espirit in spirit, faith, morale, Esprit de corps and cohesion.

The integration of human dimension of soldiers into the COE will provide a major challenge for all Armed Forces especially as it creates ambiguity, danger, physical exertion, friction, and constitute the climate of war, which contributes to the fog of war with which commanders must contend in future operations.

The machine is just a tool for the soldier in battlefield and the tactic is the method but overall the soldier is the platform using all his training in cognitive reasoning in making significant decisions in the battlefield whereby the machine and method is just the psychomotor aspect in assisting him meet his goals. As such what would the emphasis be for the future COE in relation to the human dimensions of soldiers especially the Y generation soldiers? How will Armed Forces deal with such changing environment and technological advancements to ensure the human dimension in soldiers continue to uphold the warrior spirit? Maybe the future training and education for individual and collective training for soldiers need to be relook and seek new avenues in terms of the push and pull factor for soldiers? The solution probably will be derived from how best we recruit, train, and retain our forces including the package of training methods of which soldiers can operate across the spectrum and range of military operations in the future operational requirements.

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CHINA'S MILITARY MODERNISATION: THE GROWTH OF DOMESTIC DEFENCE INDUSTRIES

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ABSTRACT

This research attempts to study the role of China's defence industries (CDI) towards the achievement of self-reliance in the military industrialisation. While rapid progress is being made on the economic front, the route to becoming a military technological and industrial champion can be very challenging. Ownership of an independent state-of-the-art military industrial capability is deemed an essential requirement for an aspiring great power. The main argument here focuses on the rapid modernisation process in China that has occurred during the past three decades has only produced a limited result. Even with populous workforce, sizable economic inputs, access to certain foreign technologies, and considerable political will, China experienced only limited success when it came to the indigenous weapons. Most systems were at least a generation or two behind, as compared to the military equipment being produced at the time in the Western Countries. The decision to enhance the defence industries in smart procurement, innovation, and research and development (R&D) has accelerating attempts for China's modernisation. The main finding of this paper is that the modernisation of China's military since the onset reforms of CDI has been impressive, but not surpassing the expectations of the government. The industry suffered from the problems of structure and organisation, shortages of industrial capital, production know-how, and technological denial. Lastly the progress of CDI can be measured through hard performance indicators such as the reduction of military import, increase of export, improvement of innovation index and, lastly the productions and R&D output.

Keywords: China defence industries, self-reliance, military industrialisation, military capability, innovation, modernisation.

INTRODUCTION

The Persian Gulf War in 1991 brought about a new awareness of the extent to which technology had changed the conduct of war. For China's military analysts, Operation Desert Storm manifested the advent of a probable "Revolution in Military Affairs" (RMA). The United States (U.S.) stealth fighters penetrated Iraqi airspace undetected to strike targets in Iraq with limited resistance, while the coalition force's naval armada sat well outside the range of Iraqi defences, launching wave after wave of air strikes and cruise missile attacks. The precision bombing substantially degraded Iraqi air defences, while electromagnetic warfare attacks blinded the command and control networks [1].

This scenario played a central role in convincing the People's Liberation Army (PLA) that it needed to conduct an extensive modernisation programme and a thorough re-evaluation of the acquisition, procurement processes and also, the CDI.

However, China faces sanctions by the U.S. and the European Union (E.U.) on military import. That makes its domestic arms industries crucial in assembling a modern military force as it continues to pursue the status of being a major power [2]. China has boosted its domestic weapons production, especially in high-end technologies such as stealth technologies. Recognised as the world's second-largest economy; China's rise has come with a new sense of military assertiveness with a growing budget to develop modern warfare equipment including aircraft carriers and the fifth generation fighters.

Military modernisation refers to "qualitative improvements in weapons system or in classes of weapons" with the rise of technology [3]. However, a number of recent reports indicated that China is still to equip itself with most significant technological breakthroughs so as to challenge the West. Reports of technological espionage, imitations and reverse-engineering are common; and China's repeatedly call for the abolition of sanctions are indicators of the nation's limitations to embark on its quest for military modernisation.

CHINA'S MILITARY MODERNISATION: MOTIVATION FOR DOMESTIC DEFENCE INDUSTRIES

The CDI has been re-initiated and focused on a strategic modernisation programme to meet the requirements of 21st century warfare. The Chinese leaders, faced with numerous perceived threats, have called for a readjustment of the doctrine requiring the modernisation of its military capabilities. Military modernisation in broad terms, refers to technological development from pre-industrial to industrialisation, and made possible by the defence industrial revolution [4]. But the roads to defence industrialisations are full of challenges and arduous. In spite of that, China has chosen to have the domestic defence industries and sustaining high-tech weapons for its military forces from its local industries.

China's Military Modernisation

Notably, the Chinese views about military modernization are presented in the PRC national defence white papers. Although the Chinese modernisation has accelerated and improved in pace and scope at a remarkable rate, this should not be misconstrued in signifying that the People's Liberation Army (PLA) can transform itself into a first-class military with global reach over the next decade. The PLA's global reach will, however, gradually develop and consequently will alter the regional and global balance of power [5].

Equally important are two types of drivers that shape the CDI; both contextual and direct. The former includes a range of external factors in China's national security environment that shapes China's threat perceptions, strategic outlook, and contingency planning [6]. Hence, those also include the U.S. re-balancing in Asia, the Taiwan issue, power projection and the regional security environments. Direct drivers for modernisation includes a range of political, economic, technological-denial and the search for self-reliance.

This paper will focus on the latter drivers as it has a direct impact, broader and longer-term considerations that underlay and shape decisions and directions in the CDI and its modernisation programme [7].

Political Factors

There were various reasons for states to decide to pursue national defence modernisations. The general motivation was anchored in the realist assumption that a state must increase self-reliance and reduce their dependence on foreign arms suppliers. National defence industries were viewed as "political industries" and critical to national security to be privatised [8]. Although investing in a national defence industry might not be efficient from an economic perspective; but having a strong national defence industry is considered to be an important source of national pride and a vital symbol of national sovereignty.

The Central Committee's Military Commission (CMC) is the principal deliberative and decision-making body for all major military and strategic decisions involving the PLA. The chairman of the CMC has, in recent history also been the President and General Secretary of the Communist Party. It is crucial to note that *The Military Strategic Guidelines for the New Period* is indeed a China's National Military Strategy [9]. The modernisation directive was derived primarily from this guideline in 1993 and issued to the PLA by the CMC [10]. The most compelling evidence of these guidelines was the commitment from the highest authority in the state to modernise the China's military.

The Revolution in Military Affairs (RMA)

The Chinese leadership emphasised that the PLA, in what is still the world's biggest standing army, needed to focus more on quality-rather-than-quantity [11]. The decision of the PLA to down-size the number of military personnel and staffing in the military leadership was based on a bigger strategy and modernisation plan. Defence transformation, or the RMA, is used interchangeably and there are various interpretations of this term. It generally refers to the introduction and implementation of new thinking with regards to strategy and tactics, military organization and doctrines, force structures and overall weapons acquisition. The RMA is more than simply just modernisation efforts [12].

The Chinese's RMA was part of the national military strategy in order to modernise the Chinese armed forces. One of the goals of the RMA is to transform the PLA into a force capable of winning of what they called the "local wars under high-tech conditions" rather than a massive, numbers-dominated ground-type war [13]. The Chinese political and military planners call for military modernisation in preparing for short and decisive campaigns. As compared to the past, more attention is given to high-end technologies in the new weaponry system. The PLA is also actively preparing for information and space warfare [14].

Economic Factors

Coupled with the political factor, the second reason for China to pursue national defence industrialisation is because of the economy. Domestic military hardware production was thought to be a major source of savings in substantial foreign exchange for the developing countries [15]. In addition, national defence industrialisation could lead to the competitive unit cost of weapons, thus reducing defence expenditure's burden to the state. Investing in national defence industry was viewed as an integral part of imported substitution industrialisation that aimed to trigger economic production and job opportunities to the state. More compelling evidence from Jane's 2013 report is the CDI employs at least 2.5 million workers for at least 15,000 defence enterprises in China [16]. On the contrary, the heavy emphasis on self-reliance means that resources are often wasted on replicating the development and manufacture of weapons systems already available on the global arms market. Thus, locally produced armaments are frequently acquired not for their capabilities, but for economic reasons. That is, to provide jobs and to keep the CDI factories operating [17].

Equally important, technological advances in the national defence industry could spill-over to the civil industries. This, in turn, accelerates the state's long-term economic growth. The domestic defence industry was perceived as the fertile ground from which the seeds of a country's overall economic industrialisation might then grow and flourish [18]. This effort proved to be fruitful as China has joined the U.S., Russia, Germany, and replaced Britain as the world's fifth largest arms exporter in 2013. SIPRI also ranked China as the second largest arms importer over the 2008-2012 periods, with a total of US $7.5 billion in agreements [19].

Establishing domestic defence industry would also be beneficial for other sectors of the economy, vice versa. China has very impressive civil industrial complexes in the commercial markets as compared to the defence industries [20]. To meet the conventional arms requirements of the PLA, the CDI has to enhance its competitiveness and capacities. The defence industry is becoming more decentralised and each state-owned enterprise (SOE) concentrated on specialised production lines of equipment. The concept of "economies of skill" has been adopted and each SOE will produce the specific items in bigger quantity and better quality. The involvement of privately-owned enterprise (POE) in the production and R&D is to strengthen China's capacity for sustainable development

of its defence industries. POE will bring the technology and financial support from the open market to the local defence industries.

Furthermore, the infrastructure, machineries and workforce of the SOE can be utilised for civil production. While utilising the cheap cost of labour and materials, the progressive entering into the free market economy of domestic of productions and R&D are strengthening the CDI's capacity for sustainable defence-industrial development[21]. As a result, it helps to narrow down the capability gap of the CDI with other defence industrialised nations. Although this may be true, many scholars argue that attitudes and approaches of the PLA toward civil-military integrations are questionable. Hence the enduring concern about the political and economic repercussions of the SOE and POE will reduce the scope and speed for the reformation of the defence industry. Thus the concept of defence industry reform based on economy factor may not materialise and happen.

Self-Reliance

The defence industries form an integral part of the defence capability of any country. For this reason, the defence industries are categorised as "strategic industries" with the prime purpose of helping the state attaining self-reliance in the procurement and support of defence equipment [22]. Another area of concern is that the reliance on foreign defence equipment could allow sabotage, leakages of information or foreign penetration of government, industrial and military networks. China's military officials are aware of the strategy of secrecy; and they have been lobbying the government to strengthen information security management by reducing dependence on foreign imports and to start sourcing their needs domestically [23]. After all, ICT is among the strength of China's commercial industries.

China's long isolation history chooses to be independent of other countries for their defence modernisation needs. There are three events that heavily reinforced China to be self-sufficient and self-reliant. The first of these occurred when the Soviets Unions stopped supplying completed military products and technologies to China. The border clashes between two countries forced the formal ally to cut off military aid and withdrew all personnel, hence stopping the atomic bomb programme in 1960 [24]. China continued developing its local capabilities and eventually became the world's nuclear power.

China suffered the second blow in 1989 after the U.S. cancelled the *Shenyeng* fighter programme and technology transfers between the two countries. The programme is one of the four initiatives under the U.S.-China "Peace Pearl" initiative launched in the mid-1980s involving the U.S. firm, Westinghouse (now Northrop Grumman Electronic Systems). The programme was to upgrade PLA's J-8 Finback fighters with beyond-visual-range radar equipment [25].

And then, the third blow came sometime in 2003 to 2004, when the European Union (E.U.) lifted the prohibition of arms transfer to China. However, pressured by

the U.S., the E.U. has postponed the lift for years, and the decision remains till today. These historical events have had a cumulative effect, and China firmly believes that it is completely impossible for the U.S. and E.U. to export arms and technology. Although old ally, Russia has agreed to export finished systems to China, it has limitations on technologies, quality, quantity and capabilities as compared to the Western countries.

China has to rely on local expertise and made it clear that their long-term goal is self-reliance in defence production. The ability of China to maintain its military superiority in the region is depending on its defence's R&D institutes; and the defence industries to overcome their past inadequacies to producing sophisticated and reliable weapon systems [26].

Military modernisation is dependent on the advances in technology and doctrine to project China's regional and global military ambitions [27]. The Chinese government has drawn up comprehensive military modernization plans to be self-reliant and self-sufficient when possible. This can be achieved by direct military purchases from Russia, Israel, and other countries to escape the U.S. and E.U. arms sanction [28]. There is also a valid point regarding how the PLA is acquiring new technology and weapon systems through "dual-use technology" which are reversed engineering and espionage. Espionage is viewed to be crucial for China to prepare for future challenges in gathering information and accelerating the growth. CDI has grown rapidly towards state-of-the-art military technologies.

Technological Denial

Sanctions are the trade preventions on certain type of products (arms), services or technology to another country. In June 1989, the U.S. and the members of the E.U. sanctioned the sale of military items to protest China's government crackdown on the protesters at the Tiananmen Square in Beijing. The U.S. Government immediately issued *Public Notice 1109* to suspend all license and approvals authorising the export of defence articles or defence service to the PRC. Subsequently, the E.U. followed with their version of sanctions, based on Regulations 215 of the *Treaty on the Functioning of the European Union* (TFEU) [29].

However, even with the long-running arms sanction, success in changing target policies is far from guaranteed. Nevertheless, even more importantly, China's arms sanction has had a paradox effect [30]. Technological-denial has forced China to concentrate on other means for survival. This made the domestic arms industries crucial in the modernisation of its military force to remain as a regional power. China upgraded its indigenous weapons production, especially in the areas of advance technologies such as stealth, communication and infrared. China's rise came with a new sense of military assertiveness with an economy that can sustain the development of modern warfare equipment.

Although the U.S. and E.U. sought to limit the Chinese access to Western arms and military technology through export controls and sanctions, the lure of access to China's market ultimately gave CDI access to considerable dual-use technology that could be "spin on" to military applications. Moreover, the rapid advancement of computer, communications, and material technologies in a globalised economy meant that technologies once used primarily in military industries became COTS and general equipment are free from most of the export controls [31].

Despite China's efforts to break out of its technological denial, the CDI's prospect of changing the circumstances has had inadequate success. The arms sanction remains strong, despite lifting attempts by some of the E.U. countries back in 2005. China continued her pursuit to develop an independent approach as summed up by the slogan of "walking on two legs" [32]. If the country under an arms sanction has no extensive defence industry infrastructure, therefore, is incapable of developing and manufacturing its own military equipment. The two countries under similar sanctions that managed to withstand it are Iran and China, as both countries build-up extensive defence industry infrastructure. The only example of a country where arms sanction was successfully imposed and enforced was Libya. The sanctions were agreed by the United Nations (UN) in which its policy was strict, and the country was denied of defence industry infrastructure. Analysis of the effectiveness of arms sanction and has come up with an interesting deduction [33]. Firstly, whether the sanction is imposed and enforced under UN auspices; the exporting countries followed a strict policy of keeping the sanctions in place and lastly, whether the country under an arms sanction has no extensive defence industry infrastructure. In the case of China, none of the above criteria is applicable. This emphasised the importance of relying on the state's own capabilities, regardless the level of efficiency and the effectiveness that this involved.

It is arguable that China's military modernisation is a normal state behaviour when economically permitted. Modernisation is a process of upgrading current capabilities based on science and technology. The process accelerates when the state perceived imminent threat. But in case of China, the modernisation was more of self-defend or protecting the state's interest. China's military modernisation was about global reach; and to challenge the current superpower, the U.S. This argument was based on the types of military hardware inquires made by China. The Inter-Continental Ballistic Missiles (ICBM) for example, is a striking adversary beyond continental and it will become a strategic asset for a country. It can also be said that secrecy is a force multiplier for China. Secrecy can be contained within state and domestic defence industries are the best answer.

THE STRATEGY OF DOMESTIC CHINA'S DEFENCE INDUSTRIES

Great powers can be said to have great defence industries [34]. A country cannot be excessively dependent on foreign arms producers and yet be considered as a great power. Factors such as supplier restraints, sanctions or technology denials can create critical gaps

in military capabilities; thus undermining its freedom of action and exposing its armed forces to vulnerabilities that can be exploited by its adversaries. Therefore, a great power should strive to be self-supporting in the development and production of armaments. The maintenance of powerful military depends on the defence industrialization process that is supported by the competencies in technology and the manufacturing processes [35].

Reforming the defence industry has been long preoccupied in China's strategic thinking in order to upgrade its technology base and manufacturing capabilities. The leadership committed and strived to make armaments production more advanced, efficient and cost-effective. Unfortunately, most of these efforts had little positive impact on the country's military technological and industrial capabilities. It only encouraged China to experiment with additional reforms in the hopes of finally getting it right. The recent round of defence industrial base restructuring began in the late 1990s. The reorganisation was basically a concerted effort to inject more market-oriented concepts into the CDI [36]. Now, twenty years on, China is the second largest economy with a huge percentage to spend on defence; this paper has the opportunity to assess just how successful these reforms have been.

APPROACHES TO MODERNISATION DEVELOPMENT

Even with sizable economic inputs and considerable political will, China experienced only limited success when it came to domestic design, development, and manufacture of advanced conventional weapons. It remains unclear how effective these modernisation have been. Where are the PLA and the CDI heading? What hinders China to join the exclusive ranks of those nations possessing sophisticated armed forces and defence industries capable of producing world-class military hardware? [37] Answering these and related questions on the budget and procurements, CMI, indigenous innovation and R&D, and dual-use technology, espionage and innovations are at the heart of this study.

Smart Procurement policy

From the most compelling evidence, it is noteworthy that the Chinese leaders recognised the need for military modernisation through the procurement and integration of foreign weapons and weapon technologies. SIPRI ranked China as the second largest arms importer over the 2008-2012 periods, with a total of US $7.5 billion in agreements [38]. Yet, for reasons which are strikingly persistent over time, China has been only partially successful in translating this procurement into a sustained indigenous capacity to develop and produce sophisticated weapons [39]. This has often placed China in a weak position in relative to its potential adversaries, further demonstrating the need for military modernisation through arms imports.

The CDI has proven its capabilities to develop relatively advanced systems such as ballistic missiles, rockets and nuclear weapons technology during the post-cold War. In contrast, those systems are relatively poor in qualities if taken as a whole arsenal [40].

However, as the threat changed, China has to embrace new concepts of operations in order to face the likelihood of future warfare; and so the need for China to modernise its military has also come, especially through the import of weapons and military technologies. The new concepts require improved naval and air capabilities of the PLA.

Hence, the PLA has acquired advanced weaponry as part of its modernisation plan and so as to deter the perceived adversary. China has used these acquisitions to develop "pockets of excellence" [41]. One of the most striking evidence was the acquisitions of Russian equipment such as the surface-to-air missile system (SA-21) and Su-35 fighter aircrafts. Between 2011 and 2012, Russia agreed to sell IL-76 transport aircrafts and Mi-171 helicopters to China [42]. Pockets of excellence refers to smartly procured sectors of advanced technology that do not necessarily generate synergies to the CDI, and are unlikely to do so in light of the expanding technology gap between such pockets and the military capabilities at large. Smart procurement in this paper also refers to the process of pursuing foreign technologies through the procurement for the purpose of transfer of technology and R&D. With this in mind, the procurement turns into licence-building or producing under the reverse engineering to supplement indigenous military modernisation efforts [43].

As a result of those acquisitions, China has moved its technological evolution to international standards by committing itself to a more open market. This process is arguable, abandoning much of the China's concept that emphasises on technological self-reliance that will be impeding indigenous innovation for decades. Through this approach, China could realise massive technological progress in a relatively short span of time as it incorporates sophisticated foreign technology into its own defence system [44]. At the same time, it enables the Chinese military to take advantage of an RMA undertaken by leading foreign militaries.

It is crucial to realise that part of the China's modernisation strategy is to acquire advanced foreign military platforms. In contrast to the concept of smart procurement, Chinese planners have chosen to import entire weapon systems directly, such as the examples above; some analysts argued that this move is unfavourable for the long-term modernisation of the CDI [45]. Direct purchases are strongly believed to be used as a short-term measure to fill capability and critical gaps that domestic CDI are unable to fill [46]. The argument that some items purchased from foreign companies are commercial off-the-shelf (COTS) or dual-use components that can be used in the military as well as civilian applications and those are available in the local market. However, one must also seek to understand that various elements such as computers, semiconductors, software, hardware devices, and integrated circuits are required to be integrated into a single working system. Every sub-system came with its own protocol is a scenario that is often overlooked and most often not, system integration became a technological nightmare.

Additionally, the partnerships forged between original equipment manufacturers (OEM) and the Chinese companies also offer the CDI access to advanced foreign technology. Similar to the requirements in the Malaysian procurement process [47], the

nature of the trade regulatory and business protection in China places massive pressure on foreign enterprise to transfer technology to the CDI as a part of operating businesses in China [48]. Foreign companies are to provide not only technology but also capital, skills and manufacturing expertise in order to secure market access in China. Indeed, these offset and transfer of technology, creating R&D facilities in China [49].

As a result, the PLA's capabilities gradually improved and strengthened. Hence the import of weapons and weapon technologies is an important factor in this modernisation. Although this may be true, it should also be balanced by another strategy. China is faced with the dilemma of reconciling its strategic intentions with its arms import and production capabilities. China continues to bear the burden in finding an acceptable balance between indigenous weapons development, on the one hand, and importing "superior and secret weapons", on the other [50].

Civil-Military Integration (CMI)

The CDI struggled to adapt to the harsh realities of the market economy after enjoying a secure and privileged life in the closed military system during the Maoist era [51]. In order to maintain a balance between military and economic modernisation, China adopted a policy of combining military and civilian production. This strategy goes back to the late 1970s, dwelling in the words of Deng Xiaoping's so-called 16-characters slogan:[52] "Combine the military and the civil/combine peace and war/give priority to military products/let the civil support the military". The strategy called for the CDI to not only develop dual-use technologies but to actively promote joint civil - military technological cooperation. Consequently, this will create the spin-on of advanced commercial technologies to the CDI and in support of the overall modernisation of the PLA [53].

Commercial Off-The-Shelf (COTS) is the term for goods available in the commercial marketplace that can be bought and used under normal government contract. A rapid advance in civilian technology means that growing ranges of commercially available equipment are of comparable performance equivalent to military products. This can be seen especially in the case of electronics and ICT where commercial technological innovation has made rapid progress since 1990 [54].

The CDI has benefited from the integration with its expanding civilian economy, science and technology sectors; particularly sectors with access to foreign advanced technology and utilising the dual-use product. Goods and technologies are considered to be dual-use when they can be used for both civil and military purposes. A dual-use technology, COTS and CMI base will allow the CDI to have the ability to source more of its critical and sensitive technologies domestically. Self-sufficiency has been a major priority for the country's defence industry and military establishments, especially after China experienced the cut-off of access to foreign arms and technology following the sanctions in 1989.

In the event that COTS technologies (particularly in ICT) are truly destined to fundamentally alter the prosecution of future warfare, then non-traditional defence contractors who can engage in CMI could become more critical suppliers to China [55]. In particular, companies such as Apple, Cisco, Microsoft and Sun, could benefit at the expense of traditional defence firms. On the other hand, too much reliance on foreign ICT companies might create a whole new scenario of security issues.

At the present time, the CDI faces an apprehensive challenge to successfully adopt CMI practices as this will require major changes in China's system and structure [56]. The CDI will need to be more transparent, competitive and market oriented. Contrary to the civil sector, the CDI is at odds with its institutional nature as a closed, military-oriented, secretive and state-controlled system. Consequently, the introduction of CMI practices needs to take place alongside other key CDI and military structural reforms, of which the shaping of close linkages between the defence and highly success civilian technological and industrial systems.

The positive assessments on the advantages of CMI could yield are likely to inspire the widespread adoption of such policies throughout the CDI in the coming years. However, the Chinese policymakers' expectations that having the CMI can lead to faster, cheaper and better development and production of defence technologies and systems are far from clear. Arguably, the track record of achievements remains thin even for the U.S. who has pioneered the introduction of CMI into its defence industry [57].

Another key point of CMI is high-level political and bureaucratic support for allocating modest, functional and geographical pockets of the industries. The same concept introduced by the Malaysian Government during the launch of the Malaysian International Aerospace Centre (MIAC) Subang in 2005. The formation of MIAC is to spearhead the development of aviation hub in Malaysia. The close proximity with the Subang Airbase created the CMI, with Malaysian character. Meanwhile, China's allocated city of Mianyang in the Sichuan Province and have been designated as military-to-civilian science and technology (S&T) hub. Mianyang becomes the city of choice for the concentration of industries with significant civil–military potentials. These include high-tech areas of interest such as optical technology, composite materials, space and aviation-related technology. The project has been the combined efforts of the China Electronics Technology Group and private owned firms such as Huawei Technologies, Zhongxing Telecommunications Equipment Company, and Datang Telecom Technology Company [58]. It was reported that the PLA has a special Military Representative Office (MRO) staff in this place, and other many factories to supervise overall production. This move is to ensure the interest and requirements of the government are met [59].

On the down side, so far the CMI has hardly made a significant impact on the Chinese economy. Less than one per cent of the country's civilian high technology enterprises are estimated to participate in defence-related activities [60]. The ability of the Chinese defence economy to adopt successfully CMI practices will require major structural and operational reforms. It will need to be more transparent, adaptable,

and market-oriented. Then again, this clashes with its legacy of insular, security and secretive nature. At the same time, it is difficult to make sense and in understanding the significance of judgement in the Chinese authority. The nature of CMI that is taking place in China is puzzling; whether it is more in terms of military-to-civilian spin-off or civilian-to-military spin-on processes [61]. This concludes that the application of CMI interaction needs a realistic transformation to be fully successful.

Technological Espionage

With self-reliance in mind, China's ambition is to become a world-class military industrial power by 2020. A restructuring of the CDI is taking place to tackle obstacles constraining its ability to absorb, create and diffuse technological innovation. To a certain extent, technology espionage is used to speed-up the processes. Technology espionage refers to the theft of technology or trade secrets by the hacking, removal, duplicating, copying or using of confidential or important data in the industry for use by the contenders [62].

Overseas government directed missions so as to buy or learn the best military technology available, to reverse-engineered it, and to build a domestic industry that promotes the growth of the CDI and the commercial sectors - is the Chinese's strategy [63]. This centralised programme is known as the "863 Programme"[63]. China's authority allocates money to acquire and develop tank and aircraft's propulsion systems, defence electronics, armament's control systems, wide range of cutting-edge precision machine tools, and computer-aided design/computer-aided manufacturing (CAD/CAM) [64]. The Chinese espionage efforts have been especially targeted at advanced military industrial powers such as the U.S., Western Europe and Russia [65]. One of the reasons that China's industries have been so effective at espionage is the centralised approach they have taken. China launched a national high technology R&D programme with the specific goal of benefiting China's long-term high technology development.

At a certain extent, based on investigations conducted by the law enforcement agencies of the U.S. [66], China utilised its intelligence services and employed other illicit approaches to obtain key national security technologies, controlled equipment, and other materials not readily obtainable through commercial means [67]. China continues to engage in activities designed to support military procurement and modernisation. In early May 2013, the U.S. accused China of attacking U.S. government and defence contractors' computer systems. Some recent findings estimate over 90 percent of cyber-espionage happened in the U.S. comes from China [68].

The advantage of the technology espionage is the potential to acquire advanced systems or technologies that other countries are unwilling to sell. In some cases, allowing a country to acquire advanced technology without spending funds on its own R&D. The disadvantages include a country's limited ability to absorb or replicate stolen systems and technologies without technological support from the manufacturer, the lacking and potentially incomplete access to systems and technologies through legitimate means, and

the potential for espionage to send a country's industry down a blind alley. In discussing the degree to which China has employed the option of technology espionage, it should differentiate its comprehensive efforts to collect and assimilate open source defence information from its efforts to obtain restricted technologies covertly, by means of either traditional or cyber espionage. Exploiting the volumes of technical open source information produced in developed countries is arguable, an effective, legitimate, and predictable way to acquire knowledge [69].

Indigenous Innovations

Innovation can be understood as making changes in something that already exists or by introducing new technology or products through R&D. Likewise, R&D programmes are an important component of all countries' public spending [70]. The contribution to the process of innovation is always a contested issue. The question arise is always circling upon whether R&D programme provides useful spin-off from military to civilian technology and will be able to enhance economic growth or vice versa.

The concept of defence innovations has led to an enhancement in the performance of the defence system in many developed nations. As a result, the Chinese's government targeted 2020 as the year to become a "world-class military technological power" and directed the defence industry chiefs scientists and engineers to strive and aim for that objective [71]. Both political and technocrats claimed the quality level and quantity of the output of the CDI has improved during last two decades. Although it may be true at a certain extent, the *Global Innovation Index* states otherwise. **Figure 1** indicated that China is just above the average line indicating that its efforts as far as innovation is concerned resulting in an adequate international competitiveness. The location of China slightly above the average line attributes China with slightly higher competitiveness. This is because of the indigenous innovation system which is still evolving [72].

Figure 1: Global Innovation Index
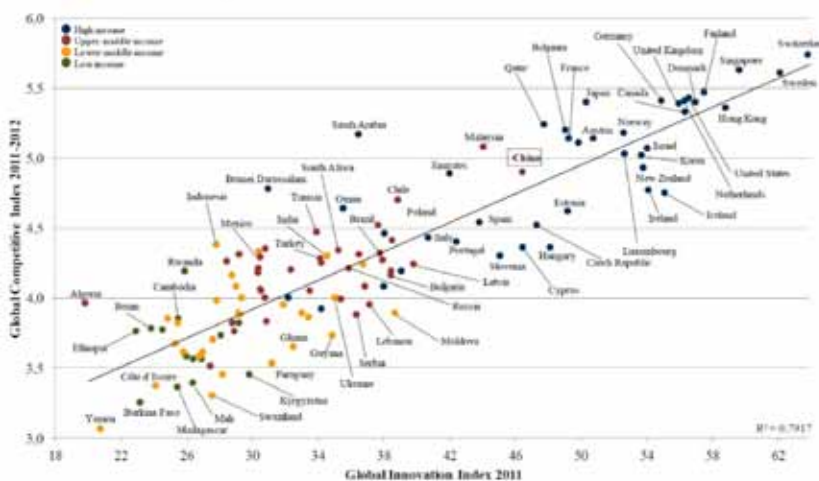
Source*: **World Bank and illustration by Josef Bichler

In view of innovation, the Chinese's leadership has restructured the CDI by enhancing the overall defence science and technology (S&T) system. The initiatives include: "providing greater funding for R&D institutions, improving the management of research funds, introducing a competitive mechanism for defence research, adoption of a contract system for research projects, speeding up the application of research findings for production, and improving the CMI" [73].

Despite a strong political commitment for performance, innovation within the CDI continued to suffer [74]. There are certain amounts of structural, organisational, systems integration, project management and institutional problems that act as barriers to innovation, and amongst others, organisation, decision making process, regulation, flow of knowledge, protect of intellectual property rights, geographical location and political issues.

On the contrary to conventional weapons, technological innovation flourished in the Chinese strategic weapons system with impressive breakthroughs in the development of nuclear, missile, and other strategic high-technology capabilities. An important question emerged: Why the strategic weapons succeeded when its conventional counterpart needed to catch-up? The answer is that the strategic weapons community took fundamentally different approaches in establishing the structures and process of its innovation system [75].

At the same time, the Chinese defence planners choose alternative pathways in tackling the reformation of defence industries. The CDI is directed to surpass the normal and conventional path of development. With this in mind, the industries were encouraged to skip certain steps of the modernisation process. This can be achieved by focusing on the adoption of computerisation in place of conventional, manual and mechanised systems. The term "technology leapfrogging" is referred to by many scholars in explaining this phenomenon [76].

This alternative pathway to modernisation, nevertheless, involves a considerable amount of risks. It involves the development of unproven technologies, the diversion of substantial resources from other parts of the defence industry, and the unpredictable nature of the technological development process. The risks are even higher if the focus is on the development of "frontier" technologies rather than the adaptation and imitation of already existing designs and products. Moreover, much of the information technology-related knowledge and technology lies outside of the boundaries of the defence industry and within the civilian economy [77].

Research and Development

A study of China's R&D will shed light on a range of self-reliance and modernisation issues. This research report seeks to broaden the understanding in these areas by considering the questions of requirement, budget and measurement.

Should the CDI wanted to realistically pursue the goal of catching up the world's advanced military industrial powers, it would need to allocate significantly more capital investment and other resources for the purpose. In the late 1990s, the China's defence science and technology budget were equivalent to just five per cent of the amount of the U.S. spending on the same item. This huge gap in funding strongly suggests that any Chinese broad-based leapfrogging efforts would fall far short of reaching the technological standards enjoyed by the U.S. and its Western allies. A more attainable strategy would be the concentration of limited resources in a selected number of areas where chances of success in narrowing technological gaps are greatest [78]. Nevertheless, China's defence budget R&D has improved since 2009 and reached US $2.64 billion in 2013 (**Figure 2**). It is forecasted to be more than four per cent 2014 onwards.

Figure 2: China's Defence Budget from 2009 to 2016 (US $)

Title	2009	2010	2011	2012	2013	2014	2015	2016
Procurement	7.77	7.97	8.32	8.93	9.40	9.78	10.25	10.85
RDT&E	2.21	2.27	2.35	2.51	2.64	2.90	3.17	3.42
% R&D	3.90%	3.90%	3.90%	3.90%	3.90%	4.00%	4.10%	4.10%
Total	56.68	58.21	60.31	64.25	67.62	72.44	77.37	83.49

*Source***: HIS Jane's World Defence Industry, http://globalsso.ihs.com
(30 October 2013). Table illustrated by author.**

THE ACHIEVEMENTS

The efforts spent in the modernisation process gradually bears fruit and the CDI has been showing increasing signs of achievement in the past few years. Notably, the military hardware for air, land, sea and space, leaving the industries in better quality and with latest technology. This was clearly shown at the beginning of September 2012 when, China finally commissioned its first aircraft carrier, the *Liaoning* (Varyag) [79]. It was the time when China made public its first locally produced fourth-generation aircraft. This fighter aircraft came with low observable features, advanced avionics, super-cruise engines, and stealth applications, as demonstrated by the January 2011 flight test of the J-20 prototype and recent observations of a second indigenously-produced aircraft with stealth features [80].

In a nutshell, these were noticeable displays of the rising Chinese military technological clout. From dependence and reliance on the Russians to the CDI's emergence as a powerful, globally connected, market-oriented, and technologically-based production's power house. As a result of the flourishing economy, coupled with new threats and an intense need of the PLA, has paved the way for a concerted effort

to tackle the defence industry's deficiencies. In the long run, these efforts will be placed on a development path to take its place with leading military powers. Military scientists, engineers and the CDI's technocrats and have been contributing to the task of leapfrogging ahead in their RMA efforts to achieve a militarily self-reliance by 2020 [81].

With seven years to 2020, the current wide range in technological level of quality and attainment between China and the world's leading military powers is nonetheless apparent. Hence, such a magnificent target may be a more aspirational expression than the achievable end-state. Still, the CDI has begun leapfrogging to achieving technological breakthroughs in the early 21st century. The state-of-the-art military equipment, and other new generation hardware are coming off from CDI's production lines in quality and quantities unmatched compared before embarking in the RMA decades before. This paper is agreeable to the efforts of transforming China's defence industry was on the right track since the late 1990s. After all, the central interests are the modernisation efforts to tackle the ingrained obstacles that have hampered the CDI's ability to grasp, create, and spread technological innovation [82].

MOVING FORWARD: NEW STRATEGY

Moving forward, China has initiated three strategies to reform its defence industries. As discussed in Chapter III, the first is to revisit the CMI; acquiring the niche technology from abroad through smart procurement; and lastly, concentrating on selective modernisation.

As has been noted, the future of the CDI rests on the capability of the defence industry to leverage existing CMI and by connecting the civil industries with China's domestic defence requirements. This is correctly argued, particularly relevant to information technology and the defence electronics' sectors [83]. Regardless of the technical hitches associated with civil conversions described earlier, China's leaders remain persuaded that the incorporation of civilian to military industrialisations are the keys for innovation of advanced defence equipment. Above all, the early strategy was for the CDI's manufacturers to use their technological know-how and skills to generate profits on commercial markets. Nevertheless, the principal will be continuous in the future, through integration in civil and commercial production; CDI's manufacturers will acquire COTS and dual-use technological capabilities for weapons systems production. It is important to realise that China's leaders continue to rely on civilian production by domestic, state-owned defence manufacturers for maintaining factory's financial liquidity, thus reducing the amount of government's military funding for the PLA. This initiative will also keep the CDI continuous in its operations [84].

Military technology that covers air, land, sea and space equipment that are designed for modern warfare use. Given the range of platform and, by and large technological level and capability of China, it is impossible to develop all modern weapon systems domestically. Chinese's strategists observed that for China to strive for an advanced

technology military and to deal with the other major powers; it will fall into the same trap that previously drag the nation's economic development as had the former Soviet Union. It was believed to be the main cause Soviet Union's disintegration, thus China decided to avoid a similar consequences [85]. Given these points, China's leaders are concentrating on making breakthroughs in niche areas. These areas are seldom clearly identified, but this paper highlighted the advantages of China's potency in ICT and electronics technologies, aerospace, the strategic missiles and satellite technologies [86].

The final element of China's strategy for long-term improvement of the CDI is to acquire proven and fully tested weapon systems. In order to achieve independence from its traditional defence production, China sees importing foreign weapon systems as an essential way to move forward with the global technology. On the account of the CDI's being outmoded by decades as compared to the more advanced major power; this is the best strategy for China [87]. Thus, the PLA will receive the latest equipment while the CDI will benefit from the transfer of technologies. To sum it up, China learnt the smart procurement or purchases of complete system from their foreign allies until the CDI can produce it domestically. The best example was the purchase of Russian Su-30MKK and the locally produced Shenyang J-16 [88].

Apart of importing various skills, knowledge and know-hows, the tools and machineries needed to manufacture sophisticated weapons systems were also in place. Those include legal and also illegal imports of large quantities of nominally civilian tools, machinery and materials that can be used as dual-use equipment in the manufacture of weapons. Last but not least, China has also been active in technological espionage activities to acquire knowledge needed to supplement the domestic's R&D efforts [89]. The lack of access to advanced Western technologies does substantially affect both the speed and scale of China's modernisation [90].

CONCLUSION

Defence industries are a political and strategic industry. In order to protect national independence and sovereignty from possible adversaries, states have to rely on military power. The states have to modernise their armed forces with high-tech weapons as a form of power projection and to showcase deterrence to the enemies. For these reasons, the states devoted a large amount of budget and efforts to counteract potential rivals. This budget has been either directed to establish a defence industrial base or to acquire weapon systems from foreign sources. The ability to produce weapons indigenously constitutes one of the main assets of military power. States which can afford to establish high-tech weapons locally are able to influence international systems according to their interests or to pursue their national interests without relying on other actors in the international system.

The main finding of this paper is that the modernisation of the China's military since the onset reforms of the CDI in the late 1990s has been impressive, but not yet surpassing

the expectations of the government. With some notable exceptions to strategic weapons, the CDI uniformly suffered from structure and organisational problem, shortages of industrial capital, production know-how, and technology.

While some progress has been made, and the PLA does account for a large force and weaponry in most categories of conventional systems, the CDI remains constrained by a number of technology factors. Without access to equipment and technologies from the West or other foreign countries, the CDI unable to close the weaponry and defence technology gap with other super powers. Alleged technology espionage and transfers of technology from the U.S. and Russia are finally meeting some of the PLA's needs, but they are far from sufficient to provide it with a power-projection capability. This resumption inflow of foreign knowledge and technology to China may remove the technological denial for an urgent push to improve its indigenous innovation capabilities. In view of removing sanctions, and the paper second finding, it is believed the CDI will get a technological breakthrough from other foreign countries to develop state-of-art military hardware.

The relative progress of an individual defence-industrial sector appears to be best explained by its relative integration into the CMI, utilising the dual-use and R&D chain. Those sectors that have lagged in relative terms have been hurt by a lack of similar spin-on benefits from partnerships between multinational corporations and the civil industry, though the defence-industrial reforms and diffusion of innovation in the system have improved their performance. The third finding is that the progression of CDI is dependent on their innovation capabilities.

The last finding is about the progress of CDI can be measured through a diverse array of hard performance indicators. Therefore the reduction of military import, increase of CDI product and R&D output, increase of export and lastly, improvements of the innovation index are measurable. The data shown that China's import of military hardware from Russia declined significantly from 2005 to 2012. In spite of the reduction in import, the number of equipment entering the service increases. Meanwhile, China's exports rise to a stage of overtaking Britain as the fifth largest arms exporter of the world. Lastly, the innovation index is a valid indicator for improvement of these industries.

Finally, it can be concluded that with the uncertain political development and national threat perceived, China is definitely set to continue its on-going military modernisation to prepare for the worst possible future outcome. China acknowledges that continued military modernisation could send strong indicators to the future adversaries of China's fortitude to uphold the state sovereignty principle and to protect its economy development.

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NAVIGATING MARITIME DISPUTES: COMMONALITY OF SECURITY INTEREST

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ABSTRACT

Given the importance of maritime issues in the post Cold War, the coastal states of the strategic sea lanes are concerned with the peace and stability of the domains. In the case of the South China Sea (SCS), it is the world's second busiest international sea lane, conveying about one-fourth of the global crude oil and oil products. The coastal states are also concerned with the overlapping claims in the exclusive economic zone (EEZ). Similarly, the Mediterranean Sea, which connects to the Atlantic Ocean through the Straits of Gibraltar [1] is strategic maritime domain to the European Union (EU), and tourism is one of the major sources of income for the coastal states. The regional states as well as the extra-regional powers are concerned on the security of this strategic waters because of the overlapping claims of the exclusive economic zones by the coastal states. This paper examines the concept of regional states diplomacy as adopted in ASEAN and EU. Initially, the paper will discuss the maritime security mechanisms in promoting peace and stability in the respective domains. In order to establish "zone of peace" in the maritime domain, with the concept of commonality of security interests in terms of political leadership or personal diplomacy, four security mechanisms will be discussed. In addition, to further enhancing peace and stability a light 'footprint' of maritime peacekeeping operations should be established. In conclusion, the paper will impress upon the political will of regional states including the extra-regional powers in attaining peace and stability in the maritime domains.

Keywords: South China Sea (SCS); Mediterranean Sea; exclusive economic zone (EEZ); maritime security cooperation; overlapping claims; maritime diplomacy; conflict resolution.

INTRODUCTION

The South China Sea (SCS) is strategically located along the shipping routes connecting Northeast Asia to Southeast Asia and the Middle East. It is about 686,300 square nautical miles in size and is considered the world's second busiest international sea lane conveying one-fourth of the global crude oil and oil products [2]. The continued growth in international commerce has been accompanied by the growth in the use of maritime domain for criminal purposes as well. The regional states, major maritime

powers, and the shipping industry are equally involved in the security of their merchant vessels plying through this sea lane. Further, the UNCLOS of 1982 sets the rights of the coastal states' exclusive economic zones (EEZ), which led to the existence of overlapping claims in the general area of Spratlys which stretch out to over 500 nautical miles from north to south [3], and creates a differing practices of jurisdiction by the coastal states of the SCS. Various maritime powers are also projecting their sea power capability in the SCS, as an effort or obligation to ensure the freedom of navigation is maintained so that there is no disruption in the sea-borne transportation of strategic commodities such as oil and gas.

Comparing with the Mediterranean Sea, which is the busiest route with the cruising ships, covers an approximate area of 965,000 square nautical miles, and connects to the Atlantic Ocean through the Straits of Gibraltar, that is only 8.7 miles wide [4]. It is a strategic maritime domain adopting European Union (EU) maritime security mechanisms whereby tourism is one of the major sources of income for the coastal states. Of significant, the Mediterranean Sea has no overlapping claims by the coastal states but there is a possibility source of hydrocarbon in the eastern part of the Sea.

Both Seas, emphasised on the maritime security cooperation between the coastal states and extra-regional powers to maintain international peace and security, thereby the coastal states' strategic interests and their freedom to exploit sea-bed resources such as hydrocarbon, are well recognised. In the case of the SCS, securing and stabilizing its waterway by minimising threats and encouraging cooperation is a critical dimension of the region's maritime security. The maritime issues can be resolved by adopting a commonality of security interests framework.

This paper attempts to examine the regional maritime diplomacy, in terms of political leaders special relationship and their commitment in managing potential conflict in both strategic waters of the SCS and Mediterranean Sea. Initially, the paper will impress upon the foundation to promote peace and stability in the maritime domain, and what are the diplomatic approaches for the coastal states to pursue in promoting stability and enhancing economic development.

DIPLOMACY IN STRATEGIC ISSUES

In order to promote peace and stability in the SCS, ASEAN has pursued a maritime diplomacy that is faithful compliance with the international and regional maritime agreements or regimes. This is a concerted effort of the regional states toward international maritime conventions or agreements to strengthen maritime cooperation in the region. However, in the ASEAN context, it is a consensus agreement among the leaders to promote peace and stability in the region. Two important foundations in attaining and committing towards this very concept are the formation of ASEAN in August 1967, and the Agreement on the Zone of Peace, Freedom and Neutrality (ZOPFAN) in 1971 or the Kuala Lumpur Declaration. ASEAN is far sighted, the fact

that the concept of ZOPFAN is considered as the foundation of the maritime security confidence building measures in the region, and set a bold commitment to establish "a zone of peace" without interference from external powers [5]. Other key components of ASEAN's security mechanisms, as it has evolved, are the Treaty of Amity and Cooperation of 1998 (TAC) and the Treaty of Southeast Asian Nuclear Weapon Free Zone (SEANWFZ) which entered into effect in March 1997 [6]. As testimony of its relevancy, TAC of 1998 was subsequently opened for accession by the states outside of the Southeast Asia region such as India (in 2003), China (in 2003), Japan (in 2004), Australia (in 2005) and U.S (in 2009) have ratified the accord. These agreements shall continue to play a pivotal role in the area of peace and stability, maritime diplomacy and approaches to regional conflict resolution.

The first adoption of some ASEAN political leaders especially from Brunei, Indonesia and Malaysia is the concept of mutual understanding and respect among the states leadership, that can be argued as a "personal diplomacy or political leaders diplomacy" which is a major contributing factor towards conflict resolution in maritime domain of Southeast Asia [7]. As a case in point, and highlighting a new era of relationship, the Prime of Malaysia, Abdullah Badawi and the Sultan of Brunei, Sultan Hassanal Bolkiah agreed on 16 March 2009 with the Letters of Exchange [8] that marked the end of the maritime territorial dispute in the SCS between the two states. The Exchange of Letter of Agreement between the Malaysian Prime Minister and the Sultan of Brunei stipulated that the Blocks L and M initially belonged to Malaysia (that is Petronas Carigali Sdn Bhd), is rightfully belonged to Brunei as shown in **Figure 1** in accordance to Articles 56 and 57 of UNCLOS 1982.
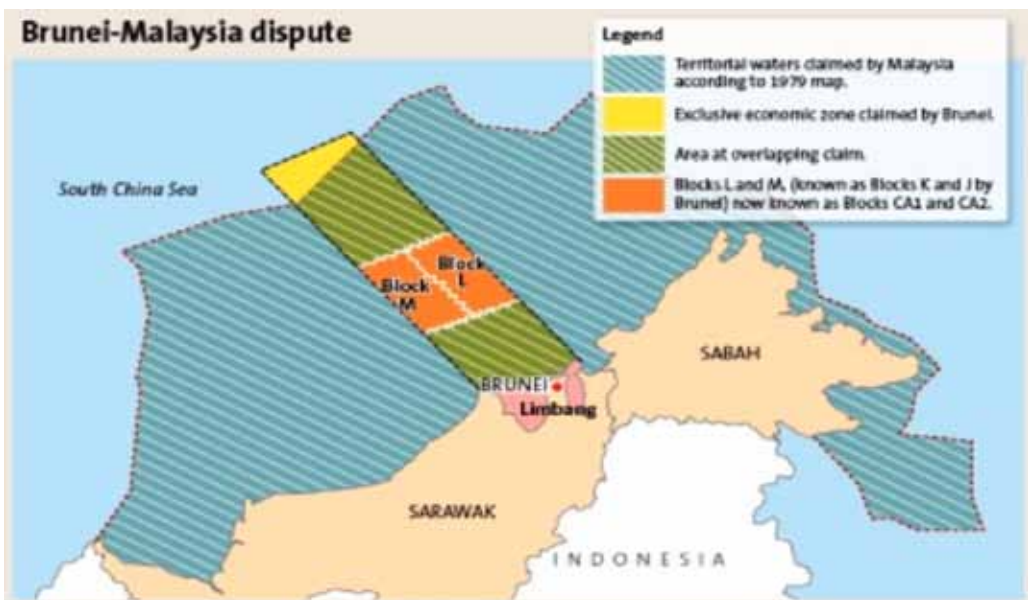
Figure 1: Overlapping claims between Brunei and Malaysia.
(Source: The Star Graphic dated 17 March 2009)

On the contrary, the Blocks L and M trade-off, Malaysia has gained two aspects. Petronas was invited by Brunei to enter into an agreement to develop Blocks CA1 and CA2 (formerly Blocks L and M) under the concept of "commercial arrangement area" where oil and gas revenue in the disputed area would be shared between the two countries. Also, both countries agreed to the existence of "unsuspendable rights of maritime access" which guaranteed the right of movement of the Malaysian vessels through Brunei territorial waters provided Brunei's laws and regulations are observed. Clearly, this is a classic example of the claimant states of the SCS and their political leaders adopting a personal diplomacy with bold commitment and sincerity for prosperity of the region.

Secondly, pursuing a commonality of interests framework in the maritime domain is absolutely essential to the regional states. This is well advocated by Thayer Mahan, a maritime strategist that, "control of the sea means access to the strategic assets of virtually the entire world."[9]. In an effort to attain peace and development, in the Mediterranean Sea, while adopting the EU maritime security mechanism, is Gibraltar [10] that is a territory covers 6.843 square kilometres (2.642 square miles) and shares a 1.2-kilometre (0.75 mile) land border with Spain as shown in **Figure 2**. The British Military Forces are responsible for the defence of Gibraltar. Despite the sovereignty of territory is still at stake between Britain and Spain, and a yearly agenda in the Fourth Committee dealing with Decolonization Process in the United Nations General Assembly, Gibraltar remained not only unofficially EU Naval Base in the Mediterranean, but also the offshore financial centre in the region.

Figure 2: The location Gibraltar in the Mediterranean Sea.
(Source: From Britannica encyclopedia)

Figure 3: Photographic view of Gibraltar.
(Source: From Wikipedia, the free encyclopedia on 23 September 2014)

Thirdly, the need to further enhancing peace and stability in the Mediterranean Sea, EU has consistently pursued its diplomatic commitment and influence towards international organizations for recognition of Cyprus and its status. Despite Cyprus, a divided island, with two international institutions that is the United Kingdom Sovereign base areas and the United Nations Peacekeeping Force administered buffer zone established since 1964, is accepted as a member of the European Union in 2004. **Figure 4** shows the divided parts of Cyprus, while EU fully recognized Cyprus' sovereignty and territorial integrity, the fact that the Island is strategically located in easternpart of Mediterranean Sea and gas has been discovered in the general area [11]. In short, the security requirement and economic development are crucial to the region.
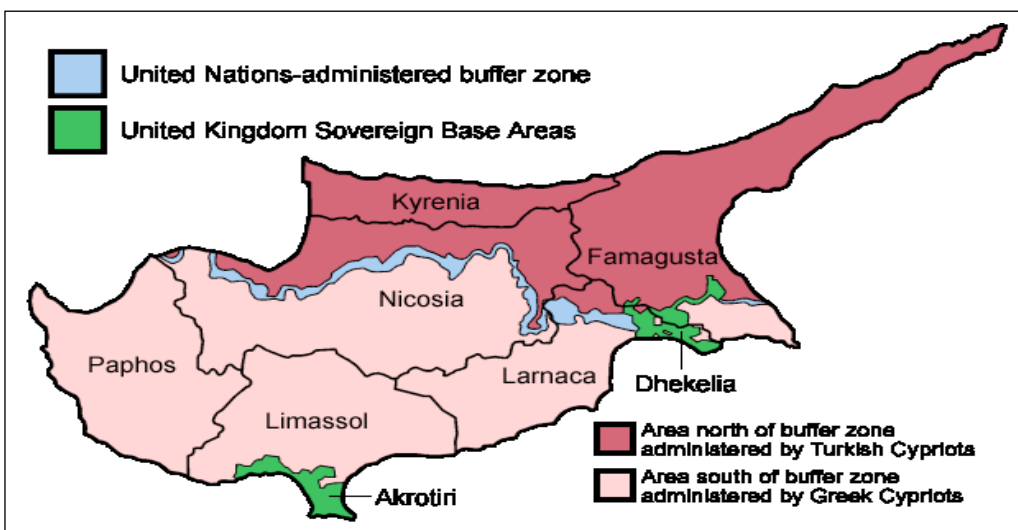
Figure 4: Divided territories of Cyprus Island.
(Source: History Education in Divided Cyprus in PRIO Report 2/2008)

Fourthly, from ASEAN's perspective, economic development in the SCS is another important milestone with respect to conservation and management of the fishery resources in the ASEAN region as shown in **Figure 5**. China and Vietnam signed the Fishery Agreement [12] in April 2004, and officially came into force on June 30, 2004. This agreement has illustrated the political will of the two countries towards mutual economic development despite having military frictions and overlapping maritime claims.
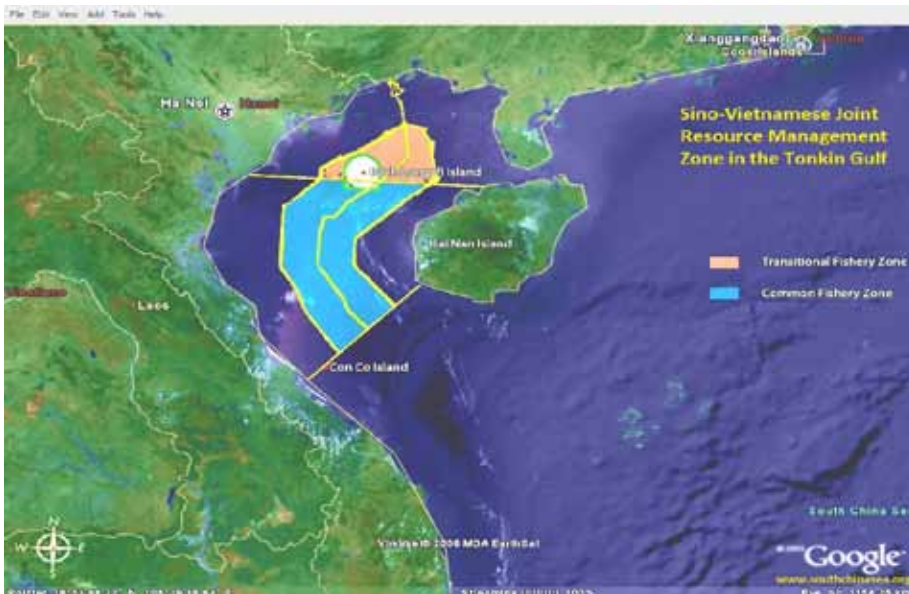
Figure 5: Location of the fishery domain.
(Source: Maritime Boundary Delimitation in the Gulf of Tonkin)

Finally, in pursuance and to uphold the Concept of Regional Arrangement as stipulated in Article 52, Chapter VIII of the United Nations Charter that is "relating to the maintenance of international peace and security as appropriate to the regional action,"[13] ASEAN has to establish a workable approach for future adoption in the maritime domain. In this context, a "light footprint of ASEAN maritime peacekeeping operations" for deployment in the strategic waters of the region should be established. The formation of ASEAN maritime peacekeeping force is a credible regional arrangement in dealing with such matters relating to the maintenance of international peace and security. The maritime peacekeeping force has to perform two major tasks: (1) to maintain the safety and security of sea-lanes of communication opened at all times as stipulated in the 1982 UNCLOS agreement, and (2) to deter military skirmishes. This commitment demonstrates ASEAN's concerted effort towards commonality of maritime security interests particularly in the surveillance of the EEZ of the claimant states. Equally important, the adoption of the United Nations Security Council Resolution 1816 of 2008 to combat piracy attacks in the Gulf of Aden in pursuance to Chapter VII of the Charter of the United Nations is an excellent example of political will of the regional states.

Significantly, the maritime peacekeeping force is implementable based on three reasons; ASEAN member states, like Brunei, Cambodia, Indonesia, Malaysia, the Philippines, Singapore and Thailand have the experience and credibility in the United Nations Peacekeeping Operations as indicated by ASEAN's contribution of 3,880 of their military personnel in the current United Nations Peacekeeping Operations as at September 2014 [14]. Also, some ASEAN Navies like the Royal Malaysia Navy and the Republic of Singapore Navy, have participated in maritime duties in the Gulf of Aden in 2008 and 2009.

CONCLUSION

Peace and stability in the SCS and Mediterranean Sea require cohesive commitments of the major stakeholders namely, regional states and extra-regional powers. In addition, the regional states' maritime diplomacy, consisting of special relationships between political leaders or personal diplomacy, commonality of security interests, and establishing a light foot-print of maritime peacekeeping operations are important mechanisms for coastal states of the SCS and Mediterranean Sea.

Finally, in implementing these mechanisms in both maritime domains is a source of unity and prosperity. The coastal states or claimant states are required to give the following commitments:
a) Political will and determination
b) Promoting maritime security and economic development.
c) Strengthening international maritime regimes and regional agreements.

ACKNOWLEDGEMENT

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IRAN'S NUCLEAR PROGRAM: THE UNITED STATES RESPONSE

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ABSTRACT

In pursuance of its ambition to harness nuclear energy, Iran, in January 2006 had decided to proceed with the nuclear development program. Although the West, especially the United States, refused to accept Iran's repeated contention that she is pursuing the nuclear program for civilian purposes and not for building nuclear weapons. Iran continues to defend her interests to acquire the nuclear program partly as her national interest, as she is the only government administered wholly by a Shi'ah regime. The nuclear factor in the US' policy towards Iran is studied in a larger context, and that it has an impact at all levels, particularly to the US and also at the international and regional levels. Therefore, the purpose of this paper is to identify and to examine the extent of the threat imposed by Iran's nuclear development program towards the United States' interests in the region and to discover the United States' response, either military or non-military. Thus, the objectives of the study are firstly, to identify and to examine the extent of the threat posed by Iran's nuclear development program towards the US' strategic interests in the Middle East and secondly to examine the most probable US military or non-military response towards Iran. From the studies conducted, the nuclear program developed by Iran could directly threaten the stability in the Middle East and seriously aggravates the US' interests. Nevertheless, it fulfils the dual function of preserving Iran's national sovereignty and also enabling her to enhance her economic development. However, the US could utilize the non-military response by seriously engaging Iran especially with her newly elected president to downplay Tehran's aggressive stance and to develop the nuclear program strictly under the control of the IAEA and the supervision by other international organizational bodies.

Keywords: Iran's nuclear program, nuclear energy, Middle East, IAEA

INTRODUCTION

Background

In 1979, during the Carter Administration, Iranian revolutionaries stormed the American embassy in Teheran and took dozens of the US' diplomats and Marines captive. They held them for more than a year accusing them of trying to overthrow the revolutionary government and to reinstall the Shah. This episode had marked the beginning of the strained Iranian relations with the US and her policy towards Iran

progressively worsened. The US' concern about Iran was not so much on the military, but from her potential ability to export Islamic revolution all over the Middle East. This has been viewed as threatening the "stability" that the US had created for itself.

The emergence of Iran with the intention to become a nuclear power in the region would be a threat to the US' interest. Iran is determined to harness nuclear power as a means to project power energy to the country instead of electricity. However, the US and the other countries in the region are very cautious about Iran's aim of using nuclear energy as Tehran had stated. The US strongly believes that Iran has other ulterior motives to harness and to develop the nuclear power which is not so much for peaceful or civilian purposes but for developing nuclear weapon. A nuclear equipped Iran would destabilize the region and this could affect the US' interests there, especially in regard to the safety and security of her ally in the Middle East, Israel. The US immediate response towards this threat will be by contemplating to use a non military approach that is using its influence and authority to ask the West and her allies to enforce sanctions against Iran or by using military approach to stop Iran from achieving the capability to develop nuclear weapons.

This paper seeks to find out if Iran acquires the nuclear capability either for civilian purposes or otherwise, what will be the principal US response to counter the perceived threat brought by the Iranian nuclear program. Furthermore, will the appropriate US response have any real impact to deter Tehran's ambitions to continue with the nuclear program? The US strongly believes that a nuclear armed Iran could create more instability in the region and thus could have some bearing on the US' position in the region. This paper will attempt to answer these critical questions, and to find out what would be the US' responses towards Iran in terms of non military or even military approach. The US maintains that if Iran possesses nuclear capabilities, she could endanger global security and stability. Should the US or her ally, Israel in the Middle East, launch a pre-emptive military strike against Iran, the Middle East could be further destabilized, and the security of oil supplies could be seriously threatened.

UNITED STATES INTERESTS IN THE MIDDLE EAST REGION

Despite the physical distance between the US and the Middle East, the US influence has been present in every country within the region. Throughout the 20th century, the US' strategic interests that include a long-standing competition with the Soviet Union have forced the US' interventions ranging from diplomatic proposals of friendship to full-blown wars. According to Markey, the interests of the US in this region since World War II are basically for three main reasons. It is inherent to understand that the US' interests in Iran are in the specific factors such as the availability of natural resources (fossilized fuel) that are reported to be in abundance in the region and the safe flow of oil to the US' friendly countries such as Kuwait or Saudi Arabia. It is the US' responsibility and interest to protect the safety and security of Israel and on the overall security aspect of the Middle

East region upon the demise of the Soviet Union's power and hegemony at the end of the Cold War. Thus, it also brought to the fore the issues of terrorism and the rise of religious extremism.

The US is also keen to expand her lucrative business of the arms sale to the rich Middle East countries which are eagerly and constantly in an arms race to beef up their military hardware. Countries such as Saudi Arabia, Kuwait, Oman, Bahrain and a few others do not have any cash flow problems and the US keeps them on the desired list of potential arms buyers. With Iran seen as a threat to other majority Sunni countries, the arms sale is predicted to reach a higher level than before. The idea is to keep the countries continuously buying arms from the US by inflating the Iranian threat [1].

IRAN'S NUCLEAR DEVELOPMENT PROGRAM

Iran's Desire for Nuclear

Iran's civilian nuclear energy program began while Shah Mohammed Reza Pahlavi was still in power. He bought a five-megawatt research reactor from the US in 1967. Iran was one of the first to sign and ratify the Non-Proliferation Treaty (NPT) in 1970. Iran's nuclear energy program was supported by several Western powers. The US, France and West Germany had all provided Iran with reactors and technical training. The Shah's motives were a combination of the Iranian national ambition and a concern for the direction of the neighbourhood.

After the 1979 revolution in Iran, her Spiritual Leader, Ayatollah Khomeini stopped the program claiming that nuclear program was anti-Islamic. Since the 1979 Islamic Revolution, Iran has been a fundamentalist, radical Islamic nation with her mind set on jihad or holy war against non-Muslims. Iran always talks about her great civilization and is very proud of that, but the US and her allies are not ready to accept that kind of argument. According to Mark Hitchcock (2011)[1], since 1991, there were three key events that have led to Iran's rise to a position of power in the Muslim world. These events which encouraged her to embark onto a nuclear option are as follows; the Soviet Union came apart in 1991, the war in Iraq has destroyed the military machine of Iran's enemy and the ongoing conflict in Iraq and an overstretched US military. Iran recognized that the West is dependent on oil and will do almost anything not to disrupt the fragile oil supply line. Iran lies along the Persian Gulf and could cripple world supply by several means at her disposal. These factors have come together and given Iran what she believes is the perfect time and ideal opportunity to act.

Iran's Justification for Nuclear Program

To influence the world about Iran's interest to get nuclear program is discussed in three perspective areas, which is in the global perspective, regional perspective and the domestic perspective. In the global perspective, it is observed that Iran receives 100

percent support from veto power countries; Russia and China besides the second semi periphery countries such as Syria. Iran also uses the term "Nuclear Program for Peace" to supply energy for daily uses, and it is proven when Iran signed the nuclear contract with Russia in January 8, 1995. Iran is a signatory to the 1968 Non-Proliferation Treaty (NPT). This treaty allows for nuclear research for peaceful purposes. Iran insists that she is engaged only in peaceful nuclear research.

The second perspective is regional, in which the existence of Israel in the Middle East is considered a threat to the Arab countries. Most of the Muslim people and scholars see that it is necessary for Iran to have a nuclear capability to stabilize the hegemonic power of Israel and become an agent for "Balancing of Power in Middle East".

The last perspective is domestic, when the Supreme Leader who was selected from the Shi'ah scholars is a very influential person among the Iranian people. The support of Ayatollah and the other Shi'ah scholars cause the people to accept all the actions that the Iranian people believed can bring Iran to become a great country.

After Ayatollah Khomeini came to power, Iran's nuclear program became stagnant until 1984, whereby Iran was entangled in a brutal war with Iraq. Due to the fear of some losses, Iraq had used chemical weapons which were largely ignored by the international community. This had forced the Iranian regime to find a balancing capability and nuclear (along with chemical and later, biological) weapons. This quest appeared to be that balance. However, the US has led arms embargo in response to the revolution's takeover of the US Embassy in Teheran. Iran had nowhere to turn to and felt isolated from the international community while Iraq enjoyed economic and military aid from Europe and the Soviet Union. "These memories continue to generate bitterness among Iranians" and are prime motivators in the regime's "strong anti-colonialist nationalism" as she strives for self-sufficiency in every respect, including her nuclear program [2].

The strongest desire to build nuclear weapons in Iran comes from the fact that her key enemies are nuclear-armed and the belief that a nuclear deterrent is essential to Iran's national security, or at least the security of her regime. Iran's primary enemies, Israel and the US, have nuclear capability. So does regional rival Pakistan. Iraq had made no secret of her own nuclear ambitions.

THE UNITED STATES NON-MILITARY RESPONSE TO IRAN'S NUCLEAR PROGRAM

In order to ensure that Iran understands that the US means business, the US maintains a Dual Track Policy in 2009 to ensure Iran does not use the nuclear program as a threat to the other states in the region. The Dual Track Policy which is greatly supported by P5+1, the five members of the UN Security Council – China, France, Russia, the United Kingdom, and the United States, plus Germany, under the auspices of the European Union, involves continuous diplomatic effort and at the same time enforces sanctions

whenever applicable. It is just like the US is using the 'carrot and stick' approach to make Tehran decide on the outcome of the continuation of pursuing its nuclear program.

During President Bush's administration, he has continued most aspects of the containment policies preceding the administration of Clinton's terms that imposed a ban on the US' trade and investment in Iran in 1995, and a 1996 law imposed sanctions on foreign investment in Iran's energy sector (Iran-Libya Sanctions Act, ILSA). The identification of Iran's efforts to obtain weapons of mass destruction and delivery means, coupled with her support of terrorist groups, as key concerns of Bush [3]. The policy has shifted towards engagement in 1997, where the sanctions were eased which allowed the US' exports of food and medical supplies and the importation from Iran of goods, such as carpets and caviar.

The US has consistently worked with her allies to prevent arms and advanced technology sales to Iran and to limit Iran's influence over regional energy flows. The sanctions of the US, including the bar in purchases of the Iranian's crude oil and the US' companies' investments in Iran. The ILSA was renewed for another five years on August 3, 2001. It restricted many aspects of Iran's military build-up, but had limited practical impact on the Iranian nuclear program. As the analysis and research conducted by Cordesman, Gold, Khazai, and Bosserman (2013) show, that the US steadily applied broader unilateral sanctions since 1979 and pushed for international action. However, until the end of 2011, the result of the unilateral and the UN's sanctions were far too weak to have a critical impact on Iran, especially on the expansion of the nuclear program [4].

After several years of failed bargains, most notably to persuade Iran to halt uranium enrichment and to grant greater transparency, as to the purpose of her nuclear program. It was only at the end of 2011, and in the beginning of 2012, that Iran's steady progress towards a nuclear weapons capability which led the US and her European allies to begin to apply strong and comprehensive sanctions on Iran's energy exports, the ability to trade, and her financial system.

The US' Diplomatic and Multilateral Efforts

Based on CONSILIUM (2013)'s report on the EU and Iran relations, the EU partnership with the US as part of the Permanent Members of the UN Security Council and Germany, the EU3 (or sometimes referred as P5+1 or E3+3 by the European countries will subsequently be used interchangeably in this paper) have supported UN sanctions and lobbied both non-Western members of the Security Council to approve the UN's resolutions targeted at Iran's nuclear program [5].

Despite the EU3 (France, Germany, and the United Kingdom) offering Iran several proposals to resolve the nuclear issue during negotiations with Iran in 2004 and 2005, none of them were accepted. On 2006, China, Russia, and the United States joined the three European countries as part of a format known as the "P5+1" or "E3+3"—in

reference indicating the permanent five members of the UN Security Council plus Germany, which offered similar comprehensive proposals to Iran.

After Barack Obama took over the post as the new US President, he and his administration worked to revive diplomacy in Iran's nuclear conflict; Obama's White House team spent its first months developing a new Iran policy [6]. However, some critics of the US government only offered limited detail on a broader strategy for Iran [7]. Until April 2009, the US had outlined her new approach, as Obama tends to a more conciliatory rhetoric and shows the willingness to engage in a direct dialogue through a high-level contact towards Iran.

The US' Propaganda against Iran

Since 1979, the US' policy towards the Iranian Islamic Republic had caused relations to worsen. Within the past few years, the US had missed important opportunities to foster a better relationship and to utilize Iran's regional influence to her advantage. This was in view that Iran, as compared to other states in the region, could have countered the Iraqi threat. Instead, the US filled up the regional political vacuum with her own military forces at a very high economic cost. Furthermore, the US alienated Iran by condemning her as part of the "axis of evil." This propaganda was extensively used to portray to the world that Iran would likely use the nuclear program to build weapons of mass destruction using the nuclear technology. The US also creates fear that the Shi'ah rule in Iran can threaten Sunni Islamic state that is pro-US, for example Jordan, Saudi Arabia, United Arab Emirates and Egypt. Furthermore, Iran is not a democratic state from the US' perspective as the state apparatus and society is controlled by theocrats. Therefore, the rise and expansion of Shi'ah Islam under the Iranian leadership is viewed by Washington as a direct threat to pro-US regimes and Israel in the Middle East.

THE UNITED STATES MILITARY RESPONSE TO IRAN'S NUCLEAR PROGRAM

The Strategic Importance of Military Action

The US' policy indicates that the strategic importance of a military action on Iranian's nuclear development would be to prevent Iran from developing nuclear weapons, and it also realised the potential threats and risks along with Iran nuclear weapons developments. The Iranian nuclear weapons would destabilise the Middle East region and threaten the US' interest in the region and Israel. There should not be another major power that could challenge Israel in the region. Therefore, the strategic objectives of military actions would be to prevent or shut down the Iranian nuclear development.

A weakened Iranian military does not bode well with the Iranian ruling party and the government. Without a strong military support, the ruling party is open to criticism by the people and could even be overthrown if the opposition manages to gain enough

support to bring the government down and constitute regime change. That would be the biggest concern for the ruling party. The most likely force to execute regime change would be from the Iranian people themselves rather than from any exterior forces. If the US' strategic military objective is to bring regime change in the Iranian leadership, the US should realise that she would require more military assets and personnel deployment as compared to the US' involvement in Iraq and Afghanistan. This is due to Iran's size, strong population and nationalism. It would require more extensive military actions to overthrow the Iranian regime.

A regime change in Iran would bring about other subsequent changes such as the political change in Tehran. The political change could bring about a new government, which could be pro-US or would seek to restore the diplomatic ties with the US. Although it is unthinkable for the time being, it could happen. If it does, it would bring change in the power structure in the region and subsequently better relations among the regional states. This scenario would ensure stability and peaceful political environment in the Middle East.

The US' strategic policy towards Iran's would demonstrate the US seriousness and determination to prevent any potential nuclear power to emerge that would destabilise world peace. It would also deter others who are pursuing their nuclear ambitions. The US has acknowledged that one of the greatest risks associated with Iran's determined drive to acquire a nuclear and potential nuclear weapons capability is that it will spark further nuclear proliferation in the region. Six new states in the Middle East are now ready to consider developing nuclear programs. The oil-rich Arab Gulf States consider starting a joint nuclear program for peaceful purposes [8].

The Impact of Possible US Military Action on Iran

Currently, the region is still sensitive to any political instability or infighting among its neighbours. There were two situations that sparked the unrest in the region. Firstly, with the demise of Saddam Hussein when the US invaded Iraq in 2003, Iraq has been thrown in constant turmoil with sectarian fighting and along the Sunni – Shi'ah divide until today. Secondly, when Iran announced that she will proceed with her nuclear development program, the region became insecure and was in constant fear of danger. As a result, Iran currently has something on the upper hand in the region. This has greatly concerned conservative Arab regimes, which are afraid of Iran gaining too much power. Therefore, Iran's immediate neighbours would welcome any move especially from the US to attack Iran and to stop her nuclear development program. Iran's neighbours too would like to see a regime change if the US achieves her objective in Iran. However, they are wary that the conflict might destabilize the region further. Introspectively, these Iranian neighbours were quietly praying that the US will engage her military assets to destroy the Iranian nuclear facilities so that it would disrupt Tehran's ambitious nuclear development program. Otherwise, it will destabilize the security and safety in the region in the long run and could even worsen and spread to other parts of the world too.

As much as the rest of the world demands an assurance from Iran that her nuclear development program would not be misused to build nuclear weapons, the other countries want the stalemate to be resolved as peacefully as possible. The United Nations Security Council (UNSC) including the P5+1 and the EU want the Iranian government to heed the calls to stop her nuclear program or at least allow the international bodies to monitor the development. The world understands that any military attack on Iran and the region will have a serious economic implication. The fuel supply would be seriously disrupted and this could cause the oil prices to increase. The ship routes in the Straits of Hormuz would be potentially hazardous and could be targeted by Iranian naval ships. As a result, the insurance premium for ships plying in the Straits would be substantially increased. All these incremental incidences would have a serious economic cascading effect, not only to the region but also on the global scale. Thus, the world leaders are wary about giving the US the green light to proceed with her unilateral military response.

The Impact of Military Action on the United States

As much as the US would like to opt for a military response against Iran, the US needs to be wary and cautious about the repercussion and feedback about getting into another military fray in the region especially immediately after the serious setback that the US military had suffered in terms of deaths and other casualties. The US public is very concerned about the need for the US to interfere in another Middle Eastern country which in the eyes of the US public, still does not have the technology and capability to build nuclear weapons.

Politically, the US Congress is very much divided in agreeing to send the US troops in the region simply because it will be the most unpopular decision which will be turned down by the public. The Obama Administration would like to avoid any unpopular moves that could threaten his administration. Militarily, the US might not be able to maintain another force in the region when her own troops are still engaged, although at a lower scale, both in Iraq and Afghanistan. Although President Obama had agreed to pull out the troops from Iraq and Afghanistan in 2014, the fact is that there are still some troops left behind to look after the US' interests in both countries. Logistics too will be deployed thinly to support all the military needs if the US is adamant to send her troops to Iran. Economically, the US might not have the adequate reserves to maintain other fully committed troops overseas. Judging by the current fiscal and economic situation in the US, it would not be a wise move to commit another huge sum of money on another military operation which could take years to untangle. Globally, if the US moves unilaterally in Iran to counter the Iranian perceived nuclear threat, it will make the US look just like another rogue country which could simply ignore the UN Security Council resolutions and take matters into her own hands. The other four permanent members of the UNSC did not vote in favour of the US moves then.

CONCLUSION

Iran is now right in the US crosshair because of Iran's intention to proceed with its nuclear program. Right from the beginning, Tehran had openly declared that the nuclear program was solely for peaceful purposes. The US strongly believes that Iran has other hidden motives to harness and develop the nuclear power not so much for peaceful or civilian purposes but for developing nuclear weapon. A nuclear powered Iran would destabilize the region and this could affect the US' interests, especially with regard to the safety and security of Israel. The paper also concludes that the Iranian's desire for nuclear weapons, even though it was claimed by the Iranian government is only for energy purposes, scholars argue that the nuclear weapons appear to be the deterrence needed for security and to gain respect. The desire for nuclear weapons emerged after the bitter experience in Iran-Iraq war. Iraq had used chemical weapons against Iran during the war and she received little attention from the US and the international community. Iranian leaders conclude that Iran could not trust anybody and needed to develop deterrence as a mean to protect her from external threats. The nuclear weapon appears to be the deterrent factor needed. The war with Iraq appeared as the primary driver for the Iranian nuclear weapons after the 1979 revolutions to seek respect and equal treatment from the international community and in addition, the international security scenario after 9/11 incidents have exacerbated the Iranian feeling of vulnerability and insecurity [9]. The paper also concludes that the Iran's interests are firstly; deterrence capability to achieve security and respect and secondly; the balance of power in the Middle East region to achieve regional dominance. The sanctions imposed by the international community are not the real factors that bring the Iranian regime to the negotiation table, but it is because she has achieved the deterrence capability that she requires. The sanctions imposed, brought suffering and bitterness to the Iranian people and its economy, yet strengthen Iran's motivation for nuclear capability. The US and the international community have failed to de-motivate Iran to roll back her nuclear ambitions. The US and the international community's need to seriously address these motivational factors.

The continued use of coercive diplomacy or the military in lieu of non-military response to curb Iran's nuclear program will only strengthen her fanatical regime and to solidify Iranian public opinion behind a national goal of obtaining nuclear weapons. Therefore, Washington should realize that threatening Iran with tougher sanctions and military attacks strengthens the Iranian fanatical desire for nuclear weapons.

The paper concludes that the US' option for military strikes did not get the sympathy and the support that the US urgently needs. The open and public debates as to whether the US should launch a military attack unilaterally are not supported by the US general public. The US also believes that a military operation might cause the countries and non-state actors that are sympathetic to Iran to launch counter attacks or terrorist attacks on the American lives or the American soil. Therefore, at present, President Obama still insists that diplomacy with high level negotiations is still the best option. Obama lays out the diplomatic offer and solution to the new Iranian President Hassan Rowhani during the recent 68th United Nations General Assembly.

As the way forward, both leaders should be able to achieve some common understanding or some common ground on the issue related to the nuclear program. On the same ground, Iran should be treated respectfully in the international organization and should also play her role in the international commitment for peace and prosperous stability and future development. President Obama had a firm belief that Iran under the new president will be more approachable and less radical in discussing the need to employ the nuclear development program. President Rowhani is seen as a man who is more into moderation and is willing to engage in diplomatic negotiations rather than shouting rhetoric like the former President Ahmedinejad used to do. This would be a good opportunity for the US to re-engage with Iran and establish a new diplomatic relation that could foster better confidence building measures between the two countries.

Meanwhile, both the US and the Iranian government authorities should take advantage of the renewed relations between the two Presidents. The outcome from the 68th UNGA meeting could mean a thaw in the icy diplomatic relations between Washington and Tehran. Expert committees on nuclear and non-nuclear issues would be to come up with mutually acceptable policy recommendations. With the inclusion of the IAEA, the EU and several international bodies, the dispute on the Iranian nuclear development program could be brought to its conclusion when all the international bodies could agree on its actual usage as a peaceful means to generate power and electricity as claimed by Tehran.

Finally, after a long decade of hostility between the US and Iran, the diplomatic solutions to the most challenging issues in the US' security interest has been concluded with the signing of an 'Interim Deal' between P5+1 with the Iranian government. The Interim Deal has given the diplomatic effort a pathway for negotiations to play its course. The historic Interim Deal which was signed on 24 November 2013 in Geneva would roll back the Iranian nuclear program in exchange for a limited sanction relief.

The Interim deal reached, have brought positive and negative responses from the US public, Congress, as well as the parties in the US Senate. A new *Washington Post/ABC News* poll released on 27 November 2013 found that a 64 percent of Americans would support an agreement between the United States, her international partners and Iran that would allow some easing of sanctions on the Islamic Republic in exchange for curbs on its nuclear program. The same poll also found that Americans are skeptical whether a first step agreement will ultimately prevent Iran from developing nuclear weapons [10].

The American public's opinion was also supported by a bipartisan group of 79 American national security officials, when they agreed with the White House's diplomatic efforts to resolve the impasse regarding Iran's nuclear program [11].

While debate on the agreement is still going on,   Republicans have already begun to denounce it. The deal "appears to provide the world's leading state sponsor of terrorism with billions of dollars in exchange for cosmetic concessions that neither fully freeze nor significantly roll back her nuclear infrastructure." They also suggested that Congress

should move to impose new sanctions on Iran despite the historic agreement reached in Geneva between the US, her international partners and the Islamic Republic over Iran's nuclear program [12]. The same argument shared by neo-conservatives group which has been supported by Israel to put pressure on the US president to go to war. They argue that the agreement reached between the P5+1 and Iran does not go far enough because it allows Iran to enrich uranium to low levels, which they claim violates past UN resolutions that stated Iran was not allowed to enrich. However, no UN resolution had said that Iran was not allowed to enrich uranium, only that it temporarily "suspended" her uranium enrichment program while negotiations were taking place. The Congress is divided in their opinions on the agreement reached where Sen. John T. Bennett in his statement said "this is a Kerry/Obama deal and that the rest of Congress is not behind them" [13].

Nevertheless, the White House had opposed efforts by some members of the US Senate to impose new sanctions against Iran after the six month period of interim deal or if the Iranian regime had violated the terms of the agreement. The paper concludes that the Obama Administration does not receive popular support in dealing with the Iranian nuclear program, while at the same time, the US President has also to accommodate his counterpart in the P5+1 to reach a significant deal with the Iranian regime in the process of negotiation on nuclear non-proliferation in the Middle East. The P5+1 are putting their best efforts to achieve a permanent agreement with Iran who is in the process to 'rollback' her nuclear ambition. The US needs to allow diplomatic negotiations to play their role for better relations with Iran after a long decade of hostility. Any new sanctions imposed on Iran would only make the Iranian regime to proceed with her nuclear bomb and subsequently on her withdrawal from the NPT as well as to reject the IAEA's inspectors. This would only worsen the issue in which the international community will leave with no information on the progress of Iranian nuclear weapons development.

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UNITED STATES - INDIA STRATEGIC PARTNERSHIP: IMPLICATIONS FOR ASIAN SECURITY

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ABSTRACT

The strategic partnership between the United States US and India is to be anticipated as one of the most important political arrangements in the region. It was inaugurated during the Bush Administration, and became more resilient after the 9/11 incident. Subsequently, once Obama came into power, the focus on India was elevated, central to his administration, and formulated towards unprecedent levels. New Delhi sees this partnership as extremely beneficial opportunity hence goes to some extremes to ensure steps are engineered to realize this coalition. Washington views this as national interest and in dire need of a strategic partner while New Delhi needs an ally that can stimulate and assist in the development of the country. At the same time, both countries are compelled to pursue a capable ally to restrain the possible rise of China's power in the region. As its strategic ally, the US will not only be able to exploit Indian military bases and logistical support, but also to persuade and manipulate other countries in the Asia-Pacific region to its advantage. To India, forging such a strategic relationship with the US will give New Delhi the technological advantages and collaborations it requires for its economic development. Together as a strategic partners, both the US and India will learn to facilitate, expand their economies and strategic influence in the region. This paper examines the significance of this strategic partnership and the benefits that would cascade. Incorporated in the analysis are the possible courses of action to be contemplated to balance China's rising power. The paper examines the implications of the strategic partnership for Asian security, and concludes that this enhanced bilateral relationship has a positive impact on the regional balance of power in Asia which is deemed important to both the US and India.

Keywords: US-India strategic partnership, the rise of China, balance of power, post-cold war, Asian security

INTRODUCTION

The end of the Cold War served decisive ramifications in the security architecture of the world at large. The disintegration of the Soviet bloc countries paved the way for more democratization of national governance and international relations. Scholars argue

that the fall of the Soviet Union were basically attributed to political and economic factors that gave rise to a new world order on the principles of globalization (market economy). The US emerged as a superpower and became unipolar. What we now witness is a transformation of international politics. Realism been hijacked with the introduction of Neorealism that opportunes the beginning of new democracies and interdependence. Unipolar indirectly invited unbalanced power that compelled some states to increase their own or ally with others to bring an international distribution of power balance.

With regards to Asia, China has embedded its footprints, slowly emerging as a strategic hegemony that could match to a level of parity with the US As an expanding power, China appears ready to transform Asia; however the emerging security structure is still unclear. The US remains adamant to diffuse such attempts and persuade China that such effort are unlikely to succeed.

India's entry into contemporary global politics has witnessed geopolitical realignments after 1991. Post-Cold War served as the turning point for Indo- US relations that were crafted from finding common ground in geostrategic realities in the changing global environment. This was further substantiated with an expanding economy along with increasing security ties with Australia, Japan, key Southeast Asian nations and the US have inevitably accepted and positioned India to have a decisive impact in the distribution of power in Asia.

Given the interest accorded by these states i.e. the Indian Ocean, Southeast Asia along with South China Sea (SCS) and East Asia has emerged due to geostrategic reasons. These sea lines of communication (SLOC) are crucial for trade, economic livelihood and global connections as it also serves as the gateway to the pacific. China's locality coupled with its expanding influence in the region has elevated its prominence that can impact to the economy and security climate. Further to that, South Asia is also the focus of the US global counter-terrorism efforts.

Having established this, given the US concern and standing as a unipolar, India has managed to strengthen it and elevate the nation's strategic prominence, setting itself as a platform for relations to advance. In such a dynamic environment, the door is always open for other possible Asian powers to play an influential role in the shaping of regional dynamics. This certainly facilitates a power gap between a dominant power, dominating states and its supporters on the likelihood of great power conflict.

Following the changing power dynamics, India's focus towards the region and the US has emerged as the cornerstone of India's foreign policy. It is perhaps in India's intent to deter the possibility of regional hegemony that may cascade into instability. It is also in India's interest to avoid any power transition. It is for these reasons that India has embarked on strategic partnerships that include the US to facilitate shaping of regional dynamics as well as establish investment links and enhance tradings.

DEFINITION AND CONCEPT

Security

Security is usually associated with Realist but then again security in the present contemporary environment is not a stand alone concept. Realist scholar Morgenthau (1948) has stated that *"political relationship requires never ending struggle for interests and power"*[1]. It therefore cannot be relegated that security issues do affect countries and the manner in which they are addressed is pertinent. It could be in the form of foreign policy formulation or in some instances a combination of economic, political and defence.

Balance of Power

This paper will be approached using the Neorealism school of thought. However in advocating Neorealism one cannot dispute that Morgenthau's concept of power is essentially a Realist perspective that though it is strongly associated with politics, however economy and other fields do have their own distinctive methodologies and concept that are inter-related.

Neorealist scholar, Kenneth Waltz (1979) introduced 'balance of power', which represents one of the most distinguished concepts in the Realist school [2]. He argues that for survival and national interest, a state may choose to engage in balancing that is the key element in achieving and maintaining international order. Evelyn Goh (2005) adds further justification to this concept by insisting that such 'balance of influence' goes beyond the notion of military and non-military means. She further emphasize that states will balance more when there is a change in distribution of power [3].

The US primary concern has been China's assertiveness and expanding influence. Washington's revaluation is influenced by Asian booming economies, demand for energy resources and freedom of navigation. Almost concurrently India's military capabilities have also grown and are able to be the net provider for security in the Indian Ocean and beyond. Indian External Affairs Minister has listed India's security concerns as its periphery and regional security, Asian balance of power, securing channels to west Asian and global security interest. The Indian Foreign Minister's outlook is very much in line with Kenneth Waltz (1979) whom contends *"balancing is the primary means by which states pursue their security goals for own survival and sovereign independence that essentially also requires strengthening of ones position through alignment with one or more other states"* [2].

The need for India to rise as a major power is matched with China assertive intentions that is impacting on the distribution of power in Asia. As the dominant power in the South Asian subsystem, India has a keen interest in minimizing the influence that potentially adversarial external power. Concerns are mounting that China is encroaching upon what New Delhi sees as its traditional sphere of influence. Beijing's expanding land and sea access to strategic ports, strengthening aid, trade, and even military links

with India's sub continental neighbours are seen to challenge New Delhi's aspirations of expanding its regional influence. China's development and acquisition of hard power could result in a dynamic disequilibrium. However, when confronting this reality, the US seems enthusiatic to facilitate India's rise in order to counteract China's growing influence.

Strategic Partnership

Morgenthau's (1948) states that the creation and maintenance of the balance of power has been America's 'fixed national interest'[1]. Following dramatic post-Cold War geopolitical conditions, the space opened for diplomatic initiatives and both countries have since been pursuing a `strategic partnership' in the context common principles and shared common interests. Such an approach is substantiated by Sangtu Koh (2006) whom explains; strategic partnership denotes *"the form of cooperation states entered into in order to obtain mutual gains in establishing or distributing their spheres of influence"* [4].

The US needs this strategic partnership to manifest its grip, and has undertaken much concerted effort towards its realization. Much of this attention is dedicated towards China; as an increasing assertive can pull its military and political influence in a highly fractured geopolitical neighbourhood that pose hindrance to the US presence. The US in a way requires this constructive strategic partnership that has been aimed at containment of China. Then again such strategic partnership must be based on equality, mutual trust, respect and understanding as India does not want to be perceived as a victim and in turn requires the cooperative relationship with China and other countries as well.

UNITED STATES AND INDIA IN ASIA IN THE POST-COLD WAR ERA

The security issues which are pertinent to the US that it needs to fabricate and support a relationship with India for the purpose of regional and global security. This strategic partnership is inevitable as one of the most important emerging and prospective relationship in the region. This relationship has matured from Clinton to Bush that witnessed it being further amplified following incidents of 9/11 and now Obama is further enhancing and deepening bilateral engagements and cooperation. The US has since viewed India as a leading player in South Asian affairs and a rising world power. Both economically and militarily, India is gathering momentum and this provides the US more diplomatic and strategic angles to play in the region. On the other hand, as a developing country with a number of problems rooted in over population, poverty and resource shortage, India's perspective on international security requires the military and diplomatic clout that the US can offer.

The other perspective that has compelled the region's security to be magnified is the growing importance of the Indian Ocean. As manifested by Ramesh Somansunderam (2011), *"its strategic locality as entry and exit to neighbouring sea routes, existence of*

natural resources and local rivalries that indirectly have amplified its importance" [5]. This in a way has contributed to India's economic value and significance that has further obliged the US interest.

The other contention would inevitably due to the rise of China, as argued by Zbigniew Brzezinski (1998), *"given its strong standing has began to flex its dominance within the region be it in financial grants, infrastructure development or military assistance"* [6]. States as Sri Lanka, Pakistan, Bangladesh and Myanmar are significant benefactors of such induced assistance. Such dominance prompted the US to announce its pivot policy to Asia [7], among its aim was to balance the rise of China, which was further manifested some initiatives that may be read as encroaching into containment.

UNITED STATES - INDIA STRATEGIC PARTNERSHIP ON PRINCIPLES AND KEY FEATURES

Many contemporary works have established India as the emerging superpower, next after China, especially in the Asian region. India is a recognized dominant power in the South Asia subsystem, India is the most populous democratic country and home to the fourth largest army in the world that is also equipped with nuclear capability. Due to its proximity, India is able to exercise almost exclusive control over the Indian Ocean and this in turn serves as the gateway in between East Asia with the Middle East.

US Preferences for India as a Strategic Partner

The history of the US-India relation comprises a broad range of areas such as political, economic, trade, technological, security, etc. The 11 September 2001 terrorist attacks on the US provided an opportunity for India to provide the US its full cooperation including its bases for counter-terrorism operations. The offer reflected the deep transformation that has occurred in recent years in the US-India relationship, hindered by the politics of the Cold War. President George W. Bush resumed the policy of Clinton's Administration. September 11 was the impetus needed for this changing relationship. The two countries came together to implement a cooperative framework based on democracy, economy, and security.

By 2001, India began collaborating with the US in three important areas known as 'trinity' which included easing restriction on dual-use high-technology goods, civil nuclear cooperation and civilian space cooperation. In a joint statement in January 2004, President Bush and Prime Minister Vajpayee announced *"the US-India strategic partnership included expanding cooperation in the trinity areas as well as expanding dialogue on missile defence (later termed as 'quartet')"*. Cooperation in the quartet further expanded reciprocal steps between both countries, known as the 'Next Steps Strategic Partnership' (NSSP) [8]. Cooperation through NSSP facilitates to establish cooperation in the fields of dual-use, space and nuclear technology. These forward inter-

actions moves not only developed trust and harmony in joint activities between the two states but also broadened defence sales opportunities for the US companies in India.

The US-India relationship today is marked by unprecedented convergence of geostrategic and geoeconomics interests based on democratic values and principles. This strategic partnership is visible in all the aspects of the bilateral relationship and is noticeable in the New Framework for the Defence Agreement, the US-India civilian nuclear energy deal, frequent joint military exercises, defence ties, defence sales, counter-terrorism cooperation, high-tech cooperation, and economic cooperation. But the most significant features of this strategic partnership are in the defence, security, and nuclear spheres. These issues are the main component of the wider US-India economic, political, and strategic relationship in the context of the emerging international order. Given current trends, the US and India will be the two biggest countries to be aligned in a bilateral security and defence partnership, and can have a stabilizing influence in the global balance of power in the 21st century.

UNITED STATES - INDIA STRATEGIC PARTNERSHIP AND ASIAN SECURITY

Over the past decade India has emerged as an important strategic partner of the US The rise of India's power is significantly less complicating for the US foreign policy strategy than China because India is a liberal democracy that has generally come to view the US power as beneficial for its own future influence in the international system. In addition, the US has an interest in encouraging India to become a net exporter of security in the Indian Ocean region (IOR), which is an increasingly important maritime sphere to the US interests in terms of free flow of commerce and energy as well as strategic depth with respect to the chokepoints at the Straits of Hormuz and the Straits of Malacca/SCS. India's participation in the emerging geostrategic architecture in East Asia and expanding security cooperation with Japan, Australia and ASEAN also serve to the US interests. With domestic political complications coupled with its disappointment with the US policy in Afghanistan, Indian insistences on 'strategic autonomy' have kept the transformation of the US-India relationship at a more incremental pace. There is broad consensus within Washington and Delhi that each depends on the other to sustain a favourable strategic equilibrium as Chinese power rises.

Economic Stability

The US has an over-arching interest in India's rapid, sustained economic growth and development. India's continued economic progress will be essential to its emergence as a major power and partner to the US, its central role in bringing peace and prosperity to South Asia and its ability to help shape a durable Asian balance of power. The economic reforms instituted by India over the last two decades have created a private-sector-led development alternative to China's state-led model [9]. If India is successful in expanding steadily the economic growth process to benefit its very large poor population, it will be a

powerful counter-example to China's approach in the global debate over which economic development model (liberal or authoritarian) will deliver the greatest overall benefit for its people. India's expanding commitment to domestic open markets and its increasing integration into the global economy will give it an ever-deepening stake in an open global economy.

India is one of the few major economies in the world along with China and Brazil that is fuelling global economic growth during a likely prolonged period of slow growth in the US, Europe and Japan. In the years ahead, the US economic recovery will depend on the rapid growth outside the US India's consumption led growth will help counter the slack in global demand created by the recession and slow recovery in the industrialized countries. Its growth will continue to provide important trade and investment opportunities for the US companies and investors with potentially high and sustained returns. China's turn towards favouring domestic over foreign companies for new investments and market access will make the opportunities in India even more attractive [9].

As India improves its infrastructure and regulatory environment, it will overtime become a new low-cost global manufacturing centre as China's cost structures swell and offer new opportunities for the US private investment. Similarly, agricultural reforms in India would create new avenues for the US investment. With its high-skilled workforce and successful technology companies, India is emerging as an advantageous location for research and innovation. The trend toward collaborating with Indian companies for globally applicable research and development is already evident in the information technology and pharmaceutical sectors. India's reform of its education sector would provide additional opportunities for the US involvement in India's economy [9].

Security of the Indian Ocean

The Indian Ocean is the third largest ocean in the world with an area of 73,500,000 sq. km. It was Admiral Alfred T. Mahan (1840-1914) of the US Navy who was reported to have said that whoever attains maritime supremacy in the Indian Ocean would be a prominent player on the international scene. The Indian Ocean has played a pivotal role in the history and indeed the destiny of its littoral states in East Africa, Middle East, South Asia and Southeast Asia. In the IOR that the US has manifested its vital interest and intends for India to become a more effective security provider and partner. The Indian Ocean SLOC are the energy and trade lifelines for all of South and East Asia, and their disruption or their dominance by a single power would have disastrous consequences for the global economy and potentially will lead to great power confrontation.

The increase in the US-India joint naval exercises and interoperability in the Indian Ocean has already demonstrated the potential for security burden-sharing. At a time when maritime boundary and resource disputes between China on the one hand, and Japan and Southeast Asian states on the other appear to be escalating once again, the US will need a proficient partner to stabilize the situation. Furthermore, as C. Raja Mohan (2010) has

written, *"deepening maritime cooperation might lead naturally toward a partnership between the two nations in other commons such as outer space and cyberspace"*[10]. The US relationship with India lies in the security realm. At present the most extreme of the US concerns are in South Asia itself: combating terrorism, preventing interstate conflict and enhancing stability. Looking ahead in a longer-term, equally critical interest of the US is India's role in maintaining a stable balance of power in Asia that is not inimical to the US interests.

This sea-borne trade is vital to India; it has to be protected against the growing maritime threat. By acquiring reckonable sea power, India will be able to achieve two aims. Firstly, other powers now understand that trade will not cross the Indian Ocean unless the region is safeguarded by a capable Indian Navy. World political and economic powers being attracted by India's vast market potential and trade prospects, therefore, find it increasingly profitable to befriend India in spite of Indian-held Kashmir issue. This is done in some cases at the cost of Pakistan. Secondly, a naval power of such magnitude provides India ample force to seriously affect the sea-borne trade of Pakistan and other countries in the region. However it has been argued that the US does not have a coherent geopolitical vision of the IOR and that the allocation of political and military resources makes it difficult for the US to make a credible commitment to the security of the IOR. To the extent that the US has an alliance structure in the IOR, it is composed of the residual relationships from other strategically important regions, thus decreasing its ability to react to the security threats within the IOR.

Balancing the Rise of China

The US has an economic and strategic interest in China's continued development given its increased economic interdependence. China is slowly establishing its emergence as an engine for global growth and potential net contributor to international security on problems ranging from non-proliferation to counter-terrorism. Extensive engagement in the bilateral Strategic and Economic Dialogue, the Joint Commission on Commerce and Trade, and multilateral forums to include Asia Pacific Economic Cooperation (APEC), ASEAN Regional Forum (ARF) and East Asian Summit (EAS) afford the US opportunities to reaffirm the importance of China's responsibilities as a major power to facilitate its integration with the international community in accordance with established rules and norms. At the same time, China's increased defence spending and pursuit of advanced military capabilities and assertive behaviour with respect to territorial claims in the South and East China Seas pose a potential military threat to the US and its partners that necessitate a comprehensive set of relationships in the region that would be commensurate with a force posture to discourage any attempt to alter the strategic equilibrium.

The US response to a strong China's foreign and military policy will have to be carefully calibrated. Ignoring greater China's assertiveness would fuel the emerging belief that the US is in unavoidable decline. History shows that when great powers falter, China does not hesitate to seize the opportunity to advance its interests, especially in the

SCS. Evident as the US forces withdrew from Vietnam in the mid-1970s, the Chinese grabbed the Paracel Islands from Saigon. Similarly, when the Soviet Union withdrew from Vietnam's Cam Ranh Bay and the US terminated its base agreement with the Philippines, China quietly occupied Mischief Reef to the dismay of Manila [11]. Yet a hostile and overbearing the US response would confirm China's suspicions that the US seeks to contain its rise, which could cement the emergence of the US-China Cold War. China's recent declaration of Air Defence Identification Zone (ADIZ) though confined to East China Sea but in the absence of any bilateral or international consultation further attest China's courageous resolve.

In addition, it would create apprehension to regional states who seek at all costs to avoid having to choose between the US and China. The US policies will need to combine firmness with subtlety. A strategy will need to be shaped that protects regional stability and reassures China's neighbours, but also avoids greater US-China strategic competition and the classic security dilemma, wherein each side believes that growing capabilities reflect hostile intent and responds by producing that reality. Sustained attention and commitment of sufficient resources to the Asia-Pacific region will be the key to assuaging the doubts of regional friends and allies about the US staying power. The US also need to maintain the military capabilities necessary to deter Chinese aggression [11]. In East Asia the US is in a dilemma, as it cannot abandon its military investment in a region that is home to the most dynamic countries in the world today. Also, it should not continue to view China as a temporary rising power that can be dealt with using traditional 'containment' strategies. China's growing role in Asia is only going to increase, whether the pivot continues or not. China does not need to issue its 'Monroe Doctrine' for the countries of the world to realize it will be the dominant power in Asia.

The pivot has succeeded in re-focusing the US attention on East Asia, assuring allies of its commitment in the region. Unfortunately to some degree it failed to establish this steadfast intent and has only added to China's suspicion that the US will not tolerate its rise. The Obama's Administration needs to make it a priority to have a more unified and coherent China strategy, coordinated by the highest-level. The widespread perception that the rebalancing initiative is aimed at China also creates a risks. The pivot to the Pacific is seen by some in China in starker terms, as focused on dividing China from its neighbours and keeping China's military in check. Such an impression may strengthen the hand of China's military (the People's Liberation Army), which has long been suspicious of the US intentions in the region. The military could in turn become more determined to strengthen China's anti-access capabilities and more assertive about defending China's territorial claims. The impression that the rebalancing is aimed at containing China could potentially make it more difficult for the US to gain China's cooperation on such issues as Iran and North Korea [12].

The notion that the rebalancing seeks to counter China carries potential risks for the US economic interests. China is the US second-largest trading partner, its third-largest export market, and the largest foreign holder of the US government debt. It is also the

world's second largest economy, with an increasingly influential voice in debates about global economic management. Deterioration in the already frayed US-China strategic trust could potentially make China less responsive to the US concerns about its economic policies and about market access for the US firms in China's market. It could also potentially make Beijing less willing to compromise on big decisions related to the global economic system [12].

CONCLUSION

The strategic partnership of the US and India has indeed set the groundwork and benefited both countries in pursuing their national interests. Such intent must be supported by the close cooperation and full commitment from both Washington and New Delhi Administration. In area of security, economy and technology, the US and India share intense interest and has since significantly contributed towards leapfrog increase in their gross domestic product. In term of balancing, the strategic partnership is playing a vital role which is to some extent putting pressure on China and compelling her to consistently revise her strategies. The Asian security landscape has changed tremendously following geopolitical realignments and the US strategic force deployments, which China's desperately attempting to stamp her prominence as well. This in turn has elevated the US-India strategic partnership that to some extent has witnessed the emergence of new player, India within the region.

In the battle against terrorism, the US sees India as an important collaborator when it began withdrawing its troops from Afghanistan. Although the assault onto Al-Qaeda in Afghanistan was initially supported by Pakistan, the US later found that it could not rely on Pakistan. More often than not, Al-Qaeda operatives are provided well-needed protection from several Pakistan clans. The allegation worsened after the Mumbai incident, where India is now facing similar terrorist group that has been on the US intelligence list.

When Obama took office, he introduced what is known as 'pivot to Asia', although fresh in name, it still had the same, similar objective, which is partly to balance the rise of China. Under the current administration, the pendulum in the US policy toward China has swung from attempting to cooperate with China on global problems to pushing back against Chinese assertiveness and challenges to international laws and norms. In both Northeast Asia and the South China Sea, the Obama Administration formally affirmed its neutrality in territorial disputes involving China but adopted substantive positions that predictably raised upheavals in Beijing.

Over the past decade, the US interests in Southeast Asia have deepened and broadened. Enhanced the US engagement with Southeast Asia will naturally involve greater attention to the ASEAN and other multilateral forums, but key of the US interests in the region will continue to be pursued through bilateral partnerships and via

multilateral forums. The influence and trade with the US outweigh that of China with the ten ASEAN countries and the US would like it to remain as it is, especially with the disputed claims of several islands in the SCS region between China and several ASEAN countries.

Closer US-India defence ties can play an important role in ensuring strategic stability whether along India's disputed northern borders or for operationalizing India's role as a net provider of regional security. There is an inescapable linkage between a robust US-India strategic partnership and China's periodic displays. A volatile external security environment requires India to enhance its defence capability. Stress from multiple commitments and budgetary difficulties are propelling the US to seek a defence partnership with India. Recognizing the inter-linkages between defence trade and technology collaboration, institutional arrangements among defence forces and security cooperation, it is time for the US and India to move towards full-spectrum defence ties. Targeting a comprehensive defence and security partnership to replace the existing framework is the way forward in the mutual interest of both countries. This is well in accordance with the Obama-Singh pledge to maintain the transformative nature of the US-India relations over the next decade.

In summation, the strategic partnership between the US and India in the post-Cold War has important implications for Asian security in the political, military, economic and regional dimensions, and it can be an important factor in stabilizing the Asian balance of power in the near future.

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PLANNING AN ARABIC LANGUAGE SYLLABUS FOR MILITARY RELIGIOUS CORPS (KAGAT) PERSONNEL DEPLOYED IN ARABIC SPEAKING COUNTRIES

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ABSTRACT

Using local languages while serving in peacekeeping missions is very important. Thus, the military must be prepped with language education prior to peacekeeping missions. Language needs analysis (LNA) is one of the selected procedures chosen by experts in designing and developing a language syllabus. Since the Malaysian Armed Forces (MAF) does not have a specific Arabic language syllabus or model for military deployments to Arabic speaking countries, this study first seeks to identify the military's perceptions (particularly KAGAT personnel) of the use of Arabic in conducting their tasks in the United Nations Interim Force in Lebanon (UNIFIL) mission. Second, this study specifies language needs by analysing the interactions that takes place, communicative events and instrumentality domains as a first step in designing an appropriate Arabic language syllabus. This case study employs interviews as the main method of collecting data as well as using triangulation in order to validate the results. The data was processed using the NVivo9 software and analysed thematically in addition to document analysis. This study found that the KAGAT personnel acknowledges the importance of Arabic while serving in the UNIFIL mission. This perception is described from the military task perspective, which is based on the use of Arabic language communication. This study shows that Arabic is not merely a communication medium. There are 20 interactions, 48 communicative events, as well as two frequently used instrumentality domains, comprising mainly of listening and speaking skills. This study highlights that the benefits of using Arabic language communication in peacekeeping mission can be viewed from the various dimensions, namely education, social, politic, religion and health. This study also has implications for developing language syllabus for specific purposes as well as military language education and training.

Keywords: Language needs analysis (LNA); peacekeeping missions; interactions, communicative events and instrumentality domains; Arabic language syllabus;

INTRODUCTION

The Malaysian Armed Forces (MAF) is as one of the military institutions participating in peacekeeping missions under the United Nations (UN) including the

United Nations Interim Force in Lebanon (UNIFIL) mission. The MAF's participation in UNIFIL involves interactions between the military and Arabs. Hence, language plays an important role in the deployment of the military [1], especially when serving as peacekeepers abroad [2]–[4]the customs, the culture and the taboos of the various communities. Your ability to converse in the local language will go a long way to promote confidence building measure. (Md Hashim 1996:32). In spite the importance of language for the purpose of peacekeeping missions, the MAF has no specific Arabic language syllabus for military deployment in Arabic speaking countries, particularly Lebanon. While there is an Arabic language slot provided prior to deployment, it is limited to a very brief exposure. The slot covers between one to two periods and takes approximately one hour for each slot [5]. Furthermore, the slot is part of an informal military training that is implemented without early and well-prepared planning in terms of the selection of language instructors, syllabus descriptions, system, model or the module itself [6].

Obviously, an educational language programme must be equipped with syllabus and curriculum content based on the objectives, language needs and interests of the students and the institution. Therefore, a study should be conducted to meet these needs, in accordance with the purposes and target groups. Hence, this paper aims to present the perception of the military, particularly KAGAT personnel on the use of the Arabic language in the UNIFIL mission and document their Arabic language needs. This study is a first step towards designing an appropriate Arabic language syllabus based on the needs of the KAGAT. The syllabus will focus on Arabic language training for Malaysian peacekeepers deployed in Arabic speaking countries, particularly in Lebanon. In this paper, we will use the terms military and peacekeeper interchangeably, with both referring to the same position.

PEACEKEEPING MISSIONS: DIVERSITY OF INTERACTIONS

In general, peacekeepers are involved in three operational contexts; operational activities, civil-military cooperation (CIMIC) and force protection [7]. There is a plethora of research related to peacekeeping deployments, focusing on the interaction between military and local communities. For example, Tomforde [8] highlighted the uniqueness of the cultural role in the context of military interaction with the local communities in peacekeeping deployments. He stressed that the lack of cultural knowledge can be aggravating and at the same time frustrating for the conducted mission. Although cultural understanding is not the only factor to the success of the mission, it affects the trend in peacekeeping missions. Hajjar [9] focused on cross-cultural competency in military operations, specifically in interactions, and highlighted the significant gap between the local communities and military. He recommended that military education programmes should be improved to enhance cross-cultural competency.

Rubinstein et al. [10] examined the cultural aspects in integrated missions, such as peacekeeping missions, focusing on the role of culture. They pointed out that in an integrated mission, soldiers from diverse backgrounds cooperate with familiar and

unfamiliar local residents. In both cases, cultural differences can present either challenges or opportunities. They perceived that culture affects the interoperability among the members of the mission, known as 'the ability to operate horizontally', and among the locals, known as 'the ability to operate vertically'. Respect and partnership are the main values in an operation, but the military generally fails to deliver these values in their actions even if they intend to do so.

Tomforde [8], Hajjar [9] and Rubinstein et al. [10] discussed on the relationship between militaries deployed in peacekeeping missions and the local communities without focusing on the countries of deployment. Andrea et al. [11] studied on cross-cultural relations between the Dutch military and Afghan translators in the International Security Assistance Force (ISAF) peacekeeping deployment, while Vuga [12] investigated cultural differences in the context of a multinational peacekeeping operation from the perspective of the Slovenian army. Haddad [13] analysed the intercultural competence of French soldiers with the Lebanese Army (LAF) in their daily lives during peacekeeping operations in Lebanon (UNIFIL). Haddad' s study showed that the French military relations with the LAF was complex, distant and vague, in addition to being very hierarchical, which caused the relations between the Lebanese and French to be difficult. However, the relationship between the French and LAF officers seemed more close in the cases where the LAF officers spoke French.

Bosman et al. [14] studied on the interactions between the military and Muslim local community. They analysed the experience of Dutch Muslim soldiers during the UNIFIL mission, specifically their interaction with the local population, mostly Muslims. The Muslim Dutch soldiers acknowledged their religious identity while conducting their tasks in peacekeeping missions, while remaining professional as Dutch troops when encountering crises. Although the military did not mention it directly, the Muslim Dutch soldiers' backgrounds in Islam helped the military to operate among the local Muslim community in an effective way. While Ruffa's study [14] also focused on the UNIFIL mission, he looked at it from the perspective of perceptions and behaviours of the militaries of France, Ghana, South Korea and Italy. The study showed that there are variations between the four forces in the context of performing their daily military activities. It confirmed the hypothesis that 'different operational environments cause different individual behaviours' by proving that the military's multi-perceptions are based on their different experiences'.

The aforementioned studies encompassed issues related to culture, interaction and perception of the implementation of the peacekeeping mission. However, the issue of language communication has not been thoroughly studied even though it is essential for ensuring the success of the mission undertaken. Peacekeepers encounter difficulties in interaction with either local communities or peacekeepers from other countries [10], [13] since the interaction involves many aspects, including culture and language.

Language must be emphasised particularly in building military leadership [15]. In fact, language has been viewed by the Slovenian military as important [12]. They learn

foreign languages, specifically the most prominently used during operations. Mohd Shahrom [3] stated that language has an essential role in peacekeeping operations. In addition, Md Hashim [2] stated that: "It would be to your advantage if you have equipped yourself sufficiently with the history, the customs, the culture and the taboos of the various communities. Your ability to converse in the local language will go a long way to promote confidence building measures".

In other words, the role of local languages for deployment purposes assists the military in carrying out the peacekeeping tasks that involve various interactions. The lack of language capabilities has led to unintended difficulties, particularly in the implementation of the operations and activities between local communities.

LANGUAGE NEEDS ANALYSIS (LNA): TOWARDS DESIGNING LANGUAGE SYLLABUS

Issues regarding language needs analysis (LNA) in designing language syllabuses have been much discussed by scholars. Evans and Maggie [16], Yalden [17], and Nation and Macalister [18] opined that LNA plays an important role in syllabus planning and curriculum development. Furthermore, Evans and Maggie [17] and Kharma [20] acknowledged that LNA is the first step to determine curriculums for target groups. However, Nation and Macalister [19] noted that the implementation of LNA prior to a language programme is impractical. Nevertheless, they still recognise the three stages for LNA; before, during and after a programme is implemented. On the other hand, Graves [19] stated that LNA is an imperfect process and disorganised because needs are determined not only based on students' and teachers' view, but also include parents, donors and education authorities. These parties can have different opinions, which may sometimes trigger conflict. These conflicts can actually be solved through the selection of individuals who are really able to contribute appropriate information. At the same time, each party has different expertise that can generate different but useful information for designing the curriculum content or language syllabus. For example, the study by Cowling [20] proves that the LNA procedure that involved various parties is very practical as students alone did not give clear information. At the same time, triangulation was used in this study to categorise unnecessary information as well as confirming the available data.

It is advisable to employ LNA in designing a new language for specific purposes (LSP) curriculum or syllabus as a first step. This procedure will help researchers and teachers as well as policy makers in determining the direction of language curriculum [21] Furthermore, the implementation of LNA may generate the target needs of the participants. The implementation of LNA must not stop at that level only. LNA is an ongoing language procedure for syllabus and curriculum development in addition to ensuring the effectiveness of the syllabus. Nation and Macalister [18] stressed on the importance of the ongoing process of LNA as needs are not always clear and might change. Thus, the LNA should be identified from a variety of perspectives and through

different periods of time.

The LNA model proposed by Munby [22], namely communication needs processor (CNP), is among the prominent LNA models. The CNP model is a sociolinguistic model for defining a language for specific programme [22]. It has been explained thoroughly by Munby in a book entitled Communicative Syllabus Design. The book is a major contribution to the field of needs analysis and has been acknowledged by scholars [23]–[25]. The researchers employed the CNP model because the provided guidelines were documented in accordance with the communicative syllabus. CNP is also suitable to determine the language syllabus content for specific purposes [24]. However, the model has been criticised; for example, Evans and Maggie [17], and Songhori [25] pointed out that it does not include domain preference and effective factors. Nonetheless, the model is useful in designing language curriculum content specifically for new curriculums, including language curriculum content for specific purposes. In other words, the CNP model is suitable and adequate in planning language syllabus. Furthermore the model can be used to validate the target situation [23]. In this study, the researchers employed the CNP model for LNA procedures. The domains integrated into CNP model comprise of:

1. Input from the LNA participants (demography)
2. Purposive domains (types of LSP; services/education)
3. Setting (place and time)
4. Interaction
5. Instrumentality (speaking, writing, etc.)
6. Dialect
7. Target level
8. Communicative event (attending Arabic ceremonies)
9. Communicative key (formal/informal)

This research identified all types of CNP domains. However, this paper reports only three aspects of the CNP domains, specifically interactions, communicative events and instrumentalities. The identification of these aspects may help researchers and curriculum planners to design the syllabus in line with the needs of the military, particularly in the context of peacekeeping missions in Arabic speaking countries such as Lebanon. In more detail, this study seeks to answer the following questions:

a) What is the KAGAT personnel's perceptions of the use of Arabic in conducting their tasks in UNIFIL missions?
b) What types of interactions occurred during military operations in the UNIFIL missions?
c) What communication events existed during military duties in the UNIFIL mission?
d) What are the instrumentality domains involved in military operations in the UNIFIL mission?

METHODOLOGY

This case study employed interviews as the data collection method [24], [25] focusing on the UNIFIL mission. Interviews were used as they can provide a high response rate [26]. A total 15 interviews were conducted; consisting of nine in-depth semi-structured interviews with MAF officers and six interviews with members of other ranks (lain-lain pangkat, LLP). All the respondents were members of the MAF Religious Corps (KAGAT). The researchers chose KAGAT personnel because they have Arabic language backgrounds and high potential to interact with the local community using Arabic language communication as compared to the non-KAGAT personnel. Thus, the experience gained by the KAGAT personnel in practising Arabic language during the peacekeeping mission could be useful for further improvement of Arabic among the military personnel. The research conducted was an exploratory in nature and can be further extended to encompass the needs of Arabic among the non-KAGAT personnel. This study also employed triangulation to validate the data [20], [27], [28], by using various data sources, including documents, memos, travel notes and photos.

FINDINGS

KAGAT Personnel's Perceptions on the Use of Arabic Language in UNIFIL Missions

This study indicated that the KAGAT personnel claimed that Arabic use is crucial in the UNIFIL mission as the KAGAT personnel has to deal with Arabic people. Participant 10 (P10) stated "*Very necessary because we are dealing with people in this area who speak Arabic.*"

Second, Arabic is needed to facilitate the communication situation. P15 stated "*When there is a communication (Arabic), then it'll be easier (using Arabic language).*"

Third, it is important to communicate with Arabs in Lebanon in Arabic. P11 explained this perception by saying "*For the Arabs, Arabic is their main medium of communication, and a peacekeeper must learn this language if he does not know it.*"

Fourth, Arabic is particularly important in the context of military operations. P5 said "*Arabic is very important if we're going to Arab countries; very important because it involves the implementation, our operational task on the ground, where we work.*"

The KAGAT personnel's perceptions on Arabic use also leads to the opportunity to doing wider tasks not limited to being religious advisers and conducting military operational activities, such as patrolling. In addition, KAGAT personnel who can communicate using Arabic have been appointed informally by commandants or other

MAF members as interpreters, negotiators, representatives and tour guides.

<u>Interpreter</u>
For example, P1 said: "*If the commandant cannot answer (when LAF officers explained in Arabic), I can answer it. If the commandant says, "Ustaz, answer", I answer. His interpreter (the local interpreter appointed by UN), is not military. He is a civilian, so he must first understand and then interpret. The interpreters just like a parrot; he transfers words.*"

<u>Negotiator</u>
P6 explained that "*I'm also involved with the arrangements (the negotiations), about 'korban', akikah, what is it, how to get a cow, goat and all about that. I had to deal with the local community by using Arabic as the villagers do not know English.*"

<u>Representative</u>
P14 said "*I served as a liaison with the civil society because not all of them are able to speak English. When we can communicate using Arabic, they really respect us because they consider. Malaysia as special because there is an officer who knows the Arabic language. Indeed, they do not know that this is just coincidence. They think oh, there is a military interpreter, but for me it's all just a coincidence.*"

Interactions, Communicative Events and Instrumentality Domains That Occurred During Military Operations in the UNIFIL Mission

This study categorised 20 interactions that existed between the KAGAT personnel with certain parties, for instance the Lebanese military, local communities, Arab leaders and certain agencies. The interactions involve specific communications consisting of 48 types of communicative events and two prominent instrumentality domains, as shown in Table 1-20.

Table 1: Interactions between the KAGAT personnel and religious speakers

Communicative event	Instrumentality
1. Communicate with religious speakers	Listening & Speaking
2. Listen to religious Arabic speeches	Listening
3. Interpret the religious Arabic speeches from Arabic to Malay	Listening & Speaking

Table 1 shows the interaction between the KAGAT personnel and religious speakers during the UNIFIL mission encompassing three types of communicative events; communicating with religious speakers, listening to religious speeches and interpreting religious Arabic speeches to Malay. The instrumentality domains for the first and third events are listening and speaking. On the other hand, the instrumentality domain for the second event is only listening.

Table 2: Interactions between the KAGAT personnel and officers who speak Arabic

Communicative event	Instrumentality
1. Exchange experience on deployment task one another	Listening & Speaking
2. Discuss on general knowledge	Listening & Speaking
3. Build general conversation	Listening & Speaking

As shown in Table 2, all the communicative events (exchange of experience on deployment tasks with one another, discussing on general knowledge and building general conversation) indicate that the suitable instrumentality domains are listening and speaking.

Table 3: Interactions between the KAGAT personnel and Lebanese Armed Forces (LAF)

Communicative event	Instrumentality
1. Interpret (Arabic -Malay-Arabic) MAF and LAF conversations in meetings and visits	Listening & Speaking
2. Converse in religious celebrations and functions	Listening & Speaking
3. Explain about Malaysia based on video shows	Speaking

Table 3 displays the interaction between the Malaysian Armed Forces (MAF) and Lebanese Armed Forces (LAF). The communicative events are: first, interpret MAF and LAF conversations in meetings and visits; second, converse in religious celebrations and functions; third, explain about Malaysia based on video shows. The instrumentality domains for the first and second events are listening and speaking, while for the third event, it is speaking.

Table 4: Interactions between the KAGAT personnel and local community

Communicative event	Instrumentality
1. Discuss about community affairs	Listening & Speaking
2. Converse with the local community in their functions	Listening & Speaking
3. Discuss with the local community in weekly and monthly meetings	Listening & Speaking
4. Discuss on security of the local community	Listening & Speaking

Table 4 shows the interactions between the KAGAT personnel and local community. The interactions comprise of four communicative events (discussing about community affairs, conversing with the local community in their functions, discussing with the local community in weekly and monthly meetings, and discussing on the security of the local community). All these events involve listening and speaking.

Table 5: Interactions between the KAGAT personnel and religious agencies staff (e.g., imams, muftis)

Communicative event	Instrumentality
1. Discuss on religious issues and charity	Listening & Speaking
2. Cooperate with religious agencies	Listening & Speaking

Table 5 displays the interactions between the KAGAT personnel and religious staff, which include two communicative events (discussing on religious issues and charity, and cooperating with religious agencies). The instrumentality domains for these two events are listening and speaking.

Table 6: Interactions between the KAGAT personnel and Lebanese military while working together

Communicative event	Instrumentality
1. Introduction oneself when working together with Lebanese military at posts outside camps and night patrols	Listening & Speaking
2. Share with Lebanese military on Malaysian history	Listening & Speaking
3. Talk about monitoring posts and locations' history	Listening & Speaking
4. Talk about directions and locations	Listening & Speaking
5. Talk about emergency situations	Listening & Speaking
6. Exchange information on general knowledge	Listening & Speaking

As shown in Table 6, the communicative events are introducing oneself when working together with the Lebanese military at posts outside camps and night patrols, sharing with the Lebanese military on Malaysian history, discussing on monitoring posts and locations' history, talking about directions and locations, discussing on emergency situations, and exchanging information on general knowledge. The instrumentality domains for these six events are listening and speaking.

Table 7: Interactions between the KAGAT personnel and local community (complainants/applicant).

Communicative event	Instrumentality
1. Translate written Arabic complaints/applications and explain them to the commander in meetings	Reading, Listening & Speaking
2. Explain orally to the local complainants/applicants the results or issues related to their needs	Listening & Speaking

Table 7 shows the interactions between the KAGAT personnel and local community (complainants/applicants), which comprise of two types of communicative events. The events are: first, translate written Arabic complaints/applications and explaining them to the commander in meetings; second, explaining orally to the local complainants/applicants on the results or issues related to their needs. The first event involves three

types of instrumentality domains namely, reading, listening and speaking; whereas the second event involves listening and speaking.

Table 8: Interactions between the KAGAT personnel and Lebanese military as well as local community

Communicative event	Instrumentality
1. Converse with one party or both parties while doing plumbing installation	Listening & Speaking
2. Converse while repairing equipment	Listening & Speaking
3. Converse on daily needs	Listening & Speaking
4. Other related needs	Listening & Speaking

Table 8 presents the interactions between the KAGAT personnel and Lebanese military as well as local community. The communicative events occurred in interactions (conversing with one party or both parties while doing plumbing installation, conversing while repairing equipment, and conversing on daily needs and other related needs) involving listening and speaking.

Table 9: Interactions between the KAGAT personnel and local patients

Communicative event	Instrumentality
1. Ask about disease	Listening & Speaking
2. Seek knowledge on medicine terms in Arabic	Listening, Speaking, Reading
3. Explain and prescribe medicine	Listening & Speaking

Table 9 shows the interactions between the KAGAT personnel and local patients. The communicative events are asking about diseases, seeking knowledge on medical terms in Arabic, and explaining and prescribing medicine. The first and third events involve listening and speaking, while the second one involves listening, speaking and reading.

Table 10: Interactions between the KAGAT personnel and local community leader

Communicative event	Instrumentality
1. Discuss on local community affairs	Listening & Speaking

Table 10 shows the interactions between the KAGAT personnel and local community leaders. The communicative event is discussing on local community affairs, with the instrumentality domains being listening and speaking.

Table 11: Interactions between the KAGAT personnel and local traders

Communicative event	Instrumentality
Talk about sales, goods, groceries	Listening & Speaking
Order foods (restaurants)	Listening & Speaking

Table 11 presents the interactions between the KAGAT personnel and local traders. The communicative events (talking about sales, goods and groceries, and ordering food) comprise of two instrumentality domains, namely listening and speaking.

Table 12: Interactions between the KAGAT personnel and ticket agency staff

Communicative event	Instrumentality
1. Discuss on umrah procedure	Listening & Speaking

As shown in Table 12, the interactions between the KAGAT personnel and ticket agency staff comprise of discussing on umrah procedure). The instrumentality domains are listening and speaking.

Table 13: Interactions between the KAGAT personnel and embassy staff

Communicative event	Instrumentality
1. Ask and get an explanation from the staff at the embassy of Saudi Arabia on visa application and related matters	Listening & Speaking

Table 13 shows the interactions between the KAGAT personnel and embassy staff. There is one communicative event, namely asking for an explanation from the staff at the embassy of Saudi Arabia on visa applications and related matters. The instrumentality domains related to this event are listening and speaking.

Table 14: Interactions between KAGAT personnel and hotel staff

Communicative event	Instrumentality
1. Book and manage umrah accommodation for MAF (Umrah/Makkah & Madinah)	Listening & Speaking
2. Book hotel for MAF officers visiting Lebanon	Listening & Speaking

Table 14 presents the interactions between the KAGAT personnel and hotel staff. The communicative events are booking and managing umrah accommodation for the MAF (Umrah/Makkah & Madinah) as well as booking hotel rooms for MAF officers visiting Lebanon. Both events comprise of two instrumentality domains, namely listening and speaking.

Table 15: Interaction between KAGAT personnel and airport staff

Communicative event	Instrumentality
1. Discuss with airport staff on facilities provided for MAF VVIPs	Listening & Speaking
2. Talk with airport staff while managing baggage in airport	Listening & Speaking
3. Talk with immigration staff	Listening & Speaking

As shown in Table 15, the interactions between the KAGAT personnel and airport staff comprise of three communicative events (discussing with airport staff on facilities provided for MAF VVIPs, talking with airport staff while managing baggage in the airport, and talking with immigration staff) and two instrumentality domains (listening and speaking).

Table 16: Interactions between the KAGAT personnel, and students and school staff

Communicative event	Instrumentality
1. Talk with students	Listening & Speaking
2. Share experience and distribute school supplies; books, shoes, visual aids and other necessities	Listening & Speaking

Table 16 presents the interactions between the KAGAT personnel, and students and school staff. The interactions comprise of two communicative events (talking with students and share experience, and distributing school supplies, books, shoes, visual aids and other necessities). The instrumentality domains for both events are listening and speaking.

Table 17: Interactions between the KAGAT personnel and local community while participating in sports and exercise activities together

Communicative event	Instrumentality
Talk with local community while participating in sports and exercise activities together	Listening & Speaking

Table 17 shows the interactions between the KAGAT personnel and local community while participating in sports and exercise activities together. The communicative event is talking with local community while participating in sports and exercise activities together. The instrumentality domains for this event are listening and speaking.

Table 18: Interactions between the KAGAT personnel and maintenance staff

Communicative event	Instrumentality
Converse with maintenance staff on machine and equipment maintenance	Listening & Speaking

Table 18 displays the interactions between the KAGAT personnel and maintenance staff, comprising of one communicative event (conversing with maintenance staff on machine and equipment maintenance) and two instrumentality domains (listening and speaking).

Table 19: Interactions between the KAGAT personnel and local community in military functions and celebrations

Communicative event	Instrumentality
1. Communicate while celebrating eidulfitri	Listening & Speaking
2. Communicate while celebrating eiduladha	Listening & Speaking
3. Communicate while celebrating wedding occasions	Listening & Speaking

Table 19 illustrates the interactions between the KAGAT personnel and local

community in military functions and celebrations. The interactions comprise of three communicative events (communicating while celebrating eidulfitri, communicating while celebrating eiduladha and communicating while celebrating wedding occasions). The instrumentality domains for this event are listening and speaking.

Table 20: Interactions between the KAGAT personnel and local military and community in cultural occasions.

Communicative event	Instrumentality
Promote Malaysia to Lebanese military and local community in cultural occasions	Listening & Speaking

Table 20 shows the interactions between KAGAT personnel, and local military and community in cultural occasions. The communicative event (promoting Malaysia to the Lebanese military and local community in cultural occasions) involves two instrumentality domains namely listening and speaking.

DISCUSSION

This study shows that the KAGAT personnel has a good perception of the Arabic language, particularly in the context of the use of Arabic in the UNIFIL mission. The perception is based on their awareness and previous experience that requires them to communicate in Arabic. Thus, the use of Arabic cannot be underestimated because Arabic is the local language in Lebanon, in particular local dialects. In addition, the Muslim background of every participant in this study is likely to affect their perception on the importance of Arabic, especially in peacekeeping operations. Interestingly, the KAGAT personnel officials in this study who can speak Arabic very well while in the UNIFIL mission were also unofficially appointed as interpreters, negotiators and representatives among the MAF. Even though these roles are not considered as formal role, it is a good opportunity for the KAGAT personnel to do multitask, which enhances the potential of the KAGAT personnel's ability in Arabic language communication as well as being productive in their operations.

The study also found that the interaction with the local community existed in the peacekeeping operation. While this study confirms previous findings in terms of interactions with local communities [11]–[13], [29], interestingly, this study also reveals the type of interactions in depth and detail. The interactions can be seen in the context of social, politics, religion and health, as portrayed by the various types of interactions experienced by the KAGAT personnel while serving in the missions. Thus, the KAGAT personnel has a chance to contribute their excellent service, especially when they are able to communicate using the target language. At the same time, this study supports Bosman's [29] view that the success of the interactions between the peacekeepers and local population is due to having the same religion.

In this study, the communication events that occurred were based on the activities carried out by military in the context of the peacekeeping mission; comprising operational activities, CIMIC and force protection. However, the CIMIC activities vary from one country to another, depending on the military's efforts, existing facilities or expertise. For instance, the Korean military offers taught taekwondo, while the Ghanaian military provided dental care and veterinary service units [14]. The MAF focused on the maintenance and medical aid, and educational facilities.

This research showed that the interactions that occurred in the UNIFIL mission were very much related to military tasks and commitments. Therefore, the peacekeepers, either from KAGAT or other MAF corps must be prepped with language communication use as needed. The researchers also recognise that there is no big gap between KAGAT personnel officers and other ranks who participated in this study, in terms of their perceptions and use of the Arabic language. Instead, the KAGAT personnel's confidence and efforts to move forward and the advantage of communication skills in Arabic gave them the opportunity to interact in a variety of conditions. These criteria resulted in the scope of their work being dynamic, growing and easy to handle, in addition to encourage the military to approach the local community and vice versa.

This study indicated that the instrumentality domain mostly focused on listening and speaking skills as compared to reading skills. Despite that, the reading skill is one of the target skills, but in a limited scope, associated with the type of implementation for each required task. The KAGAT personnel acknowledged that each staff interacts with different frequencies, depending on the extent of their competence in Arabic.

This study also portrayed the importance of Arabic language education for military purposes since Arabic language is required in many situations. This study can be viewed from the aspect of building military awareness towards effectively serving in peacekeeping mission.

This study has implications for language syllabus and curriculum content development based on the needs of military services, as well as the field of Arabic language for specific purposes.

CONCLUSION

The present study underlines the relevance of Arabic language use in the UNIFIL mission based on the KAGAT personnel's perception and their experience on the interactions that occurred. The LNA is part of the curriculum planning and in particular, is very useful in planning and developing language syllabus. In other words, a language syllabus which is based on the language needs is important to create a good impact on the direction of language education. The results from this study can facilitate the MAF towards developing a language syllabus, specifically Arabic language, for the military

deployed in Arabic speaking countries, such as Lebanon. However, other aspects related to this matter must be taken under consideration, such as the institution's constraints and available resources. Further research regarding military deployments abroad should be increased, particularly from the perspective of MAF, because MAF provides significant contributions towards national security, as well as international security.

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KNOWLEDGE MANAGEMENT STRATEGY IN THE MALAYSIAN ARMED FORCES: TOWARDS NEXT-GENERATION KNOWLEDGE-CENTRIC ORGANIZATION

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ABSTRACT

A study on military officers of the Malaysian Armed Forces (MAF) attitudes toward Knowledge Management (KM) applications in the MAF organization was conducted to show the importance of KM strategy in military context. The focus of the study is to examine the attitudes of MAF personnel toward the KM key drivers, which include the knowledge creation, processes, applications, and technology. The findings of the study could be considered as the platform to develop a KM strategy implementation in the MAF. The results of the study indicated that the organizational factor focusses on people have great influenced over the creation of knowledge in organization. While, the applications of KM were highy influenced by the KM processes and technology infrastructural in the MAF. Technology was identified as an important factor that drive the KM implementation. The MAF is to emphasis on the frameworks that include infostructure, intellectual capital, and change catalysts in developing a successful strategy of KM implementation.

***Keywords**: Military; Knowledge Management; Knowledge; Technology; Information.*

INTRODUCTION

Today's soldiers need the ability to rapidly respond in an environment of growing complexity and uncertainty through accessing information, transfer knowledge and win over the 21st century adversaries. As a result, the Malaysian Armed Forces (MAF) now needs thinking soldiers, who are innovative and creative to fight digital warfare, which present and future wars will be. A balanced and credible force guided by sound operational strategies and concepts, equipped with high-tech weapons and manned by competent professionals will be the way forward of the MAF in developing its next-generation forces.

The MAF is envisaged to move from threat-based strategy to capability-based approach as stipulated in the Fourth Dimension MAF (4DMAF). This approach is to develop core capabilities in order to meet multi-spectral challenges on several critical goals to focus efforts on protecting critical bases of operations, assuring and conducting effective information operations, providing persistent surveillance, and leveraging ICT. In anticipating imminent warfare, the MAF current and future development is projected toward 4DMAF, which focuses on three landscapes of Joint Force,

Information Superiority, and Multi-Dimensional operational capabilities. With regard to this development, the MAF readiness strategic plan is to consider the importance of Knowledge Management (KM) system as one of its strategic objective in order to manage next-generationwarfare.

Accordingly, KM supports the creation, organization, application and transfer of knowledge to assist situational understanding and decision making. It is a structured approach to transfer soldier experiential knowledge in order to provide commanders and soldiers a major tactical advantage on the battlefield. The modern warfare relies heavily on information from many sources that must be assessed and compiled for immediate use. The "information superiority"[1] [1] becomes the determinant of the future war management and requires strategic planning in KM, assurance, exchanging and sharing of superior knowledge [2]. In order to achieve information superiority, knowledge is seen to be the most important strategic resource for capitalizing the conduct of battle space management. The awareness of managing knowledge effectively could be achieved through the application of KM. For most organizations without exception to the military like the MAF, the application of KM is regarded as inevitable [3].

NEED FOR THIS STUDY

KM strategy is the centre of the military's information revolution, which becomes the enabler for mission operations, knowledge generation, information delivery and technology innovation [4]. The applications of KM strategy in military context is seen extensively applied in the military of major countries, like the United States, Britain, Canada, Australia and several countries within this region like Japan, Korea, and Singapore. KM was regarded as a strategic approach to achieve defence objectives. Military KM will play a valuable role in leveraging existing knowledge and converting new knowledge into action through the KM cycle [5]. Based on those developments, it is inevitably for the MAF to embark on knowledge-centric organization through KM strategy.

Based on the author's observation, the MAF is still lacking in KM practices and applications. However, it was found that the existence of knowledge in the MAF is available and was embedded in the form of doctrines, policies, procedures, operations and training manuals, information systems, work flow and databases. Unfortunately, those elements of KM were presence in silos and not manage systematically. The lack of KM practices and applications in the MAF was perceived as lack of awareness, understanding and exposure about KM among the MAF personnel. The KM practices could only be implemented in line with KM principles by identifying the core processes of the KM, which has not been fully exposed in the organization. This study is attempted

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[1] That degree of dominance in the information domain that permits the conduct of operations without effective opposition. The capability to collect, process, and disseminate and uninterrupted flow of information while exploiting or denying an adversary's ability to do the same.

to explore the relationships and influences between organizational elements and several KM variables which considered important for the innovation and implementation of KM practices in the MAF.

STUDY OBJECTIVES

The objectives of this study are as follows:

- To examine the perceptions of MAF personnel towards knowledge creation, KM processes, technology, and KM applications based on the organizational elements.
- To examine the relationship between technology and knowledge creation, and KM processes.
- To propose a strategy for implementing KM practices and approaches in the MAF organization.

HYPOTHESES

Hypothesis 1: There is no significant statistical difference in attitude towards knowledge creation, KM processes, technology, and KM applications by the MAF officers based on the organizational elements (type of service, rank structure, academic background, and working experience).

Hypothesis 2: There is no significant statistical relationship between technology and knowledge creation, and KM processes.

LITERATURE REVIEW

Knowledge assets within an organization is the capitalization of the members of the organization, collaborative work in terms of sharing and using information which marks the effective use and promotion of knowledge [6]. In relations to managing knowledge within organization, Raja Abdullah [7] cited that KM deals with both tacit and explicit knowledge in an organization, with regards to knowledge creation, sharing, and how these activities promote learning and innovation. The true process of creating new knowledge, takes place subsequently when the different pieces of knowledge are set in context, organized, linked to one another and compared to the individuals' previous experiences [8].

Bartczak [9] identifies the crucial elements that act as barriers to the KM innovation such as the elements of managerial, resources, and environmental influences in the military. It was also suggested that, to implement KM there must be a continuous

leadership guidance, support, reinforcement of KM systems, and technology support [10]. Thus, the study suggested that, the first step to the innovation of KM within military environment was the evaluation of personnel attitudes toward KM, identification of barriers to the implementation of KM strategy, and the education and exposure on KM practices in the organization [11].

As the transition continues, the evolution of KM has become the current organizational learning theme [12], to which the knowing organization is prepared to sustain growth and development in a dynamic environment [13]. By identifying salient alternatives, Wiig [14] suggested methods for dealing with them and conducting activities to achieve the desired results. The KM is then viewed as an increasingly important discipline that promotes the creation, sharing, and leveraging of the organizational knowledge [15]. KM facilitates the creation and use of knowledge for increased innovation and value, could have a profound influence on the organizational excellence. Therefore, knowledge has become the key resource, for a nation's military strength as well as for its economic strength of any organization in the knowledge society [16].

Definition of Knowledge

Knowledge is regarded as the processed or repackaged information. The terms data, information, and knowledge may be used synonymously. Data is a set of discrete, objective facts about events. In an organizational context, data is most usefully described as structured records of transactions. Structured data include distinct numbers, places, and costs displayed in databases. Without knowledge, an organization could not organize itself; it would be unable to maintain itself as a functioning enterprise [17].

Tiwana [18], defines knowledge as an actionable information in term of its relevance and available in the right place at the right time, in the right context, and in the right way so it becomes the key resource in intelligent decision making, forecasting, design, planning, diagnosis, analysis, evaluation, and intuitive judgment which, was formed in and shared between individual and collective minds. However, Fernandez et al., [15] distinguished knowledge from data and information in two different ways, which comprises facts, observation, or perceptions which represents raw numbers or assertions, and may therefore be devoid of context, meaning, or intent, and information is just a subset of data that typically involves the manipulation of raw data to obtain a more meaningful indication of trends or patterns in the data. Knowledge is also regarded as at the highest level in a hierarchy with information at the middle level, and data to be at the lowest level. Knowledge could be stored in a manual or computer-based information system, which receives data as input and produces information as output. **Figure 1**, depicts how knowledge, data, and information relate to information systems, decisions, and events. It also shows how knowledge helps to convert data into information [15].
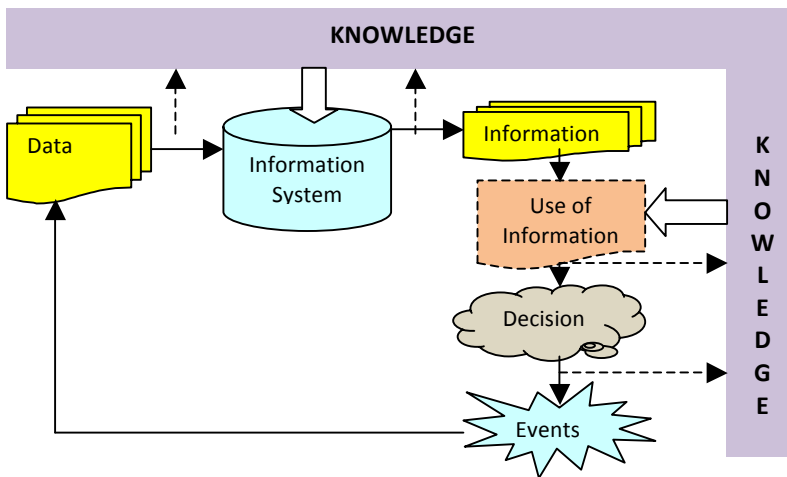
**Figure 1: Relation of Data, Information, and Knowledge to Events
Source: Fernandez, Gonzalez, and Sabherwal (2004)**

Based on those elaborations about knowledge, knowledge can be categorized into tacit and explicit.

Tacit knowledge is personal, context-specific knowledge that is difficult to formalize, record, or articulate and is stored in the head of people. It consists of various components, such as intuition, experience, ground truth, judgment, values, assumptions, beliefs, and intelligence [15]. Tacit knowledge is knowledge that people carry in their minds and is difficult to access and not easily shared. People are often not aware of this knowledge they possess and how valuable it can be to others. It is considered more valuable because it provides context for people, places, ideas, and experiences [19].

Explicit knowledge is that component of knowledge that can be codified and transmitted in a systematic and formal language, documents, databases, webs, e-mails, charts, etc [15]. Explicit knowledge also is regarded as the knowledge that has been or can be articulated, codified, and stored in certain media. It can be readily transmitted to others. The most common forms of explicit knowledge are manuals, and documents, or other digital media [19].

KM Definitions

In a practical sense, Wiig [20] elaborated KM as a set of distinct and well defined approaches and processes to find and manage positive and negative critical knowledge functions in different kinds of operations, identify new products or strategies, augment human resource management, and other highly targeted objectives. While Young [21] defined KM as the discipline of enabling individuals, teams and entire organizations to collectively and systematically capture, store, create, share and apply knowledge, to better achieve their objectives. However, Kidwell, Vander, and Johnson [22] holding a different view state that KM is to make the right knowledge available to the right people at the

right time. In simple perception, Barth [23] perceived KM as the combination of cultural and technological processes of an organisation.

KM in Military

KM combines analysis and evaluation to create knowledge. Since a broad range of knowledge potentially affects operations, the commander's information requirements may extend beyond purely military matters. KM application within military environment requires knowledge processes that are robust and reliable within operational contexts and the knowledge creation and conversion processes must match the pace of the military operations. In the context of today's military modernization and organizational change efforts, the present is set off from the past by the current heavy reliance on knowledge resources and organizational learning [24]. Elder [25], stated that KM is about the processes and techniques used to rapidly transfer experience and provide a common understanding from an experienced soldier to an inexperienced soldier. Done properly, KM can support and improve organizational learning and foster an innovative environment, resulting in an increase in performance.

McIntyre et. al.,[5] defined military KM as "a strategic approach to achieving defense objectives by leveraging the value of collective knowledge through the processes of creating, gathering, organizing, sharing and transferring knowledge into action". However, the Army of U.S. military defined KM as a discipline that promotes an integrated approach to identifying, retrieving, evaluating, and sharing an enterprise's tacit and explicit knowledge assets to meet mission objectives. The development of KM in military has been accepted and used extensively for thousands of years, the military have been leaders in adopting and advancing KM practices as applied in the military "intelligence"[2] [1]. KM, intelligence applications, and decision-making skills have been at the forefront of military doctrine over the past decades [26].

In today's modern military management, for example, the Army of U.S. military has launched their Army Knowledge Online, which enables the Army personnel to gain quick online access to important Army information, news, education and training opportunities, as well as knowledge centres and e-mail. Integral to Army transformation, AKO crosses the warfighting, business, and intelligence mission areas to support the current and future force [27]. For an effective KM implementation, the Army had produced the Army Knowledge Management (AKM) as the strategy to transform itself into a network centric, knowledge-based force with KM methods and successfully applied them in its workplace [28].

While the Navy Knowledge Online of the U.S Navy, gives sailors instant access to all training and educational information related to their chosen occupational fields. KM portal assists in identifying career paths, milestones, and educational tools and

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[2] The product resulting from the collection, processing, integration, analysis, evaluation, and interpretation of available information. Information and knowledge about as adversary obtained through observation, investigation, analysis, or understanding.

opportunities, which provides greater operational efficiency and eliminates organizational redundancies [29].

Accordingly, the U.S. Air Force has developed the Air Force Knowledge Now with features include of customizable discussion forums for fostering worldwide communication among staff members, alert notifications to receive e-mail, notification regarding additions and changes to specific documents, forums and calendars, and links administration for providing access to relevant resources and items of interest[3]. AFKN is a virtual workspace that connects people through knowledge sharing. AFKN provides an environment to identify, capture, and transfer knowledge inside of virtual communities.

With regard to the MAF, the web portal which delivers the same functions as projected by the AKO, AFKN, and NKO was developed in order to support the needs of present and future information sharing. The following are examples of MAF and the three services web portal that can be accessed by the MAF personnel as well as the public.

Military KM Principles as Strategy

Conceptually, the KM in military is about connecting those who know with those who need to know, and leveraging that knowledge across the military organization and to contractors, non-governmental organizations, the other military services and coalition partners. KM goals are to support the shares of intellectual capital with no structural or technical barriers, which values good ideas regardless of their source and collaborates and values collaboration as a means to mission success.

The objective of the principles is to connect those who know with those who need to know (know-why, know-what, know-who, and know-how) by leveraging knowledge transfers from one-to-many across the Global Army Enterprise [19]. The principles are organized around the main tenets of KM: people/culture, process, and technology working together to facilitate knowledge sharing as shown in **Figure 2**.
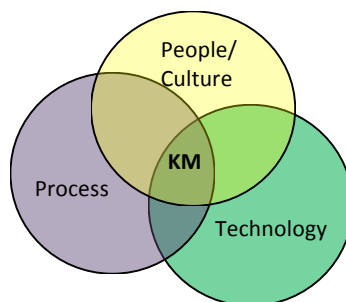
Figure 2: Main tenets of Knowledge Management
Source: Army Knowledge Management Principles, 2008

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[3] http://www.afmc.wpafb.af.mil/HQ-AFMC/PA/index.htm

The AKM Principles could be applied to any military organization that will help to preserve tacit and explicit knowledge and accelerate learning as units and personnel rotated in and out of organizations. The principles provide authoritative guidance to military Commands in developing or engaging in knowledge management efforts. By adhering to and applying the following principles, the military, as an enterprise, will accelerate individual, team, and organization learning to meet mission objectives [19]. The three main tenets of AKM principle dimensions are explained as follows:

People/Culture

- Train and educate KM leaders, managers, and champions.
- Reward knowledge sharing and make KM career rewarding.
- Establish a doctrine of collaboration.
- Use every interaction whether face-to-face or virtual as an opportunity to acquire and share knowledge.
- Prevent knowledge loss.

Process

- Protect and secure information and knowledge assets.
- Embed knowledge assets (links, podcasts, videos, documents, etc) in standard business processes and provide access to those who need to know.
- Use standard business rules and processes across the organization.

Technology

- Use standardized collaborative tools sets.
- Use Open Architectures to permit access and searching across boundaries.
- Use a robust search capability to access contextual knowledge and store content for discovery.

With regard to the MAF, it needs to reaffirm that KM as the means to support its MAF's strategies for the 21st Century of transforming itself into a network-centric knowledge-based force. The best way to do this is for the MAF to develop the MAF KM strategy that lays out a vision to shape the entire MAF into a knowledge-based force for the next twenty or thirty years. With a common KM strategy, the MAF would direct its vision to be a credible force in line with 4DMAF capability development. The MAF is to consider in developing a plan to change the current cultural mindset of personnel to meet its strategic goals. The MAF would uphold these newly developed KM processes through daily use, training and exercises. The strategy should be in tandem with ICT strategy, would tailor the IT resources appropriately to support the KM strategy.

METHODOLOGY

In gathering the information, this study has selected 368 military officers of the MAF based on 95% confidence level and 5% confidence interval. Total samples were derived from the sample size table developed by Krejcie and Morgan [30] and Cohen [31]. The sample size was then confirmed by using sample size calculator[4] to determine sample size. The population divided according to the three services of the Army, Navy, and the Air Force based on stratified random sampling. The respondents involved in this study were the military officers with equivalent rank of Lieutenant to Colonel. The study was conducted based on the conceptual framework as depicted in **Figure 3**.
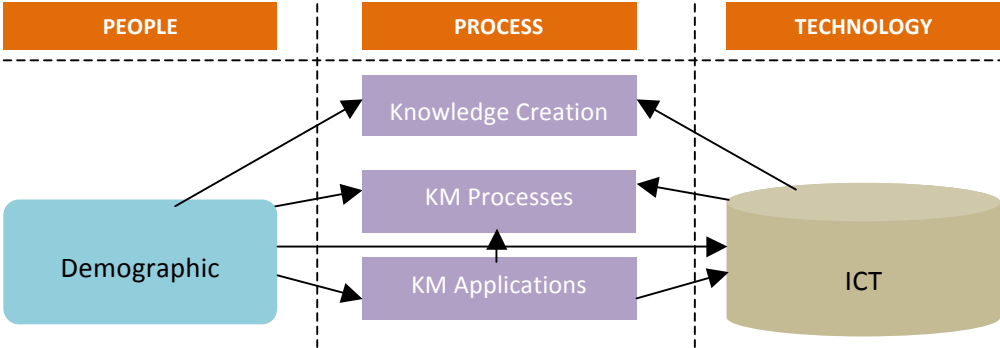
Figure 3: Conceptual framework

The questionnaire was designed in order to assess and investigate the attitude of MAF officers about KM in ICT environment. The questionnaire consists of fifty-two (52) items which is divided into Five Parts with five items Likert scale, 1: strongly disagree, 2: disagree, 3: uncertain, 4: agree, and 5: strongly agree. Descriptive statistics are used to describe the results.

FINDINGS AND DISCUSSIONS

Demographic Characteristics

The variables selected to describe the respondent's background were the type of service (Army, Navy, and Air Force), rank (Lieutenant to Colonel equivalent), academic qualification (graduate: Diploma to PhD, and Others: represent highest secondary school achievement), and level of working experience (between <10 years, 10 to 19 years, and >20 years). The results are shown in **Table 1, 2, 3** and **4**.

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[4] Sample size calculator available at : http://www.surveysystem.com/sscalc.htm

Table 1: Frequency of Respondents by Type of Service

Type of Service	Frequency	Percent	Cumulative Percent
Army	218	60.1	60.1
Navy	67	18.5	78.5
Air Force	78	21.5	100.0
Total	**363**	**100.0**	

Table 2: Frequency of Respondents by Rank

Rank	Frequency	Percent	Cumulative Percent
Lieutenant	63	17.3	17.3
Captain	144	39.7	57.0
Major	130	35.8	92.8
Lt Colonel	22	6.1	98.9
Colonel	4	1.1	100.0
Total	363	100.0	

Table 3: Frequency of Respondents by Academic Qualification

Qualification	Frequency	Percent	Cumulative Percent
PhD	1	.3	.3
Masters	33	9.1	9.4
Degree	86	23.7	33.1
Diploma	106	29.2	62.3
Others	137	37.7	100.0
Total	363	100.0	

Table 4: Frequency of Respondents by Level of Working Experience

Length of Service (years)	Frequency	Percent	Cumulative Percent
<10	116	32.0	32.0
10 to 19	163	44.9	76.9
>20	84	23.1	100.0
Total	363	100.0	

Hypotheses Testing Results

In order to derive the results, the hypothesis 1 was developed into four sub hypotheses. The summary of the hypotheses test results are presented in **Table 5**.

Table 5: Summary of Hypotheses Testing Results

Hypothesis 1		ANOVA	
		F	**P**
A: Type of Service	H_{A1}	1.167	.312
	H_{A2}	.559	.572
	H_{A3}	.004	.996
	H_{A4}	.400	.671
B:Rank Structure	H_{B1}	4.425	.002*
	H_{B2}	.621	.648
	H_{B3}	1.772	.134
	H_{B4}	.849	.495
C:Academic Background	H_{C1}	5.171	.006*
	H_{C2}	.505	.604
	H_{C3}	5.555	.004*
	H_{C4}	.866	.422
D:Working Experience	H_{D1}	11.669	.000*
	H_{D2}	.813	.444
	H_{D3}	.855	.426
	H_{D4}	.404	.668

Hypothesis 1

Hypothesis 1 focuses on the associations of people variable as a key driver of KM with the variables of process and technology for KM. As can be observed in **Table 5**, the MAF officer's attitudes toward the four variables (knowledge creation, KM processes, technology, and KM applications) are not significantly determined by the type of services. The results of ANOVA tests indicated that the attitude of officers from the three services on knowledge creation are the alike. However, based on further examination, the results demonstrate that, there were significant differences in officer's attitudes toward knowledge creation which are based on individual rank (H_{B1}), academic background (H_{C1}), and working experience (H_{D1}). Thus, respondent's backgrounds implicate significant influence on the creation of knowledge in the organisation.

Other variable that showed differences in officer's attitudes is the technology. The perceptions toward technology are different among the officers based on their academic background (H_{C3}). The results indicated that officers who have higher academic qualification demonstrated better perceptions as compared to officers with lower academic qualifications. As shown in **Table 5**, the results also indicated that the generalisability of officer's perception toward KM processes, technology, and KM applications did not differ except to knowledge creation.

Hypothesis 2

Hypothesis 2 focuses on the associations between technology driver and the process drivers for KM. The data presented in **Table 6**, which are the results of correlation test between technology and the three variables of KM, indicates a positive relationship with the knowledge creation ($H2_A$) and KM processes ($H2_B$) at p <.05. The results of this study showed that technology is an important driver that enables the KM processes and the creation of knowledge.

Table 6: Summary of Hypotheses Testing Results (Technology)

Hypothesis		Correlations		Regression		Variables
		r	p	R^2	p	
Technology	$H2_A$	.380(**)	.000	.295	.000	Knowledge Creation
	$H2_B$	.487(**)	.000		.000	KM Process
	$H2_C$	.294(**)	.000		.001	KM Applications

Findings

Finding 1: The type of services (Army, Navy, and Air Force) has no influence towards knowledge creation, KM processes, KM applications and technology in the MAF. It was also deduced that the attitudes of officers from the three services do not vary significantly.

Finding 2: The rank structure has no influence towards KM processes, KM applications and technology in the MAF. It was also deduced that the attitudes of officers with different level of rank does not vary towards the three variables.

Finding 3: There is no significant statistical difference in attitudes toward KM processes and KM applications by the officers with different academic background.

Finding 4: The level of working experience has no influence on the attitudes of KM processes, KM applications and technology.

Finding 5: There is a positive relationship between technology and the knowledge creation and KM processes.

RECOMMENDATIONS

For the purpose of strategizing KM initiatives in the MAF, it is highly recommended that the MAF should address the requirements based on a framework as follows:

- **Infostructure:** The ICT (computers, software, architecture, security, communications, programs, and facilities) that required supporting the net-centric MAF.
- **Intellectual capital:** The individual, team, and enterprise knowledge, systems, services, and strategies that is necessary to improve operations and decision-making.
- **Change catalysts**: The policies, resources, management, culture, processes, and education that are required to optimize an adaptive organization and an enterprise net-centric environment.

MAF KM Implementation

The MAF should look into several factors that could encourage the successful implementation of the KM strategies in the MAF [18], as follows:

- The infrastructure must accommodate faster processing capabilities and dissemination of KM requirements;
- Enterprise-wide systems must be easily accessible with net-centric processes and services available through a single portal;
- The information that leads to knowledge must be well organized and structured through content management, metadata, and data hierarchies;
- The ability to generate knowledge requires the transfer and sharing of knowledge across the enterprise using such techniques as collaborative processes, virtual teams, and communities of practice; and
- Recruitment, training, and retaining is emphasized to achieve an interdisciplinary workforce (soldiers and civilians) empowered to share knowledge.

CONCLUSION

This study sought to examine the current situation of the KM activities in the MAF through the study of officer's attitudes toward knowledge creation, KM processes, KM applications, and technology variables. The results obtained through the statistical analysis could contribute to the feasibility of KM implementation in the MAF organization. The overall respondents' attitude towards KM activities and its principles were examined. One of the greatest benefits of this study is that, it identified the attitudes

of the people (MAF officers) towards KM innovation for future strategic solutions in order to be at competitive edge in line with the modernization of the next-generation MAF. KM was identified as a new area of management which is incorporated with ICT in managing new knowledge for a superior decision making and problem solving in fields of military operations, tactical needs, and development in the military core competence. Finally, a general conclusion based on the findings obtained indicated that the level of KM availability in the MAF needs greater attention and awareness by the leaderships as well as all level of personnel in order to implement the KM strategy successfully.

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Journals /Serials
Henderson, D.A., The looming threat of bioterrorism, *Sci.,***283** : 1279-1283, 1999.

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