Contracted Logistics Support and Technology During Information Age Transformation – The Solution! or the National Strategic Trap?

Track

Information Age Transformation

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Abstract

One of the many solutions available for transformation and reducing the cost of operations and ownership, has been the movement to contracted logistics support (CLS). In several ways this supports and is supported by Joint Vision (JV) 2010, JV 2020, and the 2001 Quadrennial Defense Review (QDR). While offering assistance, CLS also has some included risks which may have been weighed at some levels of decision making, and still possibly not fully addressed through discourse with and by those that are represented by the decision makers – the public. The events of September 11th, 2001 highlight and emphasize several of these. Additionally, during the international war on terrorism there is the realization that all institution entities (government and non-government) become targets of an opposition group.

Questions addressed in this paper that might need resolution are: Does long term world demographics pose a problem with current International Law interpretations regarding conflict and war? Does the use of public key infrastructure, public key encryption (PKI/PKE) potentially cause a shift in protected status of units and facilities with respect to standing in International Law? Does the shift to contracted support for military logistics functions place individuals and organizations in positions of additional unacceptable risk with respect to conflict and war? Does the implementation of new information technology ideas necessarily augur improved solution? – Will there be 'unintended consequences' that result from the new applications of technology?

The attacks against the World Trade Center and Pentagon of September 11th point out the need for a short stroll along this path for reflection and discussion of some consequences of these points – both unintended and intended.

This paper attempts to start that discourse (or continue it, depending on your reference position) through discussion of concerns in these areas: and notes some opportunities for mitigation of those concerns.

Introduction

Many transformation, innovation, Logistics Reform efforts are underway toward delivering new capabilities, producing 'cost savings', privatization dividends, and reduced Total Ownership Costs (TOC) through innovative ideas and approaches. All are factors supporting and supported by the JV 2010 Focused Logistics implementation plan, JV 2020, and the QDR.

One item (among several) is contractor logistics support (CLS) in several forms, e.g., for logistics and training, maintenance, or security. Even the piloting of unmanned aerial vehicles (UAVs) by civilians has been discussed lately. (Butler, 'DOD Considers Using Civilians To Pilot UAVs In Military Operations,' 2002.; and, Butler, 'Air Force Vice Chief Says Service

'Nervous' About Civilian UAV Pilots,' 2002.) While reducing some aspects of government costs, CLS may have significant unintended consequences. Questions arising in the author's mind are: Will changing population demographics shift the majorities that determine the International Law of War through a shift in majority standards and morals? Will CLS put more of the population at risk for targeting? Realizing that, will the public opinion cause national governments' to approach international conflict in different manners? Have the current world opinion makers made sufficient preparation for a shift of this nature? The author thinks not! Some of the transformation and Logistics Reform risks may be too high in terms of lives, compared to short term reductions in TOC in resource dollars.

Technological Transformation may not be the complete solution either for delivery of innovations and improved or new capabilities. It might be perceived as an 'Archilles' heel' as well as a benefactor. (Witness the PBS Frontline broadcast of 24 April 2003 on cyber security.)

These questions and the author's noted concern, provide a framework to develop some conclusions regarding the questions. That framework will: introduce the trends in population demographics and resources; discuss the general character of international law and possible implications; and, through several examples project possible impacts and consequences on those standards due to the demographics and legal trends.

To state this introduction differently, transformation and Logistics Reform efforts have to be considered in its relation to the larger issue of the Revolution in Business Affairs, globalization, and shifting views of international interactions. Additional areas are the often mentioned and continuing discussions of the Revolution in Military Affairs, the transformation efforts of the QDR, combined with short AND long-term impacts. Currently Logistics Reform is part of the tenets of JV 2010, JV 2020, and the QDR, to support the achievement of 'Joint Battlespace Dominance' through Focused Logistics (and other initiatives), along with foreclosure of some response options. Yet the oft noted 'for every action there is an equal and opposite reaction' could have a more current interpretation. One which says, 'consider the desired outcomes and implications, then look at the choices of actions and choose the action according to the long term consequences which help the most individuals'.

Hopefully, the intended consequences are achieved; minimizing unintended consequences; and, even cultivating for synergistic constructive consequences.

Demographics – Trends and General Implications

The attacks of 9/11 (against the World Trade Center towers, the Pentagon, and the crash of United Airlines Flight 93 in a Pennsylvania field) bring to the fore the points which Samuel Huntington and authors of several National Geographic articles highlight regarding global trends of resources consumption and distribution, population growth rates and well being, and the struggle to balance those pressures with national and ethnic desires and objectives.

Huntington calls our attention to the population growth and degree of amicable and non-amicable interactions between various ethnic / religious groups of the world. Relations and tensions which are in some ways good, and in some ways down right hostile as evidenced by the

attacks of 9/11.

Webster's dictionary offers that demographics is 'the statistical characteristics of human populations (as age and income) used esp. to identify markets', also, 'relating to the dynamic balance of a population esp. with regard to the density and capacity for expansion or decline.' In this paper the 'market' and 'dynamic balance of a population' is the groupings or organizations or tribes with regard to the interpretation of International Law; and, the 'capacity and density' is related to growth of alternate voices for world opinion makers. The impact is whether that dynamic balance of a population will 'expand or decline', and for this paper the point of reference is International Law interpretation and implementation standards.

In its October 1998 issue, National Geographic Society allocated more than half the pages to articles associated with the pressures, trends, and opportunities regarding human migration (Parfit, 1998), women and population growth (Zwingle, 1998), and feeding the planet (Reid, 1998). While the words provide the discussion, the images provide an even stronger image of the dynamics of these factors. They can be summarized as: Will there be enough food and water available for the growing world population, which is increasingly on the move (willingly or unwillingly)? In several National Geographic issues of 2002, aspects of these issues were revisited through articles addressing disease and its control (Weiss, 2002), food demands (Ackerman, 2002), water consumption (Montaigne, 2002), and large and growing metropolitan cities (Zwingle, 2002). All factors influencing peoples, organizations, and nations' perspectives, desires, and objectives on many levels from survival of the individual to survival of the Nation, including survival of the ethnic/religious group.

Of note, these factors and this summary point out that when populations grow and move culture and religion are part and parcel for describing the population's heritage characteristics and potential responses to threats. Characteristics which may impact other factors such as the embodiment of morals, ethics, and even the rule of law, which is the particular point of this paper.

Growth of population, including its level of economic success, and possibly another set of ethos could make the current International Rule of Law – and its corollary pieces, e.g., Land Warfare, Geneva and Hague Conventions, which for the U.S. are the 'Law of the Land' through ratification – a model which may need re-interpretation and expansion. Current events have brought these areas of Internal and National Law into the general lexicon and discussions because of the reports of violations within the Iraqi theater of operations. (The history of International Rule of Law is beyond the scope of this paper, though some aspects which apply are in the following section.)

Samuel Huntington has written about the 'Clash of Civilizations' in *Foreign Affairs* (Summer 1993) and his book in 1997. He cited the tension between different ethnic-religious groups, their dynamics of growth, and potential for economic emergence. As discussed, these could significantly strengthen some currently small, limited voices in the international arena of world opinion. These growing voices could have the ability to not only influence, but reshape the interpretation of international standards, references, and norms of conduct for International Law and Conventions.

Of particular note are the recent actions taken throughout the world by U.S., Allied, and Coalition forces and governments in response to the events of 9/11, their precursors, and progeny. This has included articles and discussions about the challenges of application of the tenets of International Law of Armed Conflict, the protection of non-combatants, and respect for medical, educational, and religious institutions and facilities. Do not assume that all of these types of facilities are protected, for a military school can legitimately be viewed as an education institution while at the same time it contributes significantly to a military effort through the education and preparation of military forces and personnel. (For additional discussion on aspects of International Law see the following section of this paper.)

A corollary of these writings and discussions is a question to be considered for the future: 'Is there the potential for western principles and philosophies to be over powered by shifting demographics, population growth, public opinion shifts, and economic growth in the non-western population? Also to be considered are the long repercussions of how the Allied and Coalition actions are viewed and interpreted within the context of the recent Near East Operations. These items and events with their impact on shifting ethos could lead to changing interpretations of the International Law of Armed Conflict, Land Warfare, and several related International Conventions. The western philosophy, which has enjoyed a degree of primacy, may be threatened, in the same way that western 'success' brought down the Berlin Wall. Only this time, the pressure might be in the other direction – that of taking away Western primacy and establishing something else as the moral compass standard. This is basically what happened over the last several years leading up to the events of 9/11. A different philosophical alignment took hold of a region and its organizations of people (tribes), and started a progression of attacks at the institutions, personnel, and structures of Western power, primarily the American government. The attacks of 9/11 significantly expanded that attack target to include all the international institutions manifest by the World Trade Towers and the Pentagon. Thus almost making Huntington's 'Clash of Civilizations' seem like reality.

Another parallel risk AND opportunity is introduced through Tom Friedman's discussion of global economic power in his 1999 'The Lexus and the Olive Tree.' He postulates and supports the growth in economic power and the mobility of financial resources because of access to information technology (computers) and the growing desires for maintaining and improving national stature and population living conditions. All the while accompanied with the risk of opening the door for resources ($s) growth and sustainment to purchase the capability for non-benevolent applications. The global information network is offered as the mitigation of part of this threat, while at the same time it can become a liability as well.

Yet, this same globalization effort opens the door to another problem for the military, with the transformation efforts of the 2001 QDR looking toward more commercial and industrial assistance and sourcing for certain government and military needs – e.g., some of our military logistics support. This is noted through the 2001 QDR point that "DOD will rely on the private sector to provide much of the leadership in developing new technologies. Thus, the Department has embarked on . . . this "quiet revolution" (which) will take advantage of science and technology and continue to provide U.S. forces with technological superiority." (QDR, p. 41, 30 September 2001.) Thus there is a potential for some unanticipated costs for the contracted

logistics support that are being implemented under the rubric of the revolution in business affairs, the revolution in military affairs, acquisition reform, and transformation initiatives in support of JV 2010, JV 2020, and the 2001 QDR. But what does that mean? It means that while making decisions in these areas, their costs may have been considered only from the western perspective and frames of reference, not necessarily from other frameworks and standpoints of the impacts of those decisions and courses of action. Might a different ethos and set of standards have resulted in different original decisions? . . . possibly! Yet unless those different costs and consequences are fully weighed, considered, and discussed, neither understanding nor improved decisions may result.

Some of the possible questions that arise as a result of this change in demographics have been mentioned. They open the avenue to a possible shift in basis for the International Law of War. Those historical precedents, the demonstrated and observed practices by a majority of countries, could be open to change.

International Law – Sources, Standing, and Implications

International Law is a whole area of study, application, and interpretation which is beyond the scope of this paper. Since the events of 9/11, and especially with the events within Iraq and Afghanistan, there has been many comments regarding some aspects of International Law – holding detainees at Guantanamo Bay, lack of respect for non-combatants, denigration of prisoners of war, the employment of civilians as shields, the killing of civilians, destruction of cultural heritage and institutions, and even conduct which constitutes perfidy (the willful act of hiding true colors and acting without revealing them). For this paper some aspects of several of these areas will be duscussed regarding International Law (specifically as pertains to its subsets of Armed Conflict, Land Warfare, and International Treaties and Conventions) which are worthy of mention. A particularly notable collection of examples, explanations, and discussion is available within B.H. Brittin's 'International Law for Seagoing Officers' (1981).

The aspects worthy of note are associated with the spectrum of International Law invocation, employment, and enforcement. The most challenging of these is enforcement because of the need for a recognized overarching entity or organization to which parties are held accountable and are in agreement in recognizing its authority for empowerment to rule, act, and compel compliance. Of equal note is the fact that while there are national laws and statutes, there are also two classes of International Law that are also used and applied. These two classes are: signed, ratified, accepted by 'codification', and used; and, accepted by long standing customary use and practice by many entities.

An example of the former class might truly be represented by the Law of the Sea (LOS) treaty which has been signed by many countries, ratified by many countries, implemented by many countries, and is enforced in varying degrees by many countries. The United States is party to this treaty by signature, ratification with stipulations, and regular and continued invocation of it in many arenas from fisheries to sailing rights of innocent passage. It can be considered the Law of the Land for the United States, because it has been signed by the Senior empowered representative of the United States, ratified by the Senate, and legislation denoting that fact has also been signed by the President.

Another example of the former is the several Hague and Geneva Conventions to which the United States is also party, and regularly invokes parts of them relating to: proper treatment of prisoners of war; not using hostages or civilians as protection of military targets; questions relating to targeting of military or government facilities; or, proper treatment of refugees and other peoples which enjoy protected status, to mention a few.

In the case of customary use and practice, the most common citation the author notes is the maritime tradition of sailors rendering all possible assistance to any individual in distress at sea. This is regardless of nationality or any circumstances related to conflict or status of belligerency.

With this framework in place, please note that a particularly important aspect of International Law (and all law as well) is the act and actions for compliance and enforcement. If a nation were to go through all the steps for signature, ratification, and codification, that only completes a portion of its demonstration of compliance. Through actions and words it sets the example and helps to set the international standard for acceptance. Without the demonstrated actions all the others can be considered as 'for naught'. At the same time, almost all of these Laws allow for notification of withdrawal and exit.

Noting that compliance and enforcement are important, the readers attention is directed to Huntington's discussion of international arms embargo 'violations' or lack of compliance associated with the former Yugoslavia region in Europe; or, the occasionally mentioned oil trading and shipping between and through Iraq, Iran, and Jordan prior to, during, and following the Desert Shield/Desert Storm. These denote examples of the almost extreme level of 'lack of compliance' for codified International Law. (Further discussion of compliance, conduct, and enforce is available within Schelling's, 'Arms and Influence' (1966) which discusses aspects of deterrence, compliance, and compellence.)

For 'customary' international law, enforcement, and recognition can be shifted by the change in 'common practices' or demonstrated expressions of changed implementation. These could be the result of changes in entities (leadership, representatives, or opinion makers) that recognize and support them, as well as changes in policy, majority status, or international standing.

Shifting perspective to that of demographics, the point should be (can be) made that certain 'tribes' do not understand, or comprehend, other 'tribes' and the paradigms and morals of each other. Some are bent on destruction in spite of their own imminent loss, while some are compassionate to the detriment of their capabilities. When these differing perspectives clash, the chance of discussion and understanding may be by-passed and the result is likely a matter of the force of arms, with the result being 'he who gets in the way faces elimination'. The chance that a significant shift in philosophy perspective will take place as world opinion leadership changes has yet to be deeply debated and assessed for unintended and intended consequences when preparing for the future. This reflects the first von Clausewitz (translated by Howard & Paret, 1984, p. 84) dictum that "war is not merely an act of policy but a true political instrument, a continuation of political intercourse, carried on with other means." (p. 84.) This point must be tempered with the history and perspectives of the opposition forces, tribes, and organizations to provide a fuller understanding of interactions and possible responses to courses of actions.

Thus, when a population's demographics shift, or their stature in the world arena shifts, that shift may result in segments of other national populations (and even the 'public will') becoming legitimate and approved targets under a 'new' interpretation of the International Law of War. To state this differently, the potential for other state and non-state 'tribal' populations to grow to majority may result in an international normative power shift in ideology – to one that views ALL CONSITUENTS of the opposition population as LEGITIMATE targets in ALL PHASES of conflict.

Growth in other state and non-state 'tribal' populations may eventually tip the balance of that majority to another balance point. A balance point which makes a different distinction between the military and non-military segments of the country's population compared to the West Phalian point of view. All will be internationally accepted targets for conflict due to the majority of world opinion.

The events of 9/11 and afterward, including the deaths of contractors within Kuwait earlier this year, reveal that vulnerability does come with the trend toward contracted logistics. This vulnerability seems to be partly the result of representing part of the military, as well as being part of the 'institution of the United States' by being an American. Only in the longer term will it be evident whether it represents an apparent shift in world leader opinion based on shifts in worldwide demographics. It augers the need for additional evaluation and discussion about some of the potential liabilities of those contracted logistics support initiatives.

International Criminal Court – Opportunities and Implications

The Rome Convention which resulted in the establishment of the International Criminal Court (ICC) is possibly the latest example of a new international treaty's birthing pains and struggle for survival. It draws its origins from world reaction to the activities of African genocide and ethnic cleansing within the former Yugoslavia. It follows similar struggles with the Comprehensive Test Ban Treaty, and treaties against Chemical and Biological Weapons.

Negotiations on terms of reference, jurisdiction, enforcement mechanisms, adjudication of disputes, transition periods, declaration periods, and ratification requirements for the Treaty to come into effect, and finally the implementation steps. Then, as mentioned previously, there is the continuing struggle with the funding process for continued participation and enforcement, let alone any remedial and corrective actions codified within the treaty. (Note the costs of chemical weapons stockpile destruction within the U.S.) These are all hopefully taken into account when considering starting down the road to creating international conventions and treaties.

In the case of the ICC, the U.S. was heavily involved with its structures and limitations. Then as the final countries' ratification steps were taking place to bring it into force, the U.S. shifted its position and did not sign the treaty instrument for ratification. This step removed the U.S. from the establishing group, a group which generally has more ability to influence policies and direction than countries which accede to the treaty later. (Note the Security Council arrangement of the U.N. charter.)

All these sticking points not withstanding, there continues to be hope for the ICC to develop acceptance, credence, and establish precedence within the international community. Like many other international practices, there is the direct legal responsibility of the signatory action by the nation's representative, along with peer pressure of the community at large, and the desire for not being alienated from world opinion and influence. As alluded to in the demographics section, some of that power of opinion originates from population share, some from economic and natural resources, some from strength of enforcement mechanisms and their careful use whether political, commercial, or military. The opportunity of leadership action also allows for changing directions if circumstances change.

Having briefly summarized the challenges of a recent treaty coming into force, the next section will return to some considerations of changes of implementation, technology, and policies with regard to some of the older international treaties and laws.

Future Possible Consequences – Examples:

This section of the paper will present through discussion of possible impacts and challenges some concerns which the author feels have not been completely discussed within the open forum of public opinion and education: How civilian support personnel are or could be viewed; How contracting civilian delivery of repair parts may change the contractor status with respect to Geneva Conventions; The curious (and potentially deadly) interaction between hospital ships and the world-wide-web; How stronger network support could change manufacturer's facilities status under the Geneva Conventions; and, some International Law and privacy points about the Total Information Awareness initiative. Then close with some thoughts on mitigation, population trends, and the rule of law through international jurists' coordination.

ORIGINAL EQUIPMENT MANUFACTURER & CIVILIAN SUPPORT PERSONNEL

The trend toward contracting more combat service support to the manufacturer or post manufacturer maintainers, and providing on-site technical and training support to the war fighter's on the front line, also seems to open these individuals and groups to being defined as combatants vice non-combatants. Included in this area are the contracted security forces at bases and performing foreign missions. Are we truly prepared for that? I encourage the reader to reflect on our reactions to the deaths of several contractors while on station in Kuwait earlier this year.

The umbrella of traditional western philosophy and the rule of law currently espoused and accepted (signed by most of the nations of the world), has the position that civilians (non-military uniform attired individuals) and non-military facilities are protected sites. They are roughly considered as being in the same regime as cultural, religious, and hospital sites, being protected and considered as non-targets. Even more recently, they have been discussed as worthy of mitigation steps to minimize or eliminate possible collateral damage as criteria for selecting targets and methods.

The efforts of the Revolution in Business Affairs (RBA), Acquisition Reform / Acquisition Initiative (AR/AI) implementation, and Evolutionary Acquisition and Spiral Development (EA

& SD) concepts may lead to friction through the employment of original equipment manufacturer (OEM) technicians and follow-on maintenance personnel (both considered civilians) in the combat zone, on support ships, and bases to perform maintenance and assistance work on tanks, armored personnel carriers, aircraft, electronics, or provide chow line and food services.

As a result of the attacks of 9/11, the question in that area requires a detailed answer and in-depth discussion is: When do they become legitimate targets representing a part of the military, and thus part of the government? If they are wearing non-military cloths, with no insignia, then they might be considered as not military targets and therefore worthy of protected status. However, if the same camouflage (green or brown) utilities are worn, the line may become less distinct, or even may disappear completely.   Another factor to address is determining of level of contribution to the military mission, and thus whether there would be a shift in status between non-combatant and combatant status.

While loss of life is an acknowledged risk of military service, in some instances it is truly recognized not as a possibility, but as the reality. In other more recent experience, there has been the expectation that there should be no friendly forces casualties at all! That there should be no collateral damage to non-military individuals or facilities! That technology has provided the ability to 'precisely engage' the specific target and remove uncertainty! The counter point to these is that our operators and military personnel are still intimately involved in the employment and operation of our systems, and a certain amount of uncertainty will remain regarding targeting even though the training and preparations are done to alleviate or mitigate errors. Witness the aircraft bombing of the Chinese Embassy in Belgrade when another building was supposed to be the target; and, also consider the missiles and bombs that went astray against other than the intended targets in Iraq.

Still, having civilians co-located with military units, supports reducing the total ownership costs of operating and maintaining the systems. Employment of OEM technicians on carriers, or as maintenance personnel in Air Force Expeditionary Air Wings; Bradley Fighting Vehicle motor pools; or even, contracted construction companies, e.g., Brown & Root and others in Vietnam, or Boeing in Kosovo; can actually place civilians, who are protected under certain sections of the International Treaties and Conventions, in position within the targeting ring and collateral damage ring of weapons. One of many results could be the same: both military and civilian families would be impacted and the government (military included) would receive the brunt of outrage and pressure for corrective action, retaliation, charges of negligence, and requests for compensation because of loss of life in a conflict. Everyone has a family who will grieve for them.

The 9/11 corollary is that the attack of the symbol or institution of the government (the World Trade Center Towers) shows that there are organizations with another point of view, with the means and will to act upon that point of view. That their philosophies do not line up with the western premise of non-combatants protected status mentioned above among many other points.

When looking at a traditional other group approach, the opposition may morally feel no compunction to acknowledge any differences between the government/military and the

government/general national population. They may consider everyone a representative of the government or nation they are opposing. They then might view everything and everyone, no matter where located, as representing the nation, as legitimate extensions of the state, and therefore as legitimate targeting entities. Besides the events of 9/11, a recent example might be the case made against the first group of World Trade Center bombers. In that instance, the premise was presented that religion established the threat of oppression from the financial/commercial/trade structure so there needed to be a dramatic event to confront the oppressor, and everyone associated with or tainted by the oppressor. This is in many ways a violation of International Law for the protection of non-combatants and indiscriminant targeting of the population.

As implied through this discussion, while contracting civilians to take over some of the military tasks may reduce some of the near term costs as a partnership relationship between the military and industry, there are alternative points of view which could tip the balance to a different equilibrium point and direction concerning who is a target. The attacks against contractors in Kuwait, and some of the civilian population of the U.S. have lead to much discourse on this point and thus started the generation of different risk evaluations for everyone involved. Another factor to consider is that the Afghanistan President Karsai started with Special Forces personnel providing his security, and then shifted to a State Department contracted protective service arrangement. Adjustments are being made, though the author's question is, whether there is enough reflection on the ramifications?

DIRECT VENDOR DELIVERY

How vendors, manufacturers, and companies providing logistics support, as well as organizations performing supply and quartermaster tasks might be viewed as 'military organizations' and thus legitimate targets.

The traditional western convention mentioned above says that legal combatants are those that wear the uniform and insignia of the armed forces, with an organized command structure. This is traditionally the combat uniform, with rank and unit insignia, and possibly a level of combatant armament being opening carried.

In many military organizations the distinction is made between a line and staff position, or combat and combat support/combat service support. Where the combat individual is clearly on the side of fighting, and the combat support/combat service support individuals are providing support to those fighters. Combat support occasionally is the fire support artillery (thought not normally viewed in that category), or rearming and refueling crews. Combat service support is usually considered the supply, administration, pay, maintenance, medical personnel, etc. – what is normally identified as the logistics tail of the fighting forces.

Direct vendor delivery is in the later category of combat service support. (The reader may note the prior section addressed the segment categories of combat support and combat service support.) In the case of direct vendor delivery, the vendor essentially becomes the supply depot, possibly the stock point for parts and supplies, and part of the delivery system. The vendor may be the location that the delivery agent (DHL, FedEx, UPS, RPS, or the supply system and global

transportation network) picks the part up from, to provide fast delivery upon validated requisition, and release of the repair part. That vendor location may also be the contracted warehouse operated for the government by a contractor. Does this make the commercial carriers moving military repair parts effectively military supply system components? Does this change their status from non-military to military? Does this make the contractor maintained warehouse for the government a military target because it is operating under contract to the government? It might, considering past protection and support of supply ships and aircraft during wartime. Further, under the 9/11 related framework mentioned previously these locations, activities, and organizations would be legitimate targets from an opposition's point of view as they are parts of the government institution.

When repairing equipment away from the front line, how far away is far enough to be considered a non-combatant? During World War II, guards were deployed at all government offices across the nation. The thought was to protect the population (currently viewed as siege mentality or military state). The deployment included placing military personnel at many contractors' facilities that were directly supporting the war effort. Even the movie studios where training films were produced were camouflaged.

Under the traditional western approach, non-uniformed people are not targets, though those providing direct support – maintenance, repair, and feeding – may be considered as directly contributing to the support of the war fighting mission and effort. The challenge is establishing the agreement and understanding of what level of effort constitutes 'direct contribution to the war effort', and what does not. Under another perspective, from a different organization's frame of reference, there may be the view or the approach that: they are not different, and therefore all are valid targets, i.e., the complete population. From where then is this emerging? It actually has some basis in deciding what constitutes supporting the military and the military part of a nation's strategy. That connection is from the fact that the military is drawn from the population and therefore has a direct connection with it. One source of the perspective may be the view that because of the differences in religious or ethnic background, groups do not share the same tenets and beliefs and therefore are sometimes not 'like us'. On the other hand, whether it is blood lines, hometowns, reserve units, or the public opinion and support of the military, the connection to a source is there, much like the general connection of the population to the government and the military within the triad proposed by Clausewitz – government, military, and population.

Not keeping those three parts in balance and harmony can produce instability and result in changing objectives, priorities, and intended outcomes. Having said that, there is the possibility that opponents might specifically target a weak link in the chain of support to the combat individuals and effectively do 'effects based targeting' on that weak link. This would result in undermining execution of missions of units or elements; or, the missions being not being executed by discouraging the population's support of the military. At the same time this possibility may not work as originally intended. An attack aimed at the population in general could backfire, causing an indignant uprising of counter support, and establishing the 'first strike' or prima facie (first fact) of aggression for retaliation. Thus determining fault in the circumstances and allowing proportionate response is important.

To tie this together, direct vendor delivery could make non-combatants more likely to be considered valid targets if world opinion were to shift to the consideration that all members of the nation or country were considered legitimate targets. This might come about through population demographic changes where the western voice of leadership and opinion would no longer be the majority, and some other group or tribal grouping could take the majority position which makes no distinction between the military, government, or population. It is well worth the consideration and discussion, especially considering what is know of the events culminating in the attacks of 9/11 and flowing from Operation Enduring Freedom.

'NON-COMBATANT' VESSELS AND CRYPTOLOGIC EQUIPMENT

This section discusses how the increased use of the world wide web has the potential to not only assist medical treatment of battlefield casualties, as well as open the vessels and facilities to loss of protected status. This vulnerability is due to the use of public key infrastructure/ public key encryption (PKI/PKE) within web-based communications and support applications.

So the question is: What constitutes Cryptologic Equipment and why could it be a problem?

A week hardly goes by without coverage relating to intrusions into computer networks and digital data systems, and the risks of identity theft directly or indirectly. (See articles concerning identify theft: The Washington Post Article – 26 Nov, 2002 by Brooke A. Masters 'Mass Theft of Identities Alleged – 30,000 Victimized; U.S. Charges Computer Worker' and New York Times Article – 12 Jan, 2003 by Adam Clymer 'Officials Say Troops Risk Identity Theft After Burglary'.) This risk will continue as a concern as database supported and web-base supported systems brought on-line continue to proliferate in command and control and logistics support systems within both the government and industry community. The Global Command and Control System (GCCS) and the Global Combat Support System (GCSS) represent an early standard for all levels of combat, combat support, and combat service support, which seem to be progressing toward the Open Architecture and Joint Fires Network structures and applications. This will also extend to medical treatment preparations and evacuation scheduling for injured personnel in the future.

But why would this be an area of concern? The viral and worm attacks on systems, and hacker intrusions will likely accelerate the security efforts of many systems. This may be addressed by multiple levels of login access control, biometrics access control, through the use of virtual private secure networks, or even encryption of data and databases.

Encryption becomes the weak link of sorts for logistics and medical support, particularly hospital ships and the support they provide. Under Geneva Convention for the Amelioration of the Condition of Wounded, Sick, and Shipwrecked Members of Armed Forces at Sea of August 12, 1949, 75 U.N.T.S. 85, entered into force October 21, 1950, hospital ships are protected, non-combatant vessels. They are safe havens, as long as they meet certain requirements. They must display the distinct markings, have a particular color of hull (white), lack armament, etc. Included in this set of conditions is the item that "In particular, hospital ships may not possess or use a secret code for their wireless or other means of communication." (Article 34) This is normally read to mean 'no cryptologic equipment.'

Again, one is tempted to ask, because hospital ships are already declared non-combatant and therefore not military targets, Why worry? The problem will arise, as mentioned above, through the migration of command and control, and logistics support communications not only to more sophisticated electronic circuits and relays, but also movement to computer/internet/web based communications and relay protocols. Many organizations (both public and private) are beginning to rely on some level of encryption to provide a level of security and information assurance. Think about the number of times you see the padlock symbol (similar to this 🔒) when going on-line for purchases or ordering, doing tax preparation and filing, or even working on personnel and training files on-line. That padlock is the manifestation of having gone to a secure, encrypted link to a particular computer server – denoting the employment of a 'secret key code'. The use of public key infrastructure, public key encryption (PKI/PKE) is a growing reality with which we must come to grips. It will not go away. To put this another way, language itself can be viewed as a form of code or encryption for those who are unfamiliar with it, and thus do not understand it. It is in effect a foreign language. It may also lead some individuals to wondering what is being said or hidden. Thus the use of cryptologic equipment (secret codes) would be equated to hiding something, to not being full and open.

Coming back to the hospital ship, to be able to respond to and provide for medical treatment of wounded or evacuated individuals, it must have communications methods to support planning and responsive triage and treatment. It must have communications with the transport entities, individuals, and dispatching units. Thus it must have access to the regular communications systems used by all other members of the forces, communications which are moving to and database supported and web-based applications.

As alluded to, where cryptologic equipment is involved, the protected status must also be addressed to meet the requirements of the Geneva Convention article mentioned above. In the case of the British hospital ship used in the Falklands Conflict, the decision was to remove the cryptologic equipment from the communications suite and have that support provided by a near by naval vessel. In another case, a U.S. Naval hospital ship off Vietnam retained its onboard cryptologic equipment, and had distinctly military personnel handle the communications, relaying the necessary information to the medical personnel, thus providing a degree of personnel separation. Event recently, computers aboard USNS Comfort were observed as being able to establish a secure link – however it is not clear what considerations were reviewed with regard to secret codes and the ship's status.

This demonstrates different methods of addressing generally the same situation. This ability to remove the cryptologic equipment will not remain available as the logistics support system (GCSS or follow-on) comes on-line and use of PKI/PKE permissive keys is imbedded within the operating procedures of the applications to offer a level of security and privacy. Previously there was a specific cryptologic component where the code was entered through the communications equipments. As utilized currently with the computerized, database communications systems, there is a mechanism for applying the encryption code at the point of transmission, and then providing the permissive decode key to the authorized recipients. This effectively makes the receipt of the permissive decode key equal to the presence of cryptologic equipment at the

recipient location, including a medical or hospital facility. This could be considered equal to the above mentioned code-decode devices in the communications equipment.

Protestations to the contrary from the state of origin of the medical or hospital facility, the true establishment of interpretation to characterize the circumstance would be in the eye of the viewer in their frame of reference, not the state of origin frame of reference. If some group of others, by majority, economy, or force of opinion establish that even the permissive key is 'cryptologic equipment', then this might result in loss of the non-combatant protected status of the medical or hospital facilities. Even still, the onboard status of the injured and wounded would have be addressed separately through another section of the international codes and conventions, and international law. The events of 9/11 and discoveries during Operations Enduring Freedom and Iraqi Freedom show that there are groups willing to act on their convictions which are not in agreement with main stream organization positions, characterized as a 'super-empowered angry individual.'.

HARDWARE IN THE LOOP

With the increasing power of the national information infrastructure, the defense information infrastructure and the work toward the global information grid, plugging equipment into a network could provide the functional capability to the front line from rear areas. This offers the opportunity for thin client employment and reach back capability, but also opens the locations of the remote equipment to being considered military or significant locations important to operations, and thus potentially vulnerable.

One of the existing and continuing to evolve features of testing is the use of hardware components (which are under development) plugged into or attached to the actual larger system to be part of the testing during development. This is commonly known as hardware in the loop (HWIL). The current common feature is for the manufacturer to deliver a developmental set of the equipment to the designated platform or test facilities where it will be wired into the system loop and tested.

This is most often at a military facility, clearly marked, and publicly known as such. With respect to targeting and potential attack, this is not at all in conflict with the interpretations of the Laws of War, the military facilities remains a legitimate target. However, what happens if the connection is done at the manufacturer's building? Does that make the manufacturer's building a military target? Many might say NO!, but others would disagree.

As the networks continue to get more robust and bandwidth availability grows, any clear distinction between government and industry locations for connectivity may not always be present if the trend toward remote linkage via the ever developing information grid continues. Currently, that grid is used by the services and industry to link remote sites together for collaborative training, testing, design, concepts of operations evaluation, analysis, and other efforts. It will be only a matter of time before we will see the capability demonstrated to have the hardware remain at the manufacturer and be linked to the actual system by and through the information grid or information infrastructure. The technical challenges to be met will be those of fidelity, bandwidth, and timeliness.   These technical challenges are being attacked and

wrestled to successfully pinned positions with each passing day. But what about the legal implications?

When it is actually realized, another of the International Law of Armed Conflict sections may well come into play. That is, whether this 'obviously civilian facility' while performing the manufacture and testing of military equipment now makes a 'significant military contribution', such that it can no longer be considered purely a civilian facility. To state this differently, that the civilian facility is in actuality considered a military facility because of its contribution, and worthy of being a legitimate target.

While the pro's and con's of possible collateral damage to purely civilian aspects and parts of the facilities could still be a factor in weighing and evaluating the consequences of an attack. Even with the demonstrated improvements of aspects of precision engagement and effects based operations, the fact remains that the outlined demographics trends and implications could cause a shift in opinion basis. There might result a new strong interpretation that all activities within a nation, purely civilian, non-civilian (military), and government, are all appropriate targets, that the opinion might not be limited to only a small group..

On this basis, the civilian plant with the HWIL virtually plugged into the military system, would be a completely legitimate target. Also, it would be a legitimate target even if it were not plugged in, because it is within the targeted nation. Finally, it might remain a legitimate target based on the opposition's interpretation that its mere existence made a 'significant military contribution'. Therefore it was no longer a civilian target worthy of deference, and protected status; but, instead a completely legitimate target, uncertainty regarding function or contributions from other organizations frame of reference not withstanding.

In the previous section of this paper, an International Law aspect of PKI/PKE was introduced. Within the topic of PKI/PKE there are two types of encryption to be considered, the first is that used by public activities of the government and the military, the second is that used by the private commercial entities. Does the distinction between these make a difference? Possibly, if only the western point of view is considered; but, that does not seem to be the trend or pattern apparent of recent events. So, using private vice public key might not offer any protection, it is, or still would be a secret code from the standpoint of the Geneva Conventions.

To frame the point slightly differently: Could the encryption restriction employed in the maritime environment associated with protected status vessels (hospital ships), be extended to apply to continental or land applications with respect to HWIL? Strictly private encryption methods does not make the entity employing it into a public government or military entity for the aspect of targeting. Though, as pointed out when considering other than the western point of view, there is consideration for declaring individuals and activities which directly support the 'war fighting' capacity of the military as establishing the characterization 'making a significant contribution' and thus becoming legitimate targets. Thus, a manufacturer using a private key might still be considered as a legitimate target under other than western philosophies.

Having made these points, what is the course that must be followed. The author feels it is within the area of open and truthful communications. The act of expressing concerns and desires of

nations and peoples as individuals and groups which must interact to ultimately survive and solve problems, overcome obstacles, promote larger group well being, success, prosperity, and understanding could open a path for resolution. That is not to say that everything will be solved to the complete satisfaction of all involved. Instead, it is acknowledging the desire for arriving at solutions which can and do have shared understanding; and, thus have status and standing between the groups and parties because they are respected, mutually supported and enforced, and understood. Such is the case with the discussion in the next to the last section of this paper – Vulnerability Mitigation Is Possible! – to offer an expanding ray of hope instead of a shrinking pie of lost opportunities.

When considering the connection characterization, the perception from the observers' frame of reference becomes the reality much like that of the general points of communications and news interpretations. Are there other perceptions and opportunities available which could mitigate some of the questions that have been raised?

Before that discussion, there is one other area to consider regarding increased understanding and the possibility of ambiguity removal. That is the improvements in examining information sources and trying to discern patterns and threats through the Total Information Assurance initiative discussed in the next, and last, example section.

TOTAL INFORMATION AWARENESS (TIA) – POSSIBILITIES AND PROBLEMS!

One of the interesting, challenging and in some ways disturbing initiatives to surface from the DoD Transformation initiates has been the concept of being able to monitor information from several or numerous data bases as a method of trying to recognize patterns. This initiative has splashed onto the front pages for two reasons of visibility. One has been the individual touted to lead and be the spokesman – Retired Admiral John Poindexter – who received so much notoriety during the Iran Contra Hearings. The second reason related to the issue of access and privacy associated with being able to search through numerous databases (both government and non-government) for correlating and associating pieces of information, looking for patterns. Not only does this raise privacy issues, it also raises international law and treaty issues if the data bases are not within the sovereign territory of the searching agent. This initiative is the Total Information Awareness (TIA) initiative.

The TIA initiative can be considered a very broad implementation of the cognitive hierarchy and pattern recognition. It strives to make sense out of seemingly disconnected and disparate pieces of information, yet it also threatens certain liberties and protections, which are held quite highly and have long legal history and precedence. This is history and precedence which parallels that of armed conflict and the associated international treaties and laws.

The objective of TIA is quite literally mine the data and information that exists within the storage media of the extended computer networks, and monitor that data for patterns which can emerge. This is essentially the same progression as introduced within the 'Naval Doctrine Publication 6 – Naval Command and Control' (1995), where the cognitive hierarchy addresses the progression from data via processing to information, thence via cognition to knowledge, then employing judgement to arrive at understanding. The data is the raw signals and information; the

information is the formatted, plotted, and translated data developed via processing that data; knowledge is the correlated, fused, analyzed and displayed information from applying cognition to the information; and understanding results from synthesized and visualized knowledge as a result of applying judgement.

These steps are like the layman's simple description of taking results from data mining and turning them into varying degrees of displays and virtual reality presentations for trying to figure out what has happened and what may happen. Opening the door for prediction and changing the potential future outcomes.

The challenging international aspect of TIA is linked to the territorial jurisdiction, as well as the physical location where the data resides in servers. As mentioned within Greenberg, Goodman, and Soo Hoo's, 'Information Warfare and International Law' (1997), there were at that time limited international agreements for access to information that is outside national boundaries and within databases in other countries. The author sees the TIA initiative as the initial effort to move beyond the manual and semi-automatic performance of this effort on limited sets of data, to the reality of being able to passively and automatically monitor information, and the information transactions, by way of web crawlers and web spiders for collection of information.

This is not an unrealistic, as there are regular financial and regular news stories about credit card companies and financial institutions monitoring accounts for shifted purchasing patterns or abnormal activities to reduce liabilities and prevent fraud, waste, and abuse of the trust, which has been established when credit cards or loans are issued and processed.

From the recent computer attacks and international events against terrorism, it is not unreasonable for other organizations or countries to feel that some level of aggression has taken place if there were to be unauthorized monitoring of their sovereign territory information data bases attempting to recognize patterns and predict unlawful behavior or aggressive acts. This does not propose to support any particular view of response to the efforts to disrupt computer services and networks which are essentially ubiquitous parts of the day to day operations and activities of many of our lives.

This is not to by-pass the principles of transparency practiced by many countries with regard to the financial plans and implementation. Nor does it mean that companies need to place all their plans completely within the public realm for visibility and put up with potential theft of intellectual property or purposeful loss of market niche or share. It does open the door for the possibility of a country establishing a policy for being prepared to take offensive action for unauthorized and detected snooping within their electronic databases from outside their sovereign borders. Does accessing the data bases mean that national sovereignty is being violated and thus opening the door for initiating hostilities? The jury of public opinion seems to continue to be in deliberations on this point. U.S Congressional opinion seems to be quite firm against the initiative based upon privacy concerns, though where the threshold for privacy, national security, and protection of citizens and sovereign territory from aggression has yet to be completely worked out on a national level, let along an international level.

[This section has purposely not addressed this topic in great detail, and leaves the topic open for the readers' curiosity to lead them to their own conclusions.]

Vulnerability Mitigation Is Possible!

For years there have been fits and starts associated with sorting out the role of women in the armed forces, as well as the world community at large. To be sure there have been prominent women in the military past, whether in truth or in legend and myth with Molly Pitcher, Joan of Arc, Admiral Grace Hopper, Diana, Demeter, or the Amazons. To say merely that the role of women in combat has been one on contention and controversy is to be considered understatement. It is indeed an ongoing conversation and discussion which continues to evoke a mixture of feelings and reactions for all concerned: the individual; their families; their community; their parent nation, etc.

The U.S. role of women in the military has until recent years been one of associate and supporter, but not as combatant. The role of combatant had been reserved for men, though that limitation has largely been removed with the advent of 'women at sea' design modifications for almost all naval ship vessel classes, and the ability for women to become fighter and bomber pilots, and commanding officers of warships.   This represents a significant change and demonstrates confidence of the capabilities of women of the world and workforce. It is almost in the same league as the starting proposition of this paper, that changing demographics of the world is or can potentially change how international law is interpreted, and how it manifests itself through results and actions.

One might hope and possibly think that women might bring a kinder, gentler approach to the arena of international interactions: war, diplomacy, and trade.   Yet, while there are some indications to this effect, anyone who has experienced a mother's 'tough love and discipline, firm questioning, or steely stare' will realize that every encounter is not going to be one of gentleness. Women and mothers have the demonstrated ability to be successful and tough, even ruthless, at the same time.

Thus, as the picture of women in the military and their combat roles has changed, so may the bases and interpretations of international law (codified and customary) change. As already presented, the ability of western leadership and opinion leaders to set the agenda of the remainder of the world could also shift due to changing demographics. Shift away from the western leadership because of world population growth patterns and the potential emergence of new economic leaders and financial engines. In short, the west may not always lead, and the preparation for and discussion of those implications should take place in the open.

The recently released report 'What the World Thinks in 2002' from The Pew Global Attitudes Project of the Pew Research Center for the People & the Press (2002) provides a balanced report of the results of their interviews with some 38,000 individuals in 44 countries, it also shows that there are definite opinions within that community regarding the U.S. and its policies and practices – not all of them favorable. At best it points out that all the inputs are not consistent. A significant one is that "people around the world both embrace things American and, at the same

time, decry U.S influence on their societies." (Pew, 2002, p. 2.) This shows that there is a great deal of distance to travel for full understanding between all organizations and groups.

This challenge is represented by wanting aid, assistance, and products from the U.S., though not wanting the social connection of the aid, the assistance, or the products because of fear of being turned away from their heritage and principles. Sort of like an organization or group wants reconstruction or disaster relief assistance, but at the same time not wanting the consumerism and western (read American) influences to change their traditional life. To state this another way the author feels that F. S. Fitzgerald may have described it the best as explaining, 'for example, [to] be able to see that things are hopeless and yet be determined to make them otherwise,' (Fromkin, 1996) in describing the test of first-rate intelligence. For being able to balance these opposing objectives takes judgement and understanding by all involved, not an unwillingness to deal with the issues, and not a willingness to only lash out violently.

Thus the world population wants to come to America for the opportunities which are represented by the American society, while at the same time not wanting American society to come to their homeland and corrupt it. This is at odds with the data indicating that eight-in-ten Americans believe it is a good thing that U.S. ideas and customs are spreading around the world (p. 6.), while many individuals want American policies and impacts to stay in the U.S. even while looking for the aid, assistance, or products provided by the U.S. production capability.

Thus in the opinion of the author, there is still more to be learned and applied in understanding and responding to the international community. It also points out the important of culture crossing principles and institutions that provide standing for the rule of law and common practices.

As was pointed during the discussion of the ICC birthing and initial support for sustainment, making it viable, it will depend not only on those countries which have signed and ratified the treaty, but also on the willful compliance of more than just those signatories. It will depend on the peer pressure for compliance of those that have not signed or ratified and tacit support of that group as well. The existence and standing of the ICC will hopefully generate its own affects of validity and support through the acceptance of its procedures and decisions, and the ability for them to be fairly carried out. The later steps will be the hardest for demonstrating acceptable action in the world community. Thus there remains the possibility of new acceptable cross culture standards and institutions.

The discussion related to hospital ships and PKI/PKE mentioned the aspect of open communications. Returning to that point, it is only through reasoned discussion of the pro's and con's of those problems and issues, that understanding potentially can be reached. Through discussion there is hope for the start of resolutions and the development of consensus for the rule of law (codified and customary) which upholds rules of fairness and justice for the largest number of individuals. To this end, there is hope, as demonstrated by the 'International Supreme Justices' meetings (Slaughter, 1997). This includes the international use of rulings and opinions between countries' courts because of the universal application of logic and recognition of the logic within arguments employed when deciding cases and establishing a record of case law not isolated or restricted by national borders. While there is the possibility that western thought and

leadership may not remain the true leader, that it may not even be the first among several equals; there is not necessarily the absolute that the ideological opposites could attain primacy. There is the opportunity for growth of understanding, and allowing multiple points of views to peacefully co-exist. There is the possibility that a true rule of law, almost a worldwide rule of law, might be nurtured from a struggling and beleaguered cutting, to fully rooted and vigorous shade tree. There is hope for a relatively smooth transition of leadership of world opinion.

Result and Conclusions

Through the discussions around these examples, many questions will be posed, some information and perspectives presented and discussed, and more than a few points left unresolved with the purpose of leaving them on the table as food for thought and reflection. The intent is to offer another set of views and points to accompany those already discussed, as the transformation of military capabilities are executed in response to the events of September 11th, and the technology application options of the JV 2010, JV 2020, and the QDR transformation initiatives are executed.

The trends in world demographics seem to point to a possible shift in world opinion leadership; a change sometimes is alluded to, and possibly not discussed all the way through. The recent Pew Research Center report 'What the World Thinks in 2002' provides some data which says the final opinion remains in a growth and adaptation process. The national, international, and organizational community discussions must continue to take place. One outcome of those discussions could be additional changes to the policies and methods used under traditional western approaches to sovereignty, diplomacy, and conflict. We have seen some of these through how the international war on terrorism has shifted the relations between states in response to the attacks of September 11th, the challenge is whether these are indicators of only short term shifts or precursors of more permanent shifts. Another possibility is that of shaking or shifting the very foundations on which support current international diplomatic principles, a change for which much of the population was and has not been completely prepared. The jury of public opinion continues in deliberations.

Sun Tzu said (Griffith, 1971): "The enemy must not know where I intend to give battle. For if he does not know where I intend to give battle he must prepare in a great many places. And when he prepares in a great many places, those I have to fight in any one place will be few." This point has been brought home because of the September 11th events. A significant, deep, and open discussion at a service and national level is recommended for considering the pro's and con's of the transformation, 'Contracted Logistics Support', and innovative technological applications discussed at those levels. It may not completely resolve the issues, but the process of discussion may offer the chance to indicate the depth and strength of preparation, and then force any opponent to realize there is no satisfactory location for application of force toward that opponent's desired outcome, that there may be no weak spot or locations where the opposition 'will be few'. Let the discussions begin!

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