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Capabilities and Competencies in Humanitarian Operations

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Naval Postgraduate School

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Preface & Acknowledgements

Welcome to our Ninth Annual Acquisition Research Symposium! This event is the highlight of the year for the Acquisition Research Program (ARP) here at the Naval Postgraduate School (NPS) because it showcases the findings of recently completed research projects—and that research activity has been prolific! Since the ARP's founding in 2003, over 800 original research reports have been added to the acquisition body of knowledge. We continue to add to that library, located online at www.acquisitionresearch.net, at a rate of roughly 140 reports per year. This activity has engaged researchers at over 60 universities and other institutions, greatly enhancing the diversity of thought brought to bear on the business activities of the DoD.

We generate this level of activity in three ways. First, we solicit research topics from academia and other institutions through an annual Broad Agency Announcement, sponsored by the USD(AT&L). Second, we issue an annual internal call for proposals to seek NPS faculty research supporting the interests of our program sponsors. Finally, we serve as a "broker" to market specific research topics identified by our sponsors to NPS graduate students. This three-pronged approach provides for a rich and broad diversity of scholarly rigor mixed with a good blend of practitioner experience in the field of acquisition. We are grateful to those of you who have contributed to our research program in the past and hope this symposium will spark even more participation.

We encourage you to be active participants at the symposium. Indeed, active participation has been the hallmark of previous symposia. We purposely limit attendance to 350 people to encourage just that. In addition, this forum is unique in its effort to bring scholars and practitioners together around acquisition research that is both relevant in application and rigorous in method. Seldom will you get the opportunity to interact with so many top DoD acquisition officials and acquisition researchers. We encourage dialogue both in the formal panel sessions and in the many opportunities we make available at meals, breaks, and the day-ending socials. Many of our researchers use these occasions to establish new teaming arrangements for future research work. In the words of one senior government official, "I would not miss this symposium for the world as it is the best forum I've found for catching up on acquisition issues and learning from the great presenters."

We expect affordability to be a major focus at this year's event. It is a central tenet of the DoD's Better Buying Power initiatives, and budget projections indicate it will continue to be important as the nation works its way out of the recession. This suggests that research with a focus on affordability will be of great interest to the DoD leadership in the year to come. Whether you're a practitioner or scholar, we invite you to participate in that research.

We gratefully acknowledge the ongoing support and leadership of our sponsors, whose foresight and vision have assured the continuing success of the ARP:

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We also thank the Naval Postgraduate School Foundation and acknowledge its generous contributions in support of this symposium.

James B. Greene Jr.
Rear Admiral, U.S. Navy (Ret.)

Keith F. Snider, PhD
Associate Professor

Panel 24. Understanding the Cost/Capabilities of Humanitarian Assistance and Supply Operations

Thursday, May 17, 2012	
3:30 p.m. – 5:00 p.m.	**Chair: Rear Admiral Kathleen Dussault,** USN, Director, Logistics Programs and Corporate Operations Division (OPNAV N41) ***Estimating Logistics Burdens in Support of Acquisition Decisions*** Eva Regnier, Jay Simon, and Daniel Nussbaum *Naval Postgraduate School* ***Financing Humanitarian Assistance and Disaster Response: The Case of the Tōhoku Earthquake and Tsunami*** Keenan Yoho, *Naval Postgraduate School* ***Capabilities and Competencies in Humanitarian Operations*** Aruna Apte and Keenan Yoho *Naval Postgraduate School*

Kathleen Dussault—Rear Admiral Dussault is the director of Supply, Ordnance and Logistics Operations Division (OPNAV N41). She assumed duties as the director of Supply, Ordnance and Logistics Operations in the Office of Chief of Naval Operations (OPNAV N41) in March 2009. Dussault comes to OPNAV from her most recent assignment as commander of the Joint Contracting Command Iraq/Afghanistan, headquartered in Baghdad, Iraq, with 18 regional offices throughout both theaters.

Dussault graduated from the University of Virginia in 1977 with a Bachelor of Arts in American government, received her commission through Officer Candidate School in Newport, RI, in November 1979, and graduated from Navy Supply Corps School in May 1980. Dussault has served in USS *Point Loma* (AGDS-2) in the Pacific Area Launch Support Ship for the Trident missile program as supply officer, USS *Concord* (AFS-5) as the assistant supply officer during Operations Desert Shield and Desert Storm, and as supply officer aboard USS *Seattle* (AOE-3), where she served as Afloat Logistics coordinator while deployed to the 5th Fleet operating area.

Dussault's shore tours include assistant supply officer and disbursing officer to the Navy Communications Station, Nea Makri, Greece; Defense Contract Administration Services Region (DCASR), Los Angeles; a negotiator and contracting officer at Naval Supply Center, Oakland, CA; procuring contracting officer for the Sidewinder and deputy for Missile Systems Acquisition at Naval Air Systems Command (NAVAIR); business and financial manager for programs managed by the Space and Naval Warfare Command; and executive assistant to the Deputy Assistant Secretary of the Navy for Acquisition Management within the office of the Assistant Secretary of the Navy for Research Development and Acquisition. In May 2001, Dussault assumed command of Defense Distribution Depot San Diego, and in April 2003 she assumed command of the Office of Special Projects, Arlington, VA. She then served as deputy director of Acquisition Management at Defense Logistics Agency, Fort Belvoir, VA. Prior to her combat assignment, she was assigned as deputy assistant secretary of the Navy for Acquisition and Logistics Management in Washington.

Dussault has earned a master's degree (with honors) in procurement management from Saint Mary's College in Moraga, CA, and a master's degree in national resource strategy from the Industrial College of the Armed Forces. She has achieved the highest levels of accreditation in Acquisition, Financial and Supply Chain Management and Joint Professional Military Education. Dussault is

certified in production and inventory management through APICS, the educational society for resource management. She has completed the Executive Education Program at Columbia Business School.

Her decorations include the Defense Superior Service Medal, Legion of Merit, Bronze Star, Navy Meritorious Service Medal with two gold stars, Joint Service Commendation Medal, Navy Commendation Medal, Navy Achievement Medal with gold star and various unit citations, campaign medals and service medals.

Capabilities and Competencies in Humanitarian Operations

Aruna Apte—Apte is an assistant professor in the Operations and Logistics Management Department of the Graduate School of Business and Public Policy at the Naval Postgraduate School in Monterey, CA. Her research interests are in the areas of developing mathematical models and algorithms for complex, real-world operational problems using techniques of optimization. [auapte@nps.edu]

Keenan Yoho—Yoho's primary research activities are in the area of analysis of alternatives for capital purchases under conditions of resource scarcity, supply chain management, risk analysis, humanitarian assistance and disaster response, and resource management in environments that exhibit high degrees of uncertainty. Prior to joining the Naval Postgraduate School, Yoho was an operations researcher and principal investigator with The RAND Corporation, a federally funded research and development center (FFRDC), where he led studies for the Army, Air Force, and TRANSCOM to improve the effectiveness of logistics, acquisition, and sustainment operations and to develop policy guidance for supply chain operations. Yoho has several years of experience teaching and developing master's students and executives in the U.S. and Europe in principles of supply chain management and manufacturing operations. He has served as an intelligence analyst for the U.S. Customs Service in the area of international money laundering and has worked large litigation cases representing Lloyd's of London in insurance defense. He was the National Research Coordinator for Manufacturing Skills Standards as part of an initiative funded by the United States Congress to develop national skill standards for the U.S. industrial manufacturing economic sector. He has advised U.S. and European firms for several years in the petrochemical, semiconductor, paper and pulp products, and steel industries, focusing on enabling corporate strategy by using the supply chain as a competitive weapon. Yoho holds a PhD in operations management, an MBA in operations and information management, and an MS in industrial relations from the University of Wisconsin-Madison. He also holds a BA in religion with a concentration in Chinese and Japanese Buddhism from Temple University. [kdyoho@nps.edu]

Abstract

This research will explore the core capabilities of the U.S. military as well as non-military organizations through the lens of the disaster response life cycle. Disasters and war share several attributes, such as the presence of displaced, injured, and vulnerable persons and the need for functioning infrastructure and life support through distribution of emergency supplies and services. Both the U.S. military and non-military organizations bring assets, skills, and capabilities to a humanitarian crisis; however, the competencies and capacities of each are far from homogeneous. Identification of the specific competencies and capabilities that are core to the types of organizations bringing logistics and support to a crisis can enable better planning by both military and non-military organizations such that greater effectiveness and efficiency in the humanitarian response is achieved.

Introduction

There have been around 400 disasters affecting 150–200 million people, resulting in damages to the tune of US$20 billion every year (Vos, Rodriguez, Below, & Guha-Sapir, 2010). As the number of reported disasters increases over time, it is worth identifying those capabilities that are both necessary and unique with respect to humanitarian and disaster response operations. In the past, non-military and non-governmental organizational (NGO) responses to disasters have been described as not having been adequately effective or efficient (Thomas & Kopczac, 2005), particularly in the immediate response phase that involves coordinating supply and uncertain demand. Some of the problems experienced may lie in the fact that in the immediate hours following a disaster, the availability of resources and suppliers may not be known (Tomasini & Van Wassenhove, 2009).

Recently, the United States Department of Defense (DoD) identified humanitarian assistance and disaster response as a key mission in promoting security around the world. As a result, the military Services—Army, Navy, Marine Corps, and Air Force—have begun to shape their training and force structures to improve their effectiveness in conducting what were once considered only collateral, extraordinary, or special missions. As a part of improving the effectiveness of operations, the U.S. military—like other governmental and non-governmental organizations—is also making changes to its operating procedures to improve intra- and interorganizational cooperation.

Response to a sudden onset humanitarian crisis often involves a request for the military (Apte & Heath, 2011) to deliver critical materiel and services to enable, augment, or expand the scope of assistance rendered by non-military and non-governmental organizations. On January 12, 2010, a 7.0-magnitude earthquake struck Haiti. The U.S. Coast Guard (USCG) Cutter Forward was diverted from patrolling duties in the Caribbean to Port-au-Prince, Haiti. It arrived within 17 hours of the disaster and provided the first-hand images and reports of the devastation in Haiti. Similarly, first helicopters on the scene were from the USCG. Such cutters and aircraft assisted in evacuating thousands of injured Haitians and American citizens and delivering medical and emergency supplies. They also helped to begin restoring the port infrastructure. These incidents demonstrate how an organization's assets, competencies, capabilities, authorities, and partnerships bring forth a unique ability in humanitarian operations.

Although the U.S. military has a history of responding to humanitarian crises, there are significant areas where the effectiveness and efficiency of the response, as well as the coordination with non-military and non-governmental organizations, could improve (GAO, 2010). Within the humanitarian operations literature it has been stated that preparing for a humanitarian crisis primarily involves managing the logistics of potential response operations (Apte, 2009; Van Wassenhove, 2006; Thomas & Mizushima, 2005). In all disasters, an effective and efficient humanitarian response depends on, among other factors, the capabilities and competencies of organizations involved in procuring and transporting supplies to and receiving supplies at the affected area (Thomas, 2003).

Disasters and war share several attributes, such as the presence of displaced, injured, and vulnerable persons and the need for functioning infrastructure and life support, to include potable water, functioning wastewater facilities, and access to medical care. Both the U.S. military and non-military organizations bring assets, skills, and capabilities to a humanitarian crisis; however, the capabilities and capacities of each are far from homogeneous. The unique and overlapping core capabilities and competencies of the U.S. military and non-military organizations are not well understood in the context of humanitarian assistance and disaster relief.

Several studies have been conducted and reported in the literature related to humanitarian logistics (Apte, 2009; Tomasini & Van Wassenhove, 2009; Marx, 2009; Gibbons, 2007; Waugh & Streib, 2006; Alexander, 2003), military logistics (Kress, 2002; Van Creveld, 2004; Lynn, 1994; Smith, 2007; Prebelič, 2006), and the similarities and differences between the two (Pettit & Beresford, 2005; Jahre, Jensen, & Listou , 2009; Kovács & Tatham, 2009). Tomasini and Van Wassenhove (2009) discussed information and knowledge management, supply chain management, and collaboration and coordination in the context of humanitarian organizations and private firms. What have not been identified in the literature are those competencies and capabilities that are core to the military and where these competencies are critical or most needed during the operational life cycle of a humanitarian crisis.

Our work builds upon the seminal work by Prahalad and Hamel (1990) on the core competency of the corporation. In this research, we outline the core capabilities of non-governmental organizations as well as those of the U.S. military with respect to disaster response. We then discuss how the core capabilities of the military fulfill needs that cannot be met by other non-military or non-governmental organizations that manifest during the response phase of a natural disaster. Finally, we discuss where the core capabilities of the military are most useful during the life cycle of a natural disaster. This research focuses on the core capabilities of the U.S. military and its support to humanitarian operations.

Capabilities and Competencies

The ability of organizations to function efficiently and effectively during disaster response operations will depend in some part on their ability to identify, cultivate, and exploit their core capabilities; this is especially true during times of economic austerity. Prahalad and Hamel (1990) introduce three tests to identify competencies that are "core" to a commercial firm: the capability must not be easy for competitors to imitate, it must be able to be leveraged across a wide variety of products or markets, and it must contribute to the needs of the final customer or end-user. Building upon the idea of a core competency, we identified three analogous tests to determine those capabilities that may be considered core to organizations that provide humanitarian assistance and respond to disasters. First, the capability should be unique or not met by the rest of the organizers. The uniqueness of a capability reduces the chance that it will be redundant should other organizations wish to contribute to a particular relief effort and would likely make it core. If the capability provides a *public good* (Samuelson, 1954) then this, too, would likely make it core. Second, a core competency should provide potential relief to a wide variety of disasters, which we classify based on the speed of the disaster's onset as well as the geographic dispersion of the affected area (Apte, 2009). Finally, a core competency should make a substantial contribution toward the end relief received by the affected population.

For example, over the past decade, the U.S. Navy (USN) has provided a significant amount of effective humanitarian assistance in disasters due to its many critical and unique competencies. Amphibious assault and transport deck ships form one of the primary capabilities of the USN in humanitarian operations because of their ability for search and rescue, aircraft and landing support, freshwater production, berthing capacity, and medical support (Apte et al., 2011). The USN is in the process of augmenting maritime prepositioning squadrons for supporting amphibious warfare forces. The USN has also been modifying and modernizing the littoral combat ships to provide flexible and modular ships for confronting irregular challenges (USN, 2010).

Because war and disaster response have common characteristics, it is only natural that the military and some humanitarian organizations might share some capabilities; however, we submit that there are some capabilities that are core to each organization and may be identified by looking at their internal documents (such as mission or posture statements) or past performance in operations. Natural disasters give rise to a wide range of needs that may be characterized by both their scale and scope. Tomasini and Van Wassenhove (2009), Kovács and Spens (2007), and Apte (2009) describe those activities that are essential to delivering aid to address the needs of those affected. We summarize the activities in Figure 1.

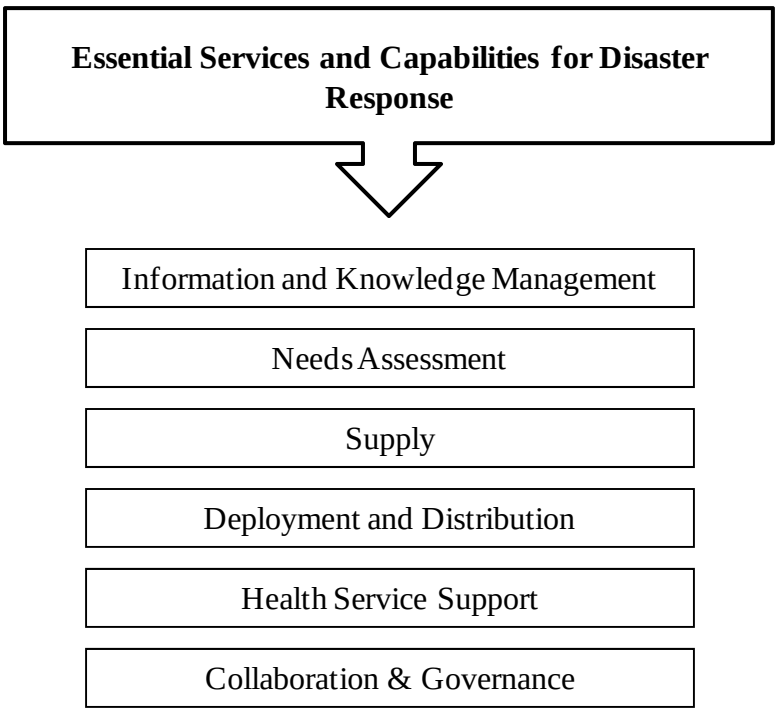

Figure 1. Essential Services and Capabilities for Disaster Response

The collection, organization, and synthesis of information into knowledge are necessary for preparing the initial needs assessment and for managing efforts on a continuous basis. The needs assessment is critical for determining the scale and scope of disaster aid that must be delivered to the affected area as well as the local capacity to receive, organize, distribute, and manage the aid. We refer to *supply* generally as those activities involved with the procurement, staging, warehousing, and managing of inventory to support the disaster response. *Deployment and distribution* refers to the movement and distribution of the supplies from their point of origin to their point of consumption. *Health service support* is treated separately from other relief activities because it is likely to be the service with the greatest scarcity and demand during the initial stages of a disaster response. Finally, *collaboration and governance* are necessary to ensure that the entire relief effort is efficient, effective, and continuous. We now discuss the core capabilities of the U.S. military and NGO organizations with respect to the essential services and capabilities needed to effectively respond to a natural disaster.

Information and Knowledge Management

Information and knowledge management are necessary to develop an understanding of a natural disaster. Information management enables an organization to determine the who, what, when, where, how, and how much of a disaster. For example, when did the disaster occur? Who is affected? What infrastructure and services are no longer functioning? Where is the greatest need for disaster aid? How should the disaster response be coordinated with local authorities? And, how much relief aid is necessary? These questions are not, of course, exhaustive, but they illustrate the types of information that will be collected as well as demonstrate the necessity of synthesizing their answers in order to develop plans that can achieve an effective disaster response.

Information collection by the military is referred to as *intelligence gathering*, and the military has specific types of methods, equipment, and trained staff to develop an operational picture of the “battle space.” Both the military and non-governmental

organizations are largely reliant upon news sources, government releases and contacts that might happen to be on the ground in the affected region for information in the aftermath of a natural disaster. However, the military also has access to satellite and aerial reconnaissance assets that are capable of developing a very clear picture of the state of the infrastructure and population on the ground. In addition to remote sensing and aerial reconnaissance assets, special operations forces that are specially trained to be inserted into adverse environments for the purpose of establishing landing zones and collecting intelligence may be deployed to provide an accurate description of conditions in specific areas.

For example, global integrated intelligence, surveillance, and reconnaissance as well as cyberspace superiority are core functions of the U.S. Air Force (USAF). The USAF develops, integrates, and operates its cyberspace capabilities for supporting missions by continuing work that increases situational awareness while securely improving information-sharing and data-transport capabilities (USAF, 2011). The U.S. Army (USA) has major programs that form the backbone of the tactical network providing real-time operating picture to a great detail (USA, 2012). The software-defined family of radios carries data and sound. Such competencies in information management are critical for humanitarian operations as well.

This gathered information has to be converted to knowledge and integrated into the organizations. It is especially important in both the communities. In military, the rotation of tours completed makes it necessary to transfer the information as knowledge to retain this capability, so that it is not individual-specific. And the same can be said about other organizations where the high turnover rate of the staff and limited resources necessitate the management of knowledge. Knowledge management in terms of lessons learned is also a core capability for both the communities.

Needs Assessment

Needs assessment is the second essential capability that needs to be cultivated by all the organizations involved in humanitarian operations. However, the first critical step in this process is to define what it is, since the way in which the military and NGOs describe needs assessment is very different. The military will be more likely to describe needs assessment as *requirements generation*, whereby there is a mandate to generate a high-fidelity *operational picture* of what is happening in the area of responsibility. For the military, the needs assessment involves the fusion of all-source intelligence that can be collected by human, electronic sensor, and imagery assets to generate situational awareness; the end product is a statement of the capabilities that are needed to accomplish a specific mission, which will be carefully defined in terms of its duration, scope, and chain of authority. To the extent that the military is able to share information over unclassified systems with non-military and non-governmental organizations, the information collected from their unique assets can be very valuable for generating higher quality assessments of the needs on the ground.

For NGOs, needs assessment in the event of a disaster tends to be gaining awareness of the size of the affected population so that calculations may be made to determine the type and volume of aid that must be sent to the area and a project plan can be developed to deliver the aid. For example, the World Food Program (WFP) calculates quantities of food to be delivered to various locations based on needs assessment surveys that take into account size and scope of the affected population (De Angelis, Mecoli, Nikoi, & Storchi, 2007). The International Federation of the Red Cross (IFRC) believes that donor national societies should be involved in the needs assessment phase. Without knowing what is needed, humanitarian organizations find themselves in a tough situation of managing

donated supplies that may or may not be necessary or suitable for the given disaster (Samii, Van Wassenhove, Kumar, & Becerra-Fernandez , 2002; Apte, 2009).

The needs assessment plays a critical role in all supply chains' decoupling point, where the supply chain ceases to be forecast-based and becomes based on a specific customer order (Van Hoek, 1997). In other words, similar to agile supply chains in the private sector (Christopher & Towill, 2000), in response supply chains the decoupling should happen where the affected population's specific need "pull" meets the upstream "push" forecasted by the relief organizations. The more that the demand information travels upstream, the better it is to locate the strategic inventory downstream. However, this suggests that the needs assessment (demand forecasted remotely) should be one of the upstream activities in a response supply chain (Oloruntoba & Gray, 2006), whether based within the military or NGO community. Such placement can enhance the agility of the supply chain by being responsive to the changing needs of the affected population and being able to respond quickly to these changes if it has effective information infrastructure.

Supply

The third essential capability, as shown in Figure 1, is supply. The supply capability includes procurement, staging, warehousing, and inventory management. For both the military and NGOs, this need will entail reviewing any pre-staged or prepositioned materials and determining their suitability for the particular disaster as well as determining how the supplies will be moved from their point of origin to the final point of consumption. The military has a core capability in the management of large stores of supplies in the case of a contingency as well as all of the necessary material-handling equipment and supply professionals to move materiel quickly.

For example, the USA provides key support to civil authorities. The Army's Reserve and National Guard components are the great strength for missions during floods, wildfires, and tornados. The National Guard provides a distinctive capability for domestic disaster by procuring, distributing, and reaching emergency supplies and services to the affected areas (Apte & Heath, 2011).

In addition to managing supplies that they may have warehoused in preparation for a disaster, NGOs must also manage donated supplies. Due to uncertainties of demand and supply, donated supplies are as much a blessing as a curse. Any lack of information about specific characteristics of the affected area will make it harder to secure the appropriate types of supplies (Apte, 2009).

Deployment and Distribution

The military possesses unique transportation assets that provide essential deployment and distribution capabilities during a natural disaster. Both strategic airlift and sealift capabilities that can roll-on and roll-off equipment, materiel, and personnel are available in quantities and within lead times that very few other organizations are capable of delivering. Large transport aircraft capable of landing on short, unimproved airfields, for example, are very important for some types of disaster responses. Ships with shallow drafts or landing craft that can move directly from the sea to shore without a need for a dock are useful when the ports are damaged or too congested to receive the volume of aid that is flowing in from external sources (Apte et al., 2011). And when the airports may be inadequate for receiving the necessary aid to support the relief, the military has the capability to bring large numbers of helicopters off-shore that can operate independently of support from land in order to deliver supplies to specific locations in need.

For example, helicopter vertical lift is and will be the most highly demanded service—and costs the DoD the most. Flight operations represent nearly 80% of total incremental costs during the 2010 Pakistan floods (Ures, 2011). However, a military outfit like the DoD has the most capability and competency in sufficient scale and within the needed time lines, since it possesses the only ready fleet of such assets. The NGOs that respond to a disaster are typically dependent upon contracted or regularly scheduled commercial flights in order to move staff and supplies to the affected area.

Health Services Support

Both the military and NGOs work toward the same objective when it comes to providing health services: relieving pain and suffering as well as preventing fatalities. However, the military possesses hospital ships as well as rapidly deployable field hospital and surgical units that are capable of deploying rapidly while managing the logistics of supply and the transfer of patients to higher levels of care in a cohesive manner. Historical knowledge and mindset helps the military in managing the health support services. Among these, the hospital ships of the USN have significant upfront costs for deployment. For it to be deployed, it must serve a symbolic purpose or critical flexibility in medical supplies and services that outweighs its uneconomical characteristics. Thus, although an extremely useful capability, it can prove to be extremely expensive as well and therefore may not be a competency to be taken for granted in case of a disaster.

On the other hand, due to the diversity of disasters, NGOs may have to source some medical capabilities from many other organizations or networks of volunteers and then form those individuals into teams to provide care. In addition to providing general medical supplies, specific requirements also have to be managed (such as the proper vaccine during a pandemic).

Collaboration and Governance

Collaboration can be defined as a process where two or more organizations work together to achieve a common goal. Governance, on the other hand, could be achieved through “command and control” or pre-established logistics networks and supply chains. Collaboration is a critical foundation in humanitarian logistics to mitigate any kind of disaster (Waugh & Streib, 2006). Response supply chains in a humanitarian crisis “are ‘extreme supply chains’ that require skilled and adaptable participants who are able to ‘cope’ with high levels of uncertainty and constantly changing operational environment” (Hughes, 2006). Perhaps because of the extreme conditions, military and humanitarian logistics are examples of “fully flexible” supply chains that are even more “agile” than agile supply chains in the private sector (Gattorna, 2009). Occurrence of a disaster leads to the need for creating a complex supply chain from scratch due to disruption in normal living. Such a supply chain needs to be fully flexible for immediate responses that are “framed and launched as expeditionary as possible—this is decision-making on the run, without apologies” (Gattorna, 2006). This type of decision-making cannot be achieved without collaboration.

The collaboration scene in the humanitarian community changed significantly after Hurricane Katrina. One of the most significant improvements was the establishment of the United Nations (UN) cluster approach, facilitating the collaboration among organizations were established. It strengthened the structure and, through that, the level of collaboration. Eleven clusters reflecting the global humanitarian structure led by NGOs and UN agencies. This cluster approach addresses the gaps in humanitarian response and ensures greater predictability, accountability, and partnership. The clusters were the result of the humanitarian response review conducted by the UN in 2005, which was prompted due to

the ad hoc and unpredictable nature of numerous responses of international agencies in the past. The approach essentially gives the international humanitarian community a much needed structure and accountability. It enables these organizations to professionally conduct their business and be better partners with host governments, authorities, and communities. In short, it offers a much needed structure to the global humanitarian system.

Examining the past experience of the humanitarian supply chain reveals the critical need for collaboration and coordination (Tomasini & Van Wassenhove, 2009) among not only humanitarian organizations but also among military and private sectors (Pettit & Beresford, 2005; Samii & Van Wassenhove, 2003; Van Wassenhove, 2006). A significant example for collaboration between military and humanitarian agencies is to ensure adequate transportation and distribution of critical supplies and services and the security needed to maintain these activities.

Challenges remain in this civil-military collaboration in terms of principles versus pragmatism. One of the GAO reports (GAO, 2010) cites U.S. Southern Command (SOUTHCOM) as having mature interagency processes and coordinating mechanisms in this area. The recent Haiti disaster and the SOUTHCOM response suggests that there exist challenges in coordination among government agencies, international partners, NGOs, and private organizations. These challenges have to be met to improve the humanitarian assistance and disaster relief.

Figure 2 depicts the core capabilities of both the U.S. military and NGOs and matches them to the essential services and capabilities required to effectively respond to a natural disaster. Figure 2 is a mapping of core organizational capabilities to essential response capabilities.

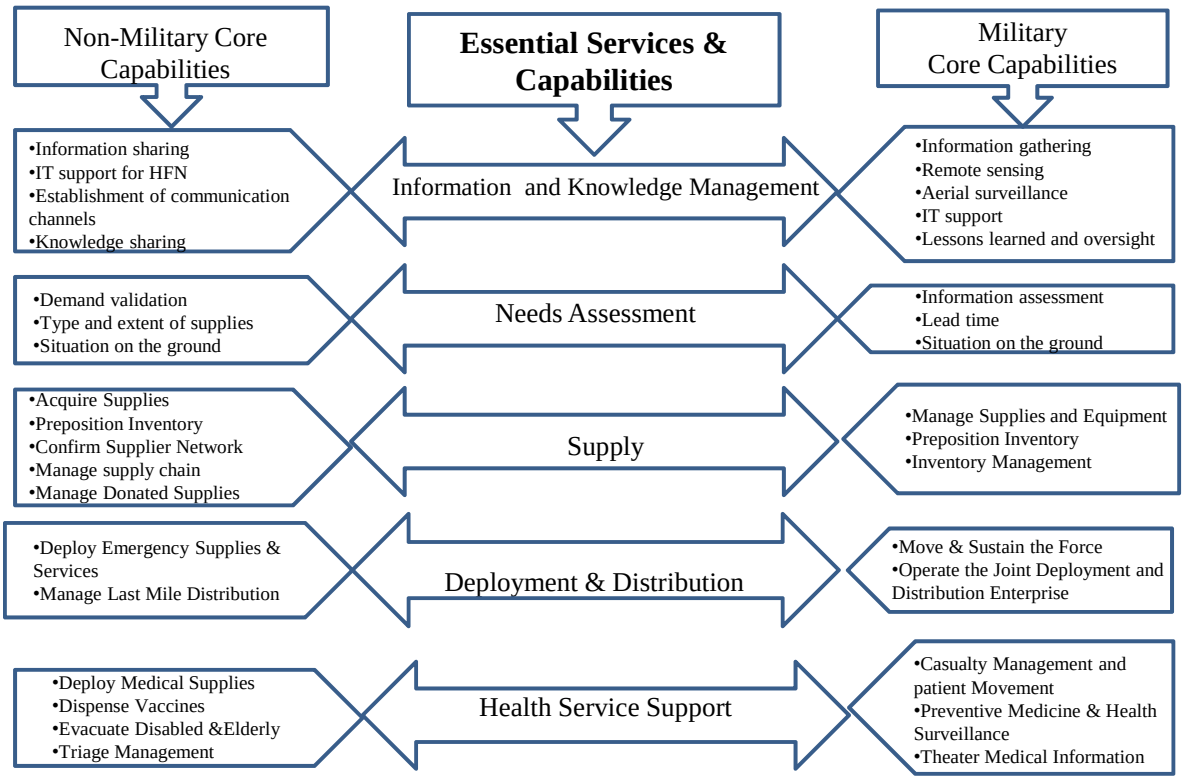

Figure 2. Non-Military and Military Core Competencies
(*Joint Logistics*, 2008)

Summary and Conclusion

This research identified those competencies and capabilities that are core to the U.S. military and non-military organizations. Further, this work leads and contributes to what we hope will be a growing body of empirical and case-study research that explores the role of military, non-military, and non-governmental organizations in humanitarian assistance and disaster response to facilitate greater understanding within not only the field of operations management but also across disciplines to include academics, policy makers, and decision-makers in public administration, public health, and international aid. Although our research is focused on the U. S. military and its interaction with domestic and international non-military organizations, we believe that our ideas can be applied to other military organizations concerning core capabilities and competencies. Future research investigating the capabilities of the militaries of other countries might lead to the development of regional capability maps that could assist both governmental and non-governmental agencies in their disaster planning processes.

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