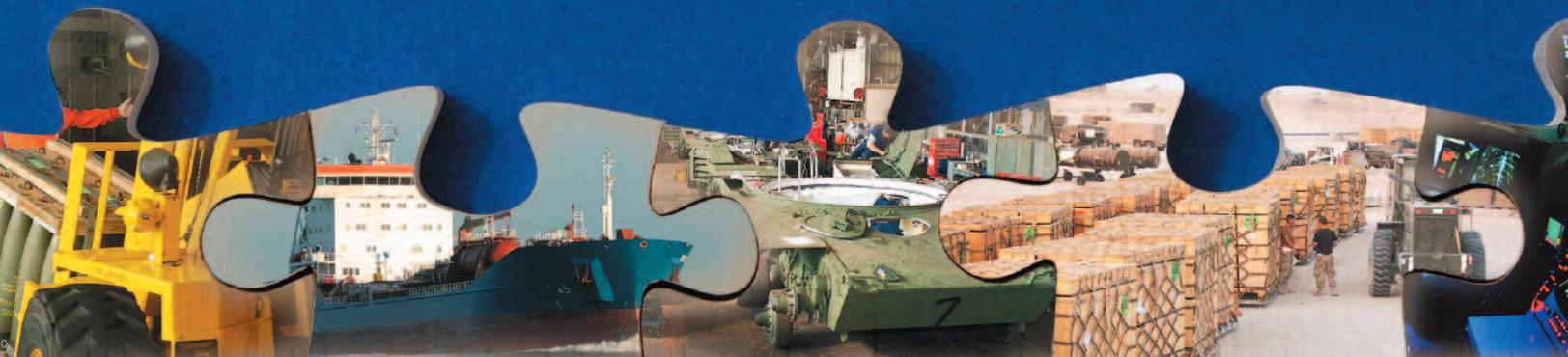


IMPLEMENTING LOGISTICS TRANSFORMATION:

A NEW MODEL FOR THE MILITARY
SUPPLY CHAIN



 Lexington
Institute





EXECUTIVE SUMMARY

A transformed U.S. military must be supported by a new logistics system. U.S. forces are becoming increasingly strategically deployable and operationally agile. Operations in Afghanistan and Iraq have shown that while combat forces are transforming, the logistics system has not kept pace. In Iraq, fast-moving U.S. forces outran their supply lines. Control over the supply chain was fragmented. Logisticians lacked adequate communications, databases or visibility into the system.

While the Department of Defense (DoD) has made a significant effort to modernize its logistics operations, the system still is too large, too slow, too fragmented, too expensive and technologically obsolete. The irony is that defense logisticians understand the theory of modern supply chain management. The difficulty is implementing change. A related problem is the lack of an overarching strategy for logistics transformation and the absence of centralized supervision of the massive number of disparate transformational programs.

The private sector has had tremendous successes in organizing and managing end-to-end supply chains, increasing both the speed and reliability of transportation and reducing logistics costs. The catalyst for the globalization of commerce was the transformation of supply chain management, also known as logistics. Wal-Mart success was built on an agile, lean and integrated logistics system. Companies such as General Electric, UPS and Maersk have revolutionized supply production and supply chain management with concepts such as Lean, Six Sigma and Total Asset Visibility.

The DoD is not Wal-Mart. Nevertheless, it is clear that military logistics has much to learn from its civilian counterparts. Indeed, the private sector could even take responsibility for parts of the supply chain, thereby freeing the military for other tasks. The most important lesson that the DoD can learn is the need for centralized oversight of the supply chain.

This study concludes that there are four over-arching issues that need to be addressed in order to create an agile, interoperable, lean logistics system. First, the DoD and the Services must devote adequate resources to support logistics transformation. Investment in technology is a vital aspect of transforming logistics. Areas for investment include communications capabilities, sensors and radio frequency tags, enterprise software, adequate air and sealift, automated diagnostics and change management. Second, DoD must create a standard data environment and interoperable e-Commerce and ERP solutions. Today, there exist hundreds of Service-based or DoD-wide initiatives that create the potential for real confusion, duplication of effort and delay. Third, the DoD needs to identify a single process owner who will be responsible for overseeing the movement, storage and delivery of materiel from factory-to-foxhole. Currently, TRANSCOM is only responsible for a portion of the supply chain. Last, the DoD and the Services must harness the capabilities of private industry. Private industry not only offers lessons learned but also services that could lessen the burden on the DoD.

The initial draft of this report was written by Dr. Daniel Gouré and was reviewed by members of the Logistics Working Group.



THE NEED TO TRANSFORM THE MILITARY LOGISTICS SYSTEM

The smashing U.S. victory in the opening phase of Operation Iraqi Freedom (OIF) demonstrated the superiority of even a partially transformed military. However, OIF also demonstrated another truth. Without adequate and modern logistics even the most advanced combat force faces the very real possibility of defeat. In making the case for defense transformation, former Deputy Secretary of Defense Paul Wolfowitz was fond of citing the example of the German Wehrmacht that conquered much of Europe with a force that was only ten percent transformed. What he failed to note is that the Wehrmacht was defeated in North Africa and Russia primarily because of the failures of the German supply chain.

The U.S. military experience in Iraq was similar. Fast moving U.S. forces outran their supply lines. But equally dangerous was the inability of the logisticians to move vital supplies, particularly an adequate number of spare parts, forward to the combat units. According to the After Action Report of the 3rd Infantry Division “many units operated dangerously low on ammunition, fuel, water and other sustainment items.” The tactical logisticians used separate information and communications networks that were out of range of their higher headquarters. They also lacked adequate reach-back capability to tie together the entire supply chain. Logistics communications and management of flow was very bad. They had radio frequency identification (RFID) tags on everything, which helped in locating pallets containing needed spare parts. But, transparency is not enough. They did not have the necessary ability to know what was needed, where, or how to get it there. There were backlogs of hundreds of shipping containers at distribution because of identification and transportation problems.

Iraq demonstrated two additional logistics problems: the inadequacy of stocks of munitions and the lack of surge capacity. As a result, it was difficult initially to supply deployed forces with adequate amounts of body armor, armored Humvees, tank treads, and ammunition. The goal of keeping procurement costs low has resulted in contracts going to the lowest-price bidders. They, in turn, have sought to control costs by instituting lean production measures and by eliminating surge capacity. Another consequence of a lowest-cost approach to acquisition is long lead times for spare parts and replacements.

Iraq and Afghanistan demonstrated another important problem with the logistics system. The logistics time-lines and practice no longer match those of the expected conflict scenarios. The current logistics model still is based on a World War II approach. The new, non-linear warfare eliminates the distinction between the front and rear. The Department of Defense (DoD) needs a new model that reflects a smaller footprint ashore, fewer items coming into theater, improved reachback capabilities, rapid delivery to the forward units, and secure rear areas.

Admittedly, the logistics picture was better than had been the case during Desert Shield/Desert Storm if only because there were no ‘Iron Mountains’ of unnecessary supplies shipped from CONUS to the Middle East and back again. The problems described above came about despite enormous efforts to improve the logistics process through numerous plans, programs, architectures and networks. Lots of resources were invested in providing RFID tags. Nevertheless, most of the problems experienced in 2003 also occurred during the 1991 conflict and were documented by the Services’ lessons learned processes.

In essence, the DoD, with its millions of people, thousands of aircraft and hundreds of ships, found it difficult to do what United Parcel Service (UPS) does routinely – deliver large volumes of packages over long distances, accurately and on time. It could not do what the global shipping company Maersk does routinely – provide on a reliable basis, the delivery of material to distant and difficult places. Both of these companies have solved the last mile problem that still plagues military logistics.

It is time to recognize that logistics is now more than ever a force multiplier. An agile, responsive, connected logistics system will enhance combat power and force maneuverability. Logistics is not simply the movement of supplies; it is the entire set of activities that goes from factory to foxhole and back again. Planners and commanders need to think of logistics from the research and development side, through development and production to the industrial base, along with stockpiles, transportation, delivery, use, recovery and repair/modification.

There are a number of current demands on the logistics system that must be addressed in the near-term. These include resetting the current force, managing the flow of materiel and equipment to and from theaters of operation, addressing forward supply and repair (including the roles of private contractors and the Government's depots), ensuring the security of the in-theater supply chain, and acquiring the necessary surge capability to meet wartime demands. A number of these are highlighted in the Army G-4's logistics white paper, *Delivering Materiel Readiness to the Army*, which identifies four specific goals for the near-term modernization of logistics: connecting Army logisticians; modernizing theater distribution; improving force reception; and integrating the supply chain.

For the long-term, the DoD must institute a transformation of the entire supply chain. The goals for this transformation should include the ability to project and sustain force with a minimum footprint, and reduced cycle times to industry. In order to achieve these goals, the logistics systems need a common definition of logistics, enterprise-wide integration, advanced automatic tracking and management software, a common logistics operating picture, expanded public-private partnerships, and a more robust defense industrial base.



DEFINING “LOGISTICS”

One problem in transforming the logistics system is the lack of agreement on the definition of logistics and the boundaries of the logistics process. What does logistics entail? Is logistics the same as supply chain management? Or is it more encompassing to include research, development and acquisition?¹ Only when the terms are clearly understood, can the scope of a logistics transformation be defined.

In the 18th Century, the French invented “a third military science which they called Logistique, or Logistics...the business of moving, supplying and quartering soldiers. It stems from the

French Loger, which means ‘to quarter’, that is, ‘to find lodging.’”² The military historian Stanley Falk stated that “logistics is essentially moving, supplying, and maintaining military forces. It is basic to the ability of armies, fleets, and air forces to operate — indeed to exist. It involves men and materiel, transportation, quarters, depots, communications, evacuation and hospitalization, personnel replacement, service, and administration.”³

The meaning of logistics today has been expanded and modernized, resulting in a definitional disconnect both within the DoD and with the private sector. The first, from Joint Publication (J.P.) 1-02, the DoD *Dictionary of Military and Associated Terms*, states that logistics is:

... the science of planning and carrying out the movement and maintenance of forces. In its most comprehensive sense, those aspects of military operations which deal with: design and development, acquisition, storage, movement, distribution, maintenance, evacuation, and disposition of materiel; movement, evacuation, and hospitalization of personnel; acquisition or construction, maintenance, operation, and disposition of facilities; and acquisition or furnishing of services.⁴

J.P. 4.0, the *Doctrine for Logistics Support of Joint Operations*, articulates a different understanding of logistics:

The science of logistics concerns the integration of strategic, operational, and tactical sustainment efforts within the theater, while scheduling the mobilization and deployment of units, personnel, equipment, and supplies in support of the employment concept of a geographic Combatant Commander. The relative combat power that military forces can bring to bear against an enemy is constrained by a nation’s capability to plan for, gain access to, and deliver forces and materiel to the required points of application across the range of military operations...⁵

Yet, *Joint Vision 2010*, later *Joint Vision 2020*, provides an understanding of the nature of logistics with a new operational concept, ‘Focused Logistics,’ which is defined as the:

... ability to provide the joint force the right personnel, equipment, and supplies in the right place, at the right time, and in the right quantity, across the full range of military operations. This will be made possible through a real-time, web-based information system providing total asset visibility as part of a common relevant operational picture, effectively linking the operator and logistician across Services and support agencies. Through transformational innovations to organizations and processes, focused logistics will provide the joint warfighter with support for all functions.⁶



Finally, the private sector uses 'supply chain' and the 'logistics network' synonymously and hence defines supply chain management (SCM) as:

... a set of approaches used to efficiently integrate suppliers, manufacturers, warehouses, and stores so that merchandise is produced and distributed at the right quantities, to the right locations, and at the right time in order to minimize system wide costs while satisfying service-level requirements.⁷

The most important question is whether or not to include research, development and acquisition within the purview of logistics. Operationally, the Services follow the lead of the private sector in separating out the various processes. There is also the organizational separation as shown by the Under Secretary of Defense for Acquisition, Technology and Logistics, not just technology and logistics as J.P. 1-02 would have us believe. However, given the mantra of 'train as you fight,' it becomes paramount to resolve the competing understandings of logistics in order to best implement lessons learned and transformation initiatives for the future force. This disconnect in the definition creates risks for the DoD and Services in multiple areas, ranging from accountability to implementation of business best practices.

Accountability for certain processes are altered depending on which definition is employed, J.P. 1-02 or J.P. 4.0. This can create confusion within the chain of command when systems fail and



allow others to avoid accountability. Furthermore, this generates an unnecessary turf battle between organizational elements in regards to ownership and the budget authority that rests within that ownership. This authority issue can be drilled down even further, resulting in numerous questions. How do elements charged with oversight define risk management, with multiple iterations of logistics? Will managing the risks be implemented the same way across the spectrum? Who or what will define the processes and the associated requirements? What are the metrics for success and have they been standardized?

The strength of J.P. 1-02 is that it encompasses the broadest concept of logistics. Within logistics there is no static stopping and starting point; from research and development to when an item is delivered to the warfighter on the front-line, all aspects of the network are inter-related and need to work together to support the warfighter. However, in reality the definition is too ambitious and broad. The organizational construct does not give one entity the authority to exert control over the entire logistics network resulting in the competition for scarce resources and turf battles. Likewise, there is an inability to create the desired synergy resulting in incomplete processes. The definition is not realistic to the precedent set by military operations – the time when the logistics network must operate the most successfully. Finally, it becomes difficult to implement the business best practices that view logistics in a more narrow fashion.

Logistics and supply chain management should be used synonymously, leaving the processes to those enumerated by the doctrine for joint operations. It allows the use of common metrics that are easily identifiable; for example, those found in Supply Chain Operations Reference (SCOR). It also supports both the notion of ‘train as you fight’ and the organizational structure within the DoD and Services.

It is important to note that research, development and acquisition cannot be ignored in creating a transformational logistics system. The type of acquisition and support necessary for an item directly impacts the supply chain. This is clearly evidenced by the experience in OIF when the 3rd Infantry Division nearly ran out of disposable batteries. Had the research, development and acquisition authorities understood the stress that would create, alternatives could have been identified. Similarly, had logisticians shared their concerns and ideas with weapons systems designers and the acquisition community, the need for an alternative to disposable batteries might have been made clear.

In order to avoid such hiccups in the future, the definition chosen should be cognizant of research, development and acquisition, even if not fully incorporated. Rectifying this lapse cannot occur until a clear authority for DoD-wide logistics exists and acquisition reform is completed. The opportunity had existed with the Base Realignment and Closure (BRAC) process.⁸ However, the Supply and Storage Joint Cross-Service Group (SSJCSG), which analyzed logistics functions for the BRAC process, stated that their recommendations only revolved around “fundamental logistics functions: supply, storage, and distribution.”⁹ Therefore, continuing the separation of research, development and acquisition would be the most beneficial to avoid even more inconsistencies. An effort should be made in the Quadrennial Defense Review (QDR) to incorporate the full notion of logistics in their analyses, especially since the present acquisition reform should be completed at the same time. It is a reform that hopes to establish a structure with clear alignment of responsibility, authority and accountability. Then, the intersection of the processes under one purview of responsibility could become successful.



MILITARY LOGISTICS: KEY HISTORICAL DEVELOPMENTS

Logistics is what Secretary of War Elihu Root warned about in 1904, “Our trouble will never be in raising soldiers. Our trouble will always be in the limit of possibility in transporting, clothing, arming, feeding, and caring for our soldiers...”¹⁰ The limits of possibility were continually extended in the 20th Century as industrial-age production and distribution methods were applied to military logistics.

Brute force, ‘Iron Mountains,’ excessive footprint, and multiple orders were characteristics of the industrial-age supply chain. World War II, the Korean War and the initial stages of the Vietnam Conflict saw logistics managed as a one-way ‘push’ of materiel to the theater. There was virtually no feedback from the theater to inform the logistics system. In Vietnam, due to the coarseness of data, “the planning factors were derived by dividing the tons of ‘stuff’ shipped into theater by the theater troop strength; thus, all the new planning factors were in units of pounds per man per day.”¹¹ This standard was used for items such as rations and ammunition but also included naval propulsion fuel. The planning factor used in Vietnam continued through the first Gulf War.

In another age, ‘Iron Mountains’ could be created because the military doctrine of the time expected that there would always be adequate time for a buildup of forces and supplies. The ‘push everything forward,’ brute force approach that resulted in huge stockpiles was essential because there was an absence of adequate sustainment planning models, a lack of knowledge about what materiel was flowing into theater, along with the view of logistics as a secondary concern in military planning. These flaws were clearly highlighted in the 1978 worldwide deployment exercise. After the exercise, analysts realized that there was no one accountable for the synchronization of distribution or a stakeholder in the process. This lack of control in the ‘end-to-end’ spectrum clarified that “had there been a real conflict, the lack of coordination would have resulted in 400,000 troop casualties. Additionally thousands of tons of supplies and up to 500,000 trained combat troops would have arrived late.”¹² With this deployment exercise in mind, USTRANSCOM was created in 1987 to begin synchronization of the distribution process.

The technological developments and procurements of the 1970s and 1980s came to full force during the first Gulf War; in many respects, it was the first transformed war. Network-centric warfare was beginning to take shape and the true value and strength of technological developments, e.g. precision-guided munitions, was brought to the forefront. However, logistics “was not accounted for in command and control systems. Software support programs for operation and tactical logistics were not developed, nor did logistics claim any part of the communication bandwidth becoming available. The logistics software support programs that were written pertained to inventory and maintenance accounting, which was administrative in nature rather than operational or tactical.”¹³

CENTCOM Commanding General Schwarzkopf required thirty to sixty days of supplies in the theater to assure that there was an appropriate level of sustainability. This requirement resulted in needing six months to stage the forces and supplies necessary for the operation. CENTCOM also based its logistics plans on the “doctrine that each Service would train, equip, and sustain its own forces...each Service was responsible for its own logistics, except that common-user support (such as water and food) would be provided by the component having the greatest presence

[Army].”¹⁴ In addition, each Service was responsible for its own logistics situation reports, resulting in the theater Combatant Commander (COCOM) only knowing total supplies but not how or where the items were dispersed. The logistics situation reports highlighted not only the inter-Service stovepipes in a ‘joint’ operation but also the “inability to keep track of inbound shipments...without in-transit visibility, logisticians could only track not predict, the logistics situation.”¹⁵

As a consequence of all the supplies pushed forward, it took 13 months to withdraw the ‘Iron Mountains’ of unneeded supplies. This came at a huge price in dollars, time and lost responsiveness to any other potential contingency. In the end, the Services recognized the need for updating the logistics system and therefore began to undertake a wide range of initiatives over the following decade. Not only was Desert Storm an impetus for the transformation, but also the recognition by senior leaders that the military raised for the Cold War might no longer be valid. With the 1992 Bottom-Up-Review and the subsequent QDRs, transformation of the military and the DoD began to take place across all spectrums. The 2001 QDR recognized the need to transform logistics to correct the lack of an integrated system and the lack of a source of accurate, real-time information to support the system.

The Services and Agencies all began different efforts of varying sizes to streamline and modify their logistics system to apply the above-mentioned concepts. To varying degrees, some of these concepts have been applied. For example, they achieved Total Asset Visibility (TAV) in distribution from CONUS to Bosnia during the initial stages of the peacekeeping operation. There was TAV from factory to the port of debarkation in both OIF and Operation Enduring Freedom (OEF); unfortunately, the asset visibility was practically lost in the last tactical mile. The loss occurred because there were too many seams in the system from the resulting multiple hand-offs and lack of clean data sets. Limiting the number of seams allows for data integrity and TAV through to the final destination.

In 2001 the Office of Logistics and Materiel Readiness initiated the baseline mid-term strategy of “Future Logistics Enterprise.” FLE is an integrated set of six collaborative initiatives: depot maintenance partnerships, condition-based maintenance +, total life cycle systems management, end-to-end distribution, executive agents and enterprise integration. The completion of phase one of the FLE occurred in May



2001 with the identification of critical goals: decreasing the logistics footprint, defining the required relationships of the supply chain, and increasing asset visibility. In October 2003 the FLE was renamed to “Force-centric Logistics Enterprise.” As the Memorandum from the former Deputy Under Secretary for Logistics and Materiel Readiness, Ms. Diane Morales, to the Joint Logistics Board stated, “we will continue to develop knowledge-enabled logistics through our continued work with the Services, the United States Transportation Command, the United States Joint Forces Command, and the Defense Logistics Agency on implementing the Logistics Enterprise Architecture, and with additional tools such as Radio Frequency Identification Tags and Unique Identification.”

The transformation of weapons systems support is occurring through the pursuit of Performance-Based Logistics (PBL). The service providers are managed according to the performance-based agreements and a support environment that should maintain long-term competitive pressures. The program manager (PM) is responsible for total life cycle systems management. The PM manages integrated logistics chains across government and industry that focuses on system readiness and customer service. New partnerships are being developed to allow for the best-value providers selected from government, industry or government/industry partnerships. During FY 2002 there were 57 PBL implementations, FY 2003 increased to 71, FY 2004 had a projection of 85 and FY 2005 projects 92.



Likewise, in adapting the idea of network-centric operations, the Services started work on such initiatives as the Global Combat Support System. The GCSS concept provides the joint warfighter with a single, end-to-end capability to manage and monitor units, personnel, and equipment from mobilization through deployment, employment, containment, redeployment, and demobilization. The GCSS should provide the logisticians with the connectivity they desperately desire. It should also support the development of a logistics common operating picture.

As part of the transformation to a more networked environment, inclusive of the logistics process, the DoD has communications initiatives underway that begin to link forces across Service lines and mediums. For example, the Global Information Grid is intended to allow for integrated, interoperable, network-centric and knowledge-based warfare for the Services. The communication aspect should be buttressed with the development of the Global Information Grid Bandwidth Expansion (GIG-BE) program. It reached initial operational capability in September 2004 and is scheduled to reach final operational capability by September 30, 2005. The goal of GIG-BE is to “create a ubiquitous ‘bandwidth-available’ environment to improve national security intelligence, surveillance and

reconnaissance, and command and control information-sharing.”¹⁶ The GIG-BE is also fully supportive of DoD and Service-wide investments in enterprise computing. It should allow the logisticians to connect and send data with the necessary speed.

Further support exists within the G-4 strategy to ‘connect the logisticians.’ Initiatives, such as the Battle Command Sustainment Support System, are intended to integrate situational awareness of key Combat Support System mission areas of arming the force, fueling the force, manning the force, fixing the force, and moving the force. However, continued coordination between leadership will be instrumental to achieving proper interoperability and inter-connectivity between all the Services and Agencies; subsequently ensuring adequate reach-back of the logisticians in the field that are separated from the established infrastructure.

DoD continues to focus on the overarching concept of Sense & Respond Logistics. S&RL envisions a network-centric logistics system that can respond to changing demands, and rapidly and accurately deliver support when and where needed. The central concept undergirding S&RL is to avoid the two problems of ‘Iron Mountains’ or insufficient supply through the use of modern sensor, communications and inventory control systems.

The DoD and the Services made a number of efforts to streamline and modernize the logistics system in the period from Desert Storm to OIF. However, these efforts seemed to hinge mainly on creating a networked architecture and ridding the Services of legacy systems within internal stovepipes — even though the talk was always of jointness and interoperability.

Ultimately, as the lessons of OEF and OIF show, the transformation of military logistics must create a seamless system that extends from the factory or depot to the foxhole, airfield or ship and back again. Beyond that, the system needs to extend to the cockpit, the bridge and all other elements of the joint and combined forces. Logistics cannot be treated as an afterthought. Properly organized, managed and supported, a modern logistics system is a potent force multiplier.



From the Six Sigma approach of Jack Welch’s General Electric to Toyota’s notion of ‘just-in-time’ to the present successes in supply chain management (SCM) exemplified by UPS, the private sector seems light years ahead of the military. This is not because SCM in the civilian world is easier than it is for the military. It is because the private sector is serious about logistics and has spent the requisite time and resources to get it right. These developments can be traced to the 1980s recognition that logistics is no longer only the concern of mid-level management but rather an important ‘C-level’ function.

Much as the 1980s were pivotal years in the transformation of the United States Armed Services, it was also for key companies who came across new technologies and strategies for

manufacturing to decrease their costs and be more competitive. It is in this era that the strategies of “just-in-time manufacturing, *kanban*, lean manufacturing, total quality management, and others became very popular, and vast quantities of resources were invested.”¹⁷ With these strategies implemented, companies reduced manufacturing costs to such a level that they are as low as practically possible. Thus, the companies began turning to SCM as the next layer to better efficiency, higher profits, and increased market share.

These same companies maximized their returns as a result of streamlining and retooling the manufacturing process, utilizing the Internet and e-Commerce, and taking advantage of transportation industry deregulation and new transportation modes. Unfortunately, while maximizing returns, the logistics process became more complicated. Therefore, the 1990s saw companies beginning to analyze and retool the supply chain by using Enterprise Resource Planning (ERP) solutions. The change debunks the notion of having each facility or party within the supply chain making decisions without regard to their implications on other partners in the chain.¹⁹ And those that were most successful in implementing an ERP not only removed legacy systems and multiple domains from the enterprise, but also implemented process change in conjunction to the technology insertions.²⁰

The DoD should heed the lessons from private industries’ efforts at ERPs and not have selection biases towards those that were implemented successfully. As one study explained that ERP implementation, on average, took twelve to thirty-six months and “had a total cost of ownership of \$15M, and rewarded the business with an average negative net present value of \$1.5M...K-Mart, for instance had to write off a \$130M ERP investment.”²¹ On the other hand, successes did exist with the Nestle Corporation, which claimed that “ERP has saved it \$325M.”²² Last, success or failure, private industry continues to develop efforts to improve its logistics process. They have completed the grunt analysis that created a strong foundation on which to further streamline the logistics process.

The potential solutions are limitless, especially with the advancements in information technology and the Internet. The DoD, Services and Agencies in tandem and in partnership with private industry can truly develop some amazing processes and strategies to satisfy all goals. The question now remains, how far can the partnership go? There is value to partnerships with companies like Maersk, who are able to provide cargo routing from the front end (warehouse,

supplier, etc.) to the furthest point possible (foxhole, distribution center, etc.). They have mastered techniques in logistics to alleviate many of the artificial seams created by the DoD. For example, Maersk Global Intermodal Service shipped over 19,000 forty-foot equivalent units (containers) of military cargo from the U.S. to the Middle East in 2003, 17,000 in 2004 and over 7,500 during the first five months of 2005. Similarly, UPS pioneered the processes to support rapid worldwide package delivery. As discussed below, engagement of private industry by the DoD is crucial.



Precedent already exists for private industry to be completely responsible for the logistics of an operation, e.g. the Logistics Civil Augmentation Program. However, in OIF new questions were raised that were not a prior concern with these contractors on the battlefield. Assuming a continued partnership with all logistics controls, especially distribution through to the foxhole resting in private industry's hands, is there a need to separate engagements and operations where they cannot provide that service? Is there a difference between 'hot-wars,' 'hot-stabilizations' and 'standard stabilization' operations? Congress and industry, specifically within the realm of contracted security, are beginning to tackle the issue of contractors on the battlefield. Yet more work remains to be done. Issues such as the application of the Geneva Convention protections to contractors, applicability of life insurance, chain of command, etc., remain ambiguous. In passing statutes and legislation, neither Congress nor the DoD should forget the contractors that fulfill critical logistics functions.



LOGISTICS TRANSFORMATION FOR THE FUTURE FORCE POST OEF/OIF

OEF and OIF were the first major engagements of a semi-transformed supply chain that not only decreased the size of the footprint and 'Iron Mountain' of supplies, but also brought some degree of visibility to the system. Though the logistics system had some failures, it was a relatively successful operation given the austere conditions of the theaters. However, many of these successes were due to the heroic efforts of the soldiers on the ground, who were ready and prepared to improvise and overcome the challenges they faced. These heroic efforts are characteristic of the logisticians from conflicts past.

It is easy to view OEF and OIF as absolute failures in logistics operations, just open the newspaper. But there are certain facts that need to be kept in mind before being overly critical. First, OEF and OIF were fought in austere conditions without the mobilization effort characteristic of World War II, Vietnam, Desert Storm, etc., with the Combatant Command only requiring 4-6 days of supplies on hand, unlike the minimum 30-40 days required before. Second, the battlefield was anything but traditional – it was non-linear and non-contiguous. The supply lines were not operating in a conventional 'rear' environment.

Even with the effort to move away from 'Iron Mountains,' the sheer amount of materiel that was produced, transported and distributed to the Middle East was overwhelming. As a small slice, the 13th Corps Support Command drove more than 640 million total miles or 26,000 + trips around the world. The Army Materiel Command produced more than 140,000 bombs and increased production of small arms rounds to maximum capacity of 1.2 billion rounds in FY 2004.²³ There was visibility of the supply line to the port of debarkation. But as mentioned above, visibility was lost due to a lack of data integrity, numerous seams and repacking of pallets without incorporating the necessary elements for TAV. The infrastructure was still immature. And when incorporated with the actions of other units, Agencies, and Services it is more realistic to not call OEF and OIF failures. Rather, problems arose that were dealt with in a heroic manner and lessons are learned. It is from these lessons that numerous initiatives are taking



shape, in addition to those that were begun after Desert Storm and Desert Shield.

At the same time, these problems could have been catastrophic. During the initial stages a vast bottleneck was created at the ports of debarkation, with CENT-

COM lacking the adequate resources to properly unload, sort and transport the supplies. Even though there was the highest level of visibility with supplies coming into the area of operations, visibility was lost upon the cargo being unloaded from the ships. The logisticians were still blind to the needs of the forward troops, and required them to push forward supplies that they *thought* were necessary. The blindness was also a problem for the logisticians in the last tactical mile; they were not able to see which of their orders had been placed, where the order was in the supply chain and when the necessary order would be received. This resulted in numerous redundant orders being placed. The logisticians lacked trust in the supply system and the infrastructure was not there for a proper communications system.

All relevant parties recognize the need to streamline the logistics system, the importance of jointness, the value of adopting industry standards, best business practices and the implementation of technological innovations.²⁴ This recognition is highlighted in numerous strategic documents such as *Sea Power 21*, the Army G-4's *Delivering Materiel Readiness to the Army*, the Air Force's *Expeditionary Logistics for the 21st Century (eLog21) Campaign*, etc. The DoD's *Logistics Transformation Strategy* articulates the critical attributes of a transformational logistics system. The attributes are derived from the Joint Operations Concepts and focus on logistics support for the future force operations that are "continuous and distributed, across the full range of military operations."²⁵ The specific attributes are: fully integrated, expeditionary, networked, decentralized, adaptable, effective, reliable and affordable.

In 2003, the Commander of TRANSCOM was designated the Distribution Process Owner (DPO) by Secretary of Defense Rumsfeld. The reason for this change was to optimize distribution and transportation to minimize hand-offs and materiel handling points. The DPO is supposed to serve as the single entity to execute the strategic distribution system. The DPO's field of regard extends from source of supply to a point forward in a theater as defined by the regional Combatant Command. However, its actual span of command is much less, creating logistics seams and the prospect for conflict and confusion. The DoD's plan is to design one enterprise architecture for the end-to-end process, establishing business rules and performance metrics to link sustainment and distribution systems into a data warehouse where requirements are visible to distribution system customers. Without strong and continuous support from DoD's senior leadership, a single enterprise architecture cannot be achieved.

The system is strengthened by the growing and strong partnership between TRANSCOM and the Defense Logistics Agency (DLA). The TRANSCOM/DLA partnership allowed and paved the way for the establishment of the first Deployment and Distributions Operation Center (DDOC) in CENTCOM. It was established to improve logistics support in theater with a purpose of identifying efficiencies and effectiveness in the DoD distribution processes for both inter- and intra-theater, and link the strategic logistics systems to the operational and tactical systems. The DDOC was successful in breaking the bottleneck that existed in the ports, establishing the shipment of pure pallets to theater and increasing the visibility and trust in the sup-

ply chain. This was reinforced technologically when in January 2005 the DoD mandated the use of RFID tags on all packages.

Even with these new initiatives or retailoring of old programs to incorporate the lessons of OEF and OIF, issues still remain that need resolution. The system is still stovepiped and total interoperability is a far off hope. On the field, interoperability was successful in large part to the Marines acquiring the Army's systems for use in theater, not because those fielded for the Marines were able to connect to the network accurately. What remains unsettled is not the need for logistics transformation or even the basic strategy that should be pursued, but rather, *how* to proceed.



INSIGHT INTO THE LOGISTICS TRANSFORMATION

It is true that the military logistics system cannot be a clone of those employed in the commercial world. One of the unique challenges faced by the logistics system can be illustrated by the following example. Assume that a business' core competency revolves around moving material from vendors to retailers during the Christmas season and that this business is the *only one* that is able to provide the needed service and has no competition. Now imagine that a year goes by and there is no Christmas. Then, another year passes with no Christmas, then another year and another, for eight years there is no Christmas. Over those years, with its core competency under performing, the vested parties will require the business to streamline its capabilities and decrease overhead — pressures to downsize. More than likely it will re-structure its agreements with vendors; lay off employees; delay modernization of technologies and business processes; liquidate excess equipment, etc. After a decade of trimming its business process, the company is told that Christmas is occurring this year, in three months time, and that it will be the highest volume ever seen. Unfortunately, the business has relinquished much of its surge capacity and knowledge base over the decade of pressures to decrease costs.²⁶ This is the situation that historically confronted the military logisticians in their peacetime preparations for wartime deployment.

What is even more challenging for the military is that unlike the private sector, Christmas may not take place in December. It may not occur in the same place each time. The kinds of festivities to be held and gifts to be purchased may differ radically from one Christmas to another. In peacetime, the U.S. military experiences external pressures for downsizing that are similar to those that confront the private sector. It went through a decade without a major operation, i.e. the time from Desert Storm to the Global War on Terror (GWOT). These challenges were somewhat overcome by the military for the GWOT and subsequently OIF; however it was not without some major hiccups. This was especially true for the logistics process and the logisticians. Relationships with vendors were in disarray. Procurement of munitions was low and therefore the arsenals had a difficult time surging to meet the demand, not to speak of their antiquated production equipment. Simply stated, it was difficult to justify the costs in the inter-war years.

The experience of peacetime operations does provide some benefits however, and the DoD is very familiar with the pressures to cut costs, decrease manpower, etc. But after all these years the DoD should know to take these external pressures into account when planning to transform the force. To recognize that in five, ten, fifteen years, the military might be on a hiatus with no major engagement on the horizon should be a natural assumption. The transformation of the logistics process, when completed, should be able to surge at the time required without the consternation that existed for the GWOT. Will that be possible?

The most important question is, will the future force be interoperable, joint, agile and mobile when the current set of initiatives is fully implemented? At first glance, one would answer with an emphatic “yes,” especially given the rhetoric surrounding the programs. All make some mention of jointness and interoperability. However, allowing the status quo to continue without modifications will not resolve the problems. The lack of resolution is not only a waste of finite resources but could also cost lives in battle because logisticians will be required to jury rig systems and recreate the heroic efforts of the past. Investment in technology is a vital aspect of

transforming logistics. Areas for investment include communications capabilities, sensors and tags, enterprise software, change management and diagnostics. ERP solutions and e-Commerce create a ubiquitous data environment in which the system is no longer just a collection of parts. The Lexington Institute study *Logistics Transformation: Next Steps to Agile Supply Chain Integration* highlights the difficulties in creating a standard data environment and interoperable e-Commerce or ERP solutions.²⁷ This remains a concern given the numerous ERP initiatives that exist in each of the Services, Agencies and DoD. Likewise, the DoD, through the Defense Information Systems Agency’s eBusiness Applications Division continues to develop avenues for e-Commerce, specifically the Electronic Commerce/Electronic Data Interchange. EC/EDI has spawned several capabilities such as the Federal Technical Data Solution, which allows authorized users access to sensitive procurement information. Unlike the private sector, DoD e-Commerce is still at its infant stages. Without the standardization of data requirements, implementation of ERPs and clear process ownership, the DoD and Services



will not be able to take full advantage of e-Commerce to the extent that private industry and some Allies have.

Significant additional investment in both air and sealift, particularly as the U.S. military becomes more CONUS based, is required. In Iraq, airlift of supplies has relieved some of the burden on ground-based logistics units while also reducing the risk to U.S. personnel. Transformational sealift, including both high speed vessels and redesigned maritime prepositioning ships are required to provide both speed and flexibility. Logistics transformation is about much more than technology. Cultural and structural blockages to logistics transformation still exist within the DoD. The private sector understands that the existence of multiple logistics stovepipes hinders the required level of efficiency. And yet, within the Services there exists hundreds of initiatives which create the potential for real confusion, duplication of effort and delay, as the following example with RFID tags highlights:

During [OIF], containers arrived in theater with [RFID] tags carefully mounted and full of data on what was inside the containers. However, no one was at the port to forward the containers to their correct destinations when they came off the commercial vessel, so all that labeling work was a wasted effort...adding technology without first implementing the right organizational and doctrinal changes only means that we know more quickly that we're in trouble – and we have no way to fix it.²⁸

Another area of concern is the ability of TRANSCOM to take command of the supply chain as the DPO. TRANSCOM's authority as DPO rests on a directive from the Secretary of Defense. However, this memo does not define the breadth or depth of the distribution process. It does not articulate how much of the supply chain is under TRANSCOM's aegis and it does not specify the DPO's authorities, controls and budget powers. Therefore, it is left to the will and strength of the Commanding General of TRANSCOM. By its actions, TRANSCOM has sought to extend its authority over the supply chain and is attempting to achieve budgetary authority. But this could change under less aggressive leadership at TRANSCOM. The chain of command has been created without a binding statutory resolution. It is in these instances that the creation of some sort of Logistics Process Owner is absolutely essential.

Direct comparisons to the private sector are dangerous. The DoD is not Wal-Mart. Yes, certain commonalities do exist with the complex sourcing networks, global missions, large volumes of materiel and the high dependency on commercial logistics service providers. But, there is no private enterprise that matches the size of the DoD, resulting in the need to not blindly accept business best practices. This is clearly exemplified by the scalability issues when the DoD purchases commercial off-the-shelf software. Furthermore, resting all transformations on the private sector efforts of large corporations will result in a selection bias. As articulated above and in the Lexington Institute study *Logistics Transformation: Next Steps to Agile Supply Chain Integration* the private sector, too, struggles to create and maintain a transformational supply chain and has not had an easy time making adjustments.²⁹

Nevertheless, there are many lessons learned by the private sector and techniques it has developed that are applicable to military logistics. Some of these could even address the 'Christmas' challenge. For example, change management and structural reorganizations are necessary components of transformation and require resources for successful completion. These changes should precede investment in new technologies. Another example is the need for a single 'process owner' that has responsibility for the supply chain from end to end.



Corporations understand the value of engaging their logistics providers and doing ‘war planning.’ Wal-Mart and UPS excel in engaging suppliers and customers. UPS continuously does the kind of contingency planning that allows for rapid responses to changing conditions. In their planning efforts corporations engage in serious discussions with third-party logistics providers concerning sourcing, distribution strategies, SCM contingency planning, etc. The DoD also excels at ‘war-planning.’ However, it leaves SCM and distribution strategies as an afterthought without effectively engaging private industry in the strategic planning. The DoD would benefit by bringing in its vendors of both supplies and services to the table and thus avoid some of the hiccups seen by the ad-hoc integration that has taken place in the GWOT; especially since private industry is more than willing and eager to engage in this planning.

In the spirit of jointness more efforts need to be created to take advantage of ‘lazy’ or underutilized assets. This can occur when the theater commanders have a full view of the battlefield and the requirements. One such positive action in OIF was having Navy cargo handlers at the port of debarkation assisting the Army in offloading and sorting vessels of shipments. Likewise, the Navy welders were in the trenches with Marines and Soldiers to weld on the armor kits and jury-rigged armor used on many of the tactical vehicles. This further highlights the reality that much of the transformation can be supported by a process of coordination between the Services in the theater. Brand new technological solutions are not needed. Such a coordination effort could be replicated in the rear and in Joint Training, Tactics and Procedures.

The Services and DoD are not expending much energy or discussion regarding resetting the force and/or retrofitting. This was a huge and costly endeavor after Desert Storm. Presently, the Services and DoD received billions in supplemental funding to aid in this transition. Assuming adequate steps are taken to increase trust in the supply line, there will be less redundant equipment that requires reset post operations. However, ownership of this process needs to be clearly articulated.

Finally, the 2005 QDR and 2005 BRAC processes are exceptional catalysts for improving not just force structure and strength but also the logistics process. By consolidating supply functions into certain organizations and bases, i.e. DLA, efficiencies can be realized.

The 2005 BRAC process is taking into account the logistics transformational initiatives in the recommendations presented. One objective is the creation of an environment that will most efficiently and effectively support joint operations while incorporating best business practices. Likewise, the analysis and recommendations completed by both the SSJCSG and the Industrial Joint Cross-Service Group for the 2005 BRAC have aptly laid the groundwork while recognizing the importance of an increased role of the private sector and a streamlined logistics process.

In completing the analysis, the SSJCSG noticed the difficulties that OEF and OIF presented in DoD's surge capabilities. Therefore, its deliberations "assumed that 20 percent at the high end of surge was sufficient for the 20-year planning horizon" with the requirements posed by OEF and OIF used as the baseline capacity rates.³⁰ This should allow for the DoD to avoid a recurrence of the same problems exhibited in OIF by the need to surge after a decade hiatus. One outcome of the SSJCSG process was the decision to maintain most of DoD's organic supply base, depots and arsenals that have proven so valuable in meeting surge requirements arising from OEF and OIF.

The recommendations, as articulated, could be enacted and would increase the effectiveness of the future joint force. They rest on the pillars of a centralized process, increased operational efficiency and improved partnerships with private industry. For example, privatizing the function of supply, storage, and distribution of tires, packaged petroleum, oils and lubricants will not only free up resources but also allow for increased trust and effectiveness. This is an exceptional opportunity that should be seized; while also showing that private industry is better suited to perform these functions and possibly others like it. Likewise, the realignment and relocation of procurement management and the supply function for Depot Level Repairables to DLA is necessary in deconflicting logistics ownership while taking the appropriate steps to define a single process owner.

Unfortunately, the BRAC process failed to equate logistics on the same plain as other required functions for warfighters. As Vice Admiral Lippert of the SSJCSG testified, "it was our military judgment that the logistics functions of supplying, supporting, and distributing the many items our forces need are follower functions."³¹ It is this view of logistics, and its relegation to a lower-level priority that resulted in many of the difficulties highlighted by present operations. The implications of this assumption in the recommendations for the BRAC process are not yet clear and probably will not be for decades to come. It would, however, be beneficial for the BRAC Commission to re-evaluate all the SSJCSG's recommendations, with logistics as one of the most important functions to warfighting and not a follower function. If nothing more, it would re-affirm the efforts of the logisticians and COCOMs who recognize that logistics needs to be incorporated during the early stages of planning.

The QDR needs to make every effort to validate some sort of process owner. Given the uncertainty of threats and changes to the battlefield that is conceded by the QDR the present structure should not hold for the future. The QDR must continue with the momentum the logisticians have created, by continuing to demand an agile, interconnected, interdependent and interoperable joint force even within the domain of logistics. It should also maintain the present capabilities of the industrial base, partnerships with industry and look to expand the role of private industry.



THE WAY FORWARD

Historically, military logistics has only received notoriety during a conflict when the ‘failures’ are well publicized and readily available. The end of combat operations has consistently been followed by a loss of energy and enthusiasm to retool the logistics processes. Efforts have been underway by the logisticians but without the adequate support of DoD leadership and Congress. Given the uncertainties regarding the location, timing and duration of future combat operations, DoD senior leadership needs to take this opportunity to fully transform the logistics process. They have made great strides in purchasing and developing new systems and software for logistics. The way forward requires not only for there to be continued procurement and development of systems but also continued changes to the organizational structure and changing the way the DoD and Services do business.

First, the DoD and the Services must devote adequate resources to support logistics transformation initiatives that modernize the business process and enhance the total joint force. The history of logistics reform efforts has been marked by initial commitments and enthusiasm that wanes as the memory of conflicts recede and current budget difficulties dominate resource considerations. This time, a sustained and predictable budgetary allocation needs to be provided to fund logistics transformation.

Second, DoD needs to define an overall transformational logistics architecture. This would provide the standardization of processes, protocols and standards necessary to remove remaining seams in the system. To achieve this goal requires continuing top level leadership and commitment to creating a transformed logistics system. The Office of the Secretary of Defense and the Services should place the working products under a rubric of focus areas, as the Army has done in *Delivering Materiel Readiness to the Army*. These initiatives, such as continued procurement of ERP solutions and resourced change management, are essential to retooling the logistics system; especially if the recognition of needing to walk before one can run is present. Certain elements need retooling now, and it is not necessary to look to *potential* and *unproven* technological solutions ten to fifteen years down the line to solve the current problem. With that, there needs to be a scrapping of redundancies. For example, there is no need for both the Office of Force Transformation and the U.S. Army to be expending valuable resources in developing Sense and Respond capabilities. But there is the need for someone to be in charge and held responsible for the overall process — the Under Secretary of Defense for Acquisition, Technology and Logistics.

Third, there needs to be resolution and discussion to clearly identify a single process owner for logistics. This discussion should be open to all possibilities, including the creation of a logistics command in the same spirit that STRATCOM is responsible for C4ISR. Simply, who runs logistics? How much control and authority would they have? How far is that control, defined from both the front end of the logistics process to the last tactical mile? The importance of ownership is to ensure the various initiatives are completed, to ensure implementation of joint resolutions and discussions and to achieve visibility across the entire supply chain.³²

Establishing a centralized authority could overcome the numerous little “t” transformations that are occurring within Services and Agencies that are still stove-piped. A responsible Agency or

command also must have budgetary authority over the investments in logistics systems and capabilities. This is critical in order to create and enforce joint requirements. Without this budgetary authority, any central command will be powerless to effect true change. Centralizing authority would also streamline the multitude of financial systems and lack of clarity within the financial process.

Fourth, DoD and the Services need to look to expand their relationships with the private sector. Companies such as UPS would be exceptional candidates for taking on responsibility of distribution inside CONUS. Maersk continues to provide the DoD with distribution services throughout the globe and has expanded this offering to include their commercially-proven SCM capabilities — eliminating seams and enhancing TAV. Likewise, expanding the Civil Reserve Air Fleet and allowing the procurement of civilian versions of the C-17 to U.S. companies would not only lighten the load of TRANSCOM but also decrease the cost of each plane and increase the capabilities afforded to the military. There is a history of strong strategic partnerships with the private industry, as seen at the depot and arsenal level that should be modeled and evaluated for the logistics process. This will increase the efficiency and trust of the supply chain while decreasing the resource burdens placed upon the DoD during inter-war years.

APPENDIX A - DEFINITIONS OF LOGISTICS

David Simchi-Levi, Philip Kaminsky, & Edith Simchi-Levi. *Managing the Supply Chain: The Definitive Guide for the Business Professional*, McGraw-Hill Companies, New York, 2004.

The *supply chain*, which is also referred to as the *logistics network*, consists of suppliers, manufacturing centers, warehouses, distribution centers, and retail outlets, as well as raw materials, work-in-process inventory, and finished products that flow between the facilities. (p.1)

Supply chain management is a set of approaches used to efficiently integrate suppliers, manufacturers, warehouses, and stores so that merchandise is produced and distributed at the right quantities, to the right locations, and at the right time in order to minimize system wide costs while satisfying service-level requirements. (p.2)

Definition of *logistics management* given by the Council of Logistics Management is: “The process of planning, implementing, and controlling the efficient, cost-effective flow and storage of raw materials, in-process inventory, finished goods, and related information from point of origin to point of consumption for the purpose of conforming to customer requirements.” (p.3)

Joint Publication 1-02, Department of Defense Dictionary of Military and Associated Terms.

Logistics - The science of planning and carrying out the movement and maintenance of forces. In its most comprehensive sense, those aspects of military operations which deal with: design and development, acquisition, storage, movement, distribution, maintenance, evacuation, and disposition of materiel; movement, evacuation, and hospitalization of personnel; acquisition or construction, maintenance, operation, and disposition of facilities; and acquisition or furnishing of services.

Joint Publication 4.0, Doctrine for Logistic Support of Joint Operations (6 April 2000).

The science of logistics concerns the integration of strategic, operational, and tactical sustainment efforts within the theater, while scheduling the mobilization and deployment of units, personnel, equipment, and supplies in support of the employment concept of a geographic Combatant Commander. The relative combat power that military forces can bring to bear against an enemy is constrained by a nation's capability to plan for, gain access to, and deliver forces and materiel to the required points of application across the range of military operations.

- Supply is the function of acquiring, managing, receiving, storing, and issuing the materiel required by forces.
- Maintenance includes actions taken to keep materiel in a serviceable condition or to upgrade its capability.
- Transportation is the movement of units, personnel, equipment, and supplies from the point of origin to the final destination.
- Civil engineering provides the construction, operation, maintenance, damage repair, and reconstitution of facilities, roads, and utilities and logistic infrastructure.
- Health services includes medical evacuation, hospitalization, medical logistics, medical laboratory services, blood management, vector control, preventive medicine services, veterinary services, and dental services.
- Other services are nonmateriel support activities provided by Service personnel and the logistic community that are essential to force support. For each of the above functional areas, the Combatant Commander should consider these four elements of the joint theater logistic process: procurement and contracting, distribution, sustainment, and disposition and disposal.

Historical Definition of Logistics by military historian Stanley Falk in *The Big L: American Logistics in World War II*, National Defense University Press: Washington DC, 1997, Alan Gropman, ed. (p.xiii).

Intermediate level: “Logistics is essentially moving, supplying, and maintaining military forces. It is basic to the ability of armies, fleets, and air forces to operate—indeed to exist. It involves men and materiel, transportation, quarters, depots, communications, evacuation and hospitalization, personnel replacement, service, and administration.”

Higher level: “...economics of warfare, including industrial mobilization, research and development, funding procurement, recruitment and training, testing and, in effect, practically everything related to military activities besides strategy and tactics.”

APPENDIX B - DISCIPLINES OF LOGISTICS

SOURCE	DEFINITIONS OF THE DISCIPLINE OF LOGISTICS
Short	Management of materials in motion and at rest.
Classical	Getting the right product, to the right customer, in the right quantity, in the right condition, at the right place, at the right time, and at the right cost.
Dictionary	The branch of military science having to do with procuring, maintaining, and transporting material, personnel, and facilities.
International Society of Logistics	The art and science of management, engineering, and technical activities concerned with requirements, design and supplying and maintaining resources to support objectives, plans, and operations.
Utility	Providing time and place utility of materials and products in support of organization objectives.
Council of Logistics Management	That part of the supply chain process that plans, implements, and controls the efficient, effective flow and storage of goods, services, and related information from point of consumption in order to meet customers' requirements.
Component	Supply management for the plan (inbound logistics) and distribution management for the firm's customers (outbound logistics) or material support of manufacturing and product support of marketing operations.
Functional	Materials requirements determination, purchasing, transportation, inventory management, warehousing, materials handling, industrial packaging, facility location analysis, distribution, return goods handling, information management, customer service, and all other activities concerned with supporting the internal customer (manufacturing) with materials and the external customer (retail stores) with product.
Common Cultural	Handling the details of an activity.

Taken from: Stephen Hays Russell, "Growing World of Logistics," *Air Force Journal of Logistics*, Winter 2000.

APPENDIX C - LOGISTICS TRANSFORMATION INITIATIVES

Air Force

eLog21 Campaign

It is intended to fundamentally revolutionize the way the logistics community conducts its day-to-day and strategic business. Its mission is to chart the course of transformation, leading Air Force logistics to streamline and modernize fundamental business practices. Some of the initiatives are “Logistics Enterprise Architecture,” “Portfolio Management,” and “Air Force Knowledge Service.”

Expeditionary Combat Support System (ECSS)

The ECSS is the Air Force’s COTS based system that will enable the *eLog21* future logistics vision by leveraging an ERP as its primary system. An additional objective is to retire the current legacy systems across the logistics domain.

Spares Campaign-Purchasing and Supply Chain Management (PSCM)

PSCM is intended to be a comprehensive approach that has emerged for linking supply chain management and strategic goals. The four prongs of the strategy are: (1) translating commercial PSCM concepts to the Air Force Environment, (2) developing PSCM implementation projects at three air logistics centers, (3) developing strategic alliances with the top Air Force suppliers, and (4) developing an e-business strategy to support supply chain management.

Army

Single Army Logistics Enterprise (SALE)

The Army’s enterprise resource planning (ERP) vision created by the DoD under agreement with the Army Chief of Staff to enhance the Army’s transformation to the Objective Force.

Logistics Modernization Program (LMP)

LMP is the Army system used to store logistics data pertinent to the operations of the Federal supply system. It is intended to be the replacement system for the Commodity Command Standard System (CCSS).

Battle Command Sustainment Support System (BCS3)

BCS3 is the Army’s maneuver sustainment C2 system used to fuse sustainment, in-transit visibility, and Force level information data to aid commanders in making critical decisions at all echelons for maneuver sustainment support. It is a technological insertion into the Combat Service Support Control System (CSSCS).

Defense Logistics Agency

Business Systems Modernization (BSM)

The initial focus of BSM is to replace DLA’s Standard Automated Material Management System with an expanded enterprise computing environment and COTS software.

Integrated Data Environment (IDE)

DLA and the Joint Staff are in the development phase of an IDE. The IDE is intended to be a complete integration engine that addresses business processes, data strategy, operations and technologies. The IDE should connect critical logistics functions within an interoperable technology infrastructure that improves data access, communications and cost savings.

Department of Defense Wide

Global Combat Support System (GCSS)

The GCSS concept provides the joint warfighter with a single, end-to-end capability to manage and monitor units, personnel, and equipment from mobilization through deployment, employment, sustainment, redeployment, and demobilization. The GCSS concept forms a family of systems to incorporate the individual Service efforts, resulting in the GCSS-A (Army), GCSS-MC (Marines Corps), GCSS-CC/JTF (Combatant Commander/Joint Task Force), etc.

Business Management Modernization Program (BMMP)

BMMP was developed to modernize business processes across the DoD. It is expected to provide accurate, timely, and reliable financial and managerial data to decision makers; interoperable Business Operation throughout the DoD by application of leading practices and a set of standardized and interoperable information systems.

Force-centric Logistics Enterprise, formerly Future Logistics Enterprise (FLE)

The FLE is an integrated set of six collaborative initiatives: depot maintenance partnerships, condition-based maintenance +, total life cycle systems management, end-to-end distribution, executive agents and enterprise integration.

Sense and Respond Logistics (S&RL)

S&RL envisions a network-centric logistics system that can respond to changing demands and rapidly and accurately deliver support when and where needed. It rests on the principles of a demand driven, distribution based supply chain management strategy.

Joint Staff

Joint Logistics Warfighting Initiative (JLWI)

JLWI is an effort to improve the logistics responsiveness to the requisitioning, distribution, asset visibility, and retrograde functions through the insertion of new and emerging technologies and business process improvements.

Focused Logistics

It attempts to address the following challenges: joint deployment/rapid distribution, joint theater logistics management, agile sustainment, operation engineering, information fusion, and multinational logistics coordination.

Navy/Marine Corps

Sea Enterprise

Sea Enterprise aims to create a culture of productivity while strengthening the culture of readiness. It should generate the resources necessary to augment the Navy's investment stream to implement Sea Power 21. It includes a family of logistics improvement initiatives such as "Virtual SYSCOM," "AIRSpeed" and "Legacy System Rationalization."

Marine Corp's Integrated Logistics Capability (ILC)

The ILC initiative was organized to plan the implementation of the next generation of core logistics business processes and supporting information technology infrastructure. It is the overarching initiative that incorporates initiatives that deal with organizational change, product life cycle support, and customer relationship management.

U.S. Transportation Command

Distribution Process Owner (DPO)

TRANSCOM has been designated as the DoD's Distribution Process Owner (DPO). The DPO is supposed to serve as the single entity to execute the strategic distribution system. The focus of the DPO extends from source of supply to a point forward in a theater as defined by the regional Combatant Commander.

Deployment and Distribution Operations Center (DDOC)

The DDOC is a joint TRANSCOM/DLA effort established to improve logistics support in theater with a purpose of identifying efficiencies and effectiveness in the DoD distribution processes for both inter- and intra-theater.

ENDNOTES

- ¹ See Appendix A and Appendix B for a listing of logistics and supply chain definitions.
- ² From *Word Origins and Their Romantic Stories* by Wilfred Funk, Litt.D., available at <http://www.hqda.army.mil/logweb/logistics.html>.
- ³ Alan Gropman, ed., *The Big L: American Logistics in World War II*, National Defense University Press: Washington DC, 1997, xiii.
- ⁴ Joint Publication 1-02, *Department of Defense Dictionary of Military and Associated Terms*, available at <http://www.hqda.army.mil/logweb/logistics.html>.
- ⁵ Joint Publication 4.0, *Doctrine for Logistic Support of Joint Operations*, (06 April 2000), available at <http://www.hqda.army.mil/logweb/logistics.html>. The full text of the definition can also be found in Appendix A of this study.
- ⁶ Joint Chiefs of Staff, *Joint Vision 2020*, US Government Printing Office: Washington DC, June 2000, pg. 30.
- ⁷ David Simchi-Levi, Philip Kaminsky, & Edith Simchi-Levi. *Managing the Supply Chain: The Definitive Guide for the Business Professional*, McGraw-Hill Companies: New York, 2004, pg. 2.
- ⁸ A complete discussion of the implications and results of the BRAC process as it relates to logistics can be found in the section “Insights Into The Logistics Transformation.”
- ⁹ Testimony of Vice Admiral Keith W. Lippert to the Defense Base Closure and Realignment Commission, *Federal News Service*, May 18, 2005.
- ¹⁰ Charles R. Shrader, *U.S. Military Logistics, 1607-1991, A Research Guide*, Greenwood Press: New York, 1992, pg. 9.
- ¹¹ David Schrady, “Combatant Logistics Command and Control for the Joint Force Commander,” *Naval War College Review*, Washington: Summer 1999, vol. 52, iss.3; pg. 49-75.
- ¹² Roger W. Kallock and Lisa R. Williams, “DoD’s Supply Chain Mandate: From Factory to Foxhole” *Supply Chain Management Review*, May 1, 2004, pg. 46.
- ¹³ David Schrady, “Combatant Logistics Command and Control for the Joint Force Commander,” *Naval War College Review*, Washington: Summer 1999, vol. 52, iss.3; pg. 49-75.
- ¹⁴ *Ibid.*
- ¹⁵ *Ibid.*
- ¹⁶ Defense Information Systems Agency, “GIG Bandwidth Expansion” available at www.disa.mil/main/prodsol/gig_be.html. Accessed 16 June 2005.
- ¹⁷ Simchi-Levi, et al. *Managing the Supply Chain...*, pg. 7.
- ¹⁸ David Simchi-Levi, Philip Kaminsky, & Edith Simchi-Levi. *Designing & Managing the Supply Chain: Concepts, Strategies & Case Studies, Second Edition*, New York: McGraw-Hill Companies, 2003, pg. XII.
- ¹⁹ Simchi-Levi, et al. *Managing the Supply Chain...*, pg. 11.
- ²⁰ Colonel Tom Hauswer, Colonel Jim Graham et al., “A Fully Integrated Global Strategic Supply Network – A Critical Enabler of DoD Transformation,” *Strategic Supply Industry Study*, Fort McNair: The Industrial College of the Armed Forces, National Defense University, AY 2003-2004. pg. 8.
- ²¹ Colonel Tom Hauswer, Colonel Jim Graham et al., “A Fully Integrated Global Strategic Supply Network – A Critical Enabler of DoD Transformation,” *Strategic Supply Industry Study*, Fort McNair: The Industrial College of the Armed Forces, National Defense University, AY 2003-2004. pg. 8.
- ²² *Ibid.*, pg. 9.
- ²³ “Logistics Facts,” *Army*, May 2005, pg. 64.
- ²⁴ Brim, Christine. *Logistics Transformation: Next Steps to Interoperability and Alignment*, Lexington Institute, July 2005. Available at www.lexingtoninstitute.org
- ²⁵ Department of Defense, *Logistics Transformation Strategy: Achieving Knowledge-Enabled Logistics*, 10 December 2004, pg. 22.
- ²⁶ We are indebted to Lieutenant General Christianson, Army G-4, for this analogy.
- ²⁷ Brim, *Logistics Transformation: Interoperability*.
- ²⁸ Walker, Colonel Glenn W. “Relearning Lessons Learned” *Army Logistician*, Fort Lee: Vol. 37, Iss. 1, Jan/Feb 2004, pg. 34.
- ²⁹ Brim, Christine. *Logistics Transformation: Next Steps to Agile Supply Chain Integration*. Lexington Institute. July 2005. Available at www.lexingtoninstitute.org.
- ³⁰ Supply and Storage Joint Cross-Service Group, “Summary of Selection Process.” 2004-5, pg. 4.
- ³¹ Lippert, *Federal News Service*.
- ³² Brim, *Logistics Transformation: Interoperability*.



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Printed in the United States of America
September 2005