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LOGISTICS VISIBILITY

ENABLING EFFECTIVE DECISION MAKING

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INTRODUCTION

The Joint Force Commander—and by extension their logisticians—requires timely, accurate, and relevant information to make effective decisions. This requirement is especially critical in the Joint Logistics Environment. The joint logistics community must continuously execute processes, effectively coordinate the allocation of limited resources, and clearly understand the supported joint commanders' requirements across the broad range of military operations. In order to effectively and efficiently execute these functions, joint logisticians must have visibility.

PURPOSE

This paper serves as a reference point for discussion, a framework for concept development, and an integrating tool for the countless efforts across Defense and industry to improve logistics visibility in the broadest and most holistic sense of the term. In order to scope this paper, we will focus our attention on the Joint Logistics Environment (JLE). This paper offers a proposed definition of visibility, highlights key issues and concepts for consideration, and offers ideas for future efforts based on an understanding of where we believe the most pressing requirements for visibility lie within the JLE. It is clear that complete system-wide access to all information is not attainable, or even desirable. Given this, we will also offer a framework that describes in broad terms the kind of visibility required by different elements within the JLE.

Current visibility definitions focus almost entirely upon asset visibility. In order to provide effective logistics support across the operating environment the joint logistician must “see” more than just assets. The logistician must fully understand the requirements for logistics support (who needs what?) as well as the resources available (what do I have to work with?) arrayed in time and space to meet those requirements. The logistician must also be able to monitor joint logistics performance within the JLE—are the logistics processes in place and working? Without this kind of knowledge, the logistician cannot plan or execute effectively or efficiently.

For the purpose of this paper, we have chosen to define logistics visibility as “**access to logistics processes, resources, and requirements to provide the knowledge necessary to make effective decisions.**” Processes, resources, and requirements are further defined below.

- a) Processes are defined as a series of actions, functions, or changes that achieve an end or result. Multiple processes occur across and within the JLE, such as depot repair, patient movement, force deployment, and the delivery of contingency contract support. Before we can effectively develop visibility applications, we must clearly understand the end-to-end processes that deliver an outcome for the joint force. Mapping these processes is critical to knowing where and when to place visibility “sensors” to give us the knowledge we need to enable the effective delivery of those joint outcomes.
- b) Resources can be summarized using the term “total assets.” It is defined as the aggregate of units, personnel, equipment, materiel, and supplies that are brought together in time and space to generate and support joint capabilities and their supporting processes. We must be able to see Service components, multinational, and other logistics assets in a way that provides integrated resource visibility to the Joint Warfighter.
- c) Requirements are defined as what the joint force needs to accomplish its mission. Requirements can originate from anywhere, and can result in a tasking for anyone in the JLE. Requirements also change over time based on plans, current operations, and a changing environment.

Collectively, visibility of processes, resources, and requirements comprise the information that logisticians need to accomplish their mission; without each of these “elements” they cannot apportion resources and prioritize effort. Logistics visibility provides the ability to plan, synchronize, and monitor operations and processes to optimize outcomes. The ultimate effect we are trying to achieve is *sustained logistics readiness*.

Some think that the objective for visibility should extend across the entire logistics domain and should include complete real-time access for everyone within the system. While it is true that every aspect of the enterprise must be visible to planners, operators, or managers at some level, it is also clear that not ev-

quire visibility to enable effective control and to allow the optimization of processes against a desired outcome.

Resources must be visible by item, person, or unit individually or in some form of aggregation. In some cases, visibility by a discrete individual identity such as a serial number, lot number, national

basis of all our efforts across the JLE. Our customer is at the tactical level!

The *JFC's* ability to effectively execute their directive authority for logistics is completely dependent upon visibility. Without visibility into the JLE processes, resources, and requirements the JFC cannot effectively integrate Service component capabilities in order to achieve mission objectives.

The *Joint Logistician (J4)* is responsible for matching resources against anticipated requirements to provide supportability assessments to the JFC. The supportability assessment tells us if the JFC's operational concept can be sustained. In addition, as operational requirements change, the J4's ability to rapidly reassign resources against requirements is directly tied to visibility and is therefore invaluable to the JFC.

Services are responsible for delivering ready forces and equipment to the JFC. At the strategic level this mission demands different information and uses different processes than at the operational or tactical levels. In order for the Services to accomplish their mission, they also need visibility of the JFC requirements to ensure that they deliver the right forces and equipment necessary for mission accomplishment. The Services also need visibility into the processes that support their theater component efforts.

Planners and decision-makers at the *DOD staff* level require visibility to provide responsive and relevant policy guidance and to ensure that the Department's strategic resources are applied appropriately to meet all JFC requirements. Their goal is to ensure that resources are utilized to achieve outcomes that are both effective and efficient.

Our *interagency, multinational, and commercial mission partners* require visibility of processes, requirements, and resources necessary to support their participation in our operations.

Ultimately, we need to develop or enhance systems, processes and tools for improving visibility in a manner that supports each of these user requirements.

Finally, the desire for information often drives users to want to see everything all the time. However, everyone in the JLE does not need to see everything all the time. Knowing what is really needed becomes the key to an information environment that effectively supports quality decisions.

everyone needs to be able to see everything all the time. At some point, too much information may be a hindrance and can actually detract from effective decision-making. Consequently, there are several key questions that a high-level consideration of visibility should address: Who among the members of the JLE needs visibility and why do they need it? What do they need to see? And finally, where do they need visibility? These questions have significant implications for systems design, operational planning and execution, and resource allocation.

WHAT DO WE NEED TO SEE?

The answer to this question depends upon your position within JLE—what the end user wants to see is different from what the manufacturer, supplier, or distributor wants to see. Each player in the JLE tends to see their visibility requirement as the visibility requirement for everyone. Our challenge is to provide the right kind of visibility across a very complex environment, to the right user at the right time. Below are listed the key areas where we need specific types of visibility.

Process visibility provides process owners and decision makers with the ability to evaluate the effectiveness of a particular process—“*Are we delivering what's expected?*” The deployment/redeployment process, the force reception process at a major port, or the depot repair processes are all parts of a system of systems that relies upon visibility for its effectiveness. Joint logisticians and process owners re-

quire visibility to enable effective control and to allow the optimization of processes against a desired outcome. *Resources* must be visible by item, person, or unit individually or in some form of aggregation. In some cases, visibility by a discrete individual identity such as a serial number, lot number, national stock number, social security number, or unit identification code is required. Some individuals or items are so uniquely important—politically, operationally, tactically—that, by their very nature, they require real-time, 100 percent visibility across the logistics enterprise. Examples might include fissionable material, human remains, or vaccines. In other cases, visibility of items, persons, or units in some form of aggregation is necessary to determine the status of a particular capability and its ability to achieve the JFC's mission. Examples might include a specific force module, a port opening capability, or a medical treatment capability.

Requirements must also be visible by item, person, or unit individually or in some form of aggregation. Ultimately, visibility of requirements is necessary to initiate supporting efforts across the JLE. In most cases, the JFC is responsible for defining those requirements. The Services, supporting COCOMs and Defense Agencies require visibility of those requirements to better support the JFC's mission. The DOD must have visibility over those requirements to ensure DOD resources are used effectively and efficiently.

WHO NEEDS VISIBILITY AND WHY?

The answer to this question is fairly straightforward. Everyone within the JLE has a requirement for some type of visibility for a variety of reasons. However, *the ultimate purpose of our effort to achieve better visibility resides at the tactical level, where operational requirements form the*

WHERE IS VISIBILITY NEEDED?

As noted previously, the answer to this question depends upon where you sit. An end user will mainly want to know when they will receive their item, and be less concerned about every step along the way to

final delivery. Broadly stated, visibility can be applied while elements are *in-transit*, *in-storage*, *in-process*, or *in-use*. These terms broadly describe visibility needs in terms of the item's location in the JLE.

- a) *In-transit* refers to assets being shipped or moved from origin (such as commercial vendors, units, storage activities, or maintenance facilities) to a destination (such as units, storage activities, or maintenance facilities).
- b) *In-storage* refers to assets stored at unit, DOD, or commercial sites and disposal activities.
- c) *In-process* refers to assets being acquired from sources of supply, but not yet shipped, or assets being repaired at intermediate- and depot-level organic or commercial maintenance facilities.
- d) *In-use* refers to those items that are being used for their intended purpose.

These terms help us define where visibility is needed. There are still some other factors we must consider when defining visibility.

GENERAL

Although we have specified visibility in terms of who needs to see “what” and “where” they need to see it, in practice there are no clear lines of delineation between different levels and activities with regard to visibility requirements. Moreover, visibility priorities and needs may change over time or across the phases of an operation. For example, planners might see Joint Force requirements as their most critical need, but, during the sustainment phase of an operation, available resources might take precedence. During the initial phases of expeditionary operations, visibility of processes might be the greatest need to ensure that limited resources are being optimized as planned. That said, each of the three elements of visibility—processes, resources, and requirements—are needed to make effective decisions.

Even though there may be near-unanimous agreement that the single greatest gap in the world of defense logistics is visibility, there are several barriers that inhibit our efforts to enhance and share visibility. First, authoritative data are not always available to the joint logistician. The only thing worse than having no data is having two sets of data, and our

inability to provide trustworthy data impedes quality decision-making. Second, it is unlikely that we will have unity of command over the entire spectrum of joint logistics. One of our major challenges then is to achieve unity of effort without unity of command. This is a particular issue as we share, process, and integrate information across different commands, agencies, systems, and processes to develop a “common operating picture.” Another major dilemma is how to ensure adequate security for sensitive information while simultaneously offering the maximum possible transparency and ease of access to all members of the community. Operational partners, both inside the Department of Defense and outside, including international friends and allies, need to have confidence that their information will be handled properly by our systems. Finally, the desire for information often drives users to want to see everything all the time. However, everyone in the JLE does not need to see everything all the time. *Knowing what is really needed* becomes the key to an information environment that effectively supports quality decisions.

THE WAY AHEAD

It is difficult, yet essential, to address the way ahead for senior logistics managers, planners, and system developers to enhance visibility for everyone within the JLE, to allocate resources, and to focus our efforts to best achieve that effect. From our perspective, we see four areas where we think we can make major improvements to visibility in the months and years ahead:

1. Map the processes. Understand, define, and document the processes within the JLE—leverage the work ongoing with the Joint Logistics Portfolio Management Test Case and US TRANSCOM, the Distribution Process Owner (DPO). Use the BRAC initiative to further our understanding of the defense supply chain and develop an integrated process as an outcome from that effort.
2. Identify existing visibility capabilities. Continue to leverage efforts already underway within the DPO and other activities. Document and integrate those existing or emerging efforts that best contribute to increased logistics visibility. We must align visibility ca-

pability requirements with our process mapping to eliminate redundancies and gaps.

3. Develop a JLE data architecture. Under DISA lead, define the data framework, identify authoritative data sources, and influence and guide the joint logistics community's net centric data strategy efforts. Our goal is to develop a JLE Data Architecture Campaign Plan.
4. Deliver a Joint Logistics application (GCSS-J) that enables visibility for the joint logistician and facilitates visibility across the JLE. Ensure that GCSS-J provides an effective work environment to turn data into information, and enhances the ability of the joint logistician to effectively plan and execute joint logistics operations.

SUMMARY

Visibility is not an end in and of itself, but a means to make better decisions, gain efficiencies, and improve effectiveness across the JLE. It is also an objective toward which we will continually strive; as our environment continues to change there will always be additional information requirements or demands for enhanced timeliness and accuracy. As logisticians, we continually strive to improve the quality of our decisions and optimize the logistics readiness of the joint force. Enhanced visibility will lead to increased logistics readiness and improved user confidence.

We are all partners in delivering visibility across the JLE, and we all have a critical role to play in helping to deliver sustained logistics readiness to the JFC. The logistics community and those who interact with us must all work together to develop this capability to enhance support to the JFC and above all to the Service men and women who depend on us. **DTJ**

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