Required Delivery Date: A Truer Measure of Customer Support

Advanced Management Program

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TEAM 4GL INC

INTRODUCTION

DoD presently uses numerous metrics to measure the effectiveness of the supply system and in particular the effectiveness of inventory. However, these metrics do not adequately address responsiveness to customer's requirement for receiving a part by a particular date. Changes in one element of the supply chain are likely to effect the cost and/or performance of other processes (cannot optimize upstream metrics without knowing the ultimate goal downstream). We envision using Required Delivery Date (RDD) as a key metric that will improve effectiveness for both the end user and the supply system.

ENVIRONMENT

In Hau Lee and Corey Billington's article, "Managing Supply Chain Inventory: Pitfalls and Opportunities" published in the Sloan Management Review in the spring of 1992, it identifies the issue of inadequate definition of customer service. This is exactly what using RDD would address. In the article it states, "a supply chain must ultimately be measured by its responsiveness to customers." Although DoD uses measurements such as Logistics Response Time (LRT) and Customer Wait Time (CWT), Net effectiveness (NET), Point of Entry (POE) and stock availability being the most common metrics used today neither of these metrics addresses measuring the true need of the customer: having his material at the right time. Current use of RDD is generally not acustomer defined date, but is a system driven date that is used to determine transportation mode. If RDD was used as a customer defined field then the customer can

identify time critical dates to meet its oper ating needs and the supply system can better allocate its resources.

In many companies, the management metrics are internally focused (lead time, fill rate, or on-time performance). More meaningful metrics provide insight on how effectively key business processes haved met customer needsIMany commercial industries use customer service metrics. One example is SEMI/SEATECH which uses RDD as a report card on key suppliers. Appendix II describes the process they use in detail, but it essentially measures pieces late per parts millions.

PROPOSAL

The customer's priority and RDD directly affect the in transit time of a customer's order. With one-day depot processing, all orders are worked on the day the Material Release Order (MRO) is received by a defense depot. Therefore, the customer's priority and RDD most affects the delivery of the order. Using RDD, based on requisition priorities, would allow the system to use it assets (parts, warehouse and transportation) to optimize the response to the customer while minimizing costs. It is recommended that transportation costs be associated with the RDD, i.e. a short RDD might require premium transportation and the requisitioner would pay this added cost. Using a 'real' RDD would not change the priority system so that when assets are constrained and two requisitions have the same RDD the asset with the higher priority would be filled first.

COST-BENEFIT

Notional cost benefits will be discussed but do not currently have specific requisition data. An example would be a stock requisition from a forwarded deployed ship could be passed to the States for fulfillment and shipped surface at a cost of 8 cents per pound provided it would meet the RDD and the asset that was at the forward positioned theater distribution warehouse would remain available awaiting a direct turnover order (DTO) requisition, possibly even a CASREP. This leaves the forwarded positioned asset available for a more immediate RDD, reduces inventory forwarded deployed if the demand history shows demand for the item is for primarily for stock, open warehouse space up to other assets to better meet customers RDDs, reduces transportation costs due to less premium transportation being used, and elimates the redistribution order (RDO) to move assets to replace the issued under the current policies.

Other benefits of using RDD is that the information on when the part is needed would allow for better decisions on expediting repairs of assests, improve production decisions by vendors supplying parts under Direct Vendor Delivery (DVDs) or Performance Based Logistics (PBL) contracts because they now know when the part is needed. Use of RDD also allows for better management of movement of material to a ship because the RDD can be matched with the current schedule and the most economical means of shipping to that location can be utilized to position the material in the right location for pick-up.

The issues with using RDD include the customer gaming the system and inputting unrealistic RDDs, may improve but will not fix backorder issues, and the

biggest issue is the cost of inputting the new logic into the inventory management systems and updating the business rules. A special field for CASREPS will need added to the requisition so they can receive the special handling they do today.

IMPLEMENTATION STRATEGIES

- Will require incorporation into new systems such as DLA's Business Systems Modernization (BSM) effort as well as the Navy's Enterprise Resource Planning (ERP) initiative.
- Agreement among the services on business rules, particular allocation of transportation costs and stocking policies…stock verses DTO
- Change in transportation policy, proactive vice reactive, on how different delivery options are allocated. Currently there are various factors that are looked at to determine airlift or surface. DOD Defense Transportation Regulation DOD 4500-9, Part II governs the decisions, handling and shipping of government freight that goes through our military ports. There are various players along the way that make these decisions. Basically, the customer's priority, RDD, project code, item, weight, dimensions, origin and destination are factors that determine airlift or surface.
- Education of customers on the new system
- Change in behavior for customer
- Validate this with the customer…is this what they want

RECOMMENDATIONS

Implementing a true customer responsiveness metric, RDD, into the business logic and rules of DOD will improve its efficiency and give the customer a better understanding on how the system supports the customer. This new metric will also allow Service and DLA ICPs to more adequately measure its responsiveness to its customers.

BIBLIOGRAPHY

1. Managing Supply Chain Inventory: Pitfalls and Opportunities, Hau L. Lee and Corey Billington, Sloan Management Review, 1972.
2. DoD Defense Transportation Regulation DoD 4500-9, Part II, http://www.transcom**A**.mil/j4/j4lt/dtr.html

APPENDIX I

Current Guidance Used In Contracts For PBLs

The Contractor shall be responsible for prompt delivery of shipments. Metrics will be based on receipt of order to Freight On Board (FOB) destination timeframes. The Contractor will be responsible for maintaining at least a 90% fill rate. The applicable time frames for receipt and processing are:

Casualty Report (CASREP) and Priority 1 requisitions	24 hrs
Priority 2 and 3 requisitions	48 hrs
Requisitions with RDD equal to 999 (N_, E_), 777, 444, 555	48 hrs
Priority 4 through 8 requisitions	8 weeks
Priority 9 through 15 requisitions	12 weeks

CASREP and Priority 1 requisitions shall be processed Monday through Sunday. All other requisitions shall be processed Monday through Friday.
Orders placed by FMS and all other non-Navy entities will be included in the metrics calculations and averages unless the Contractor proposes a separate metric for these customers.

APPENDIX II

SEMI/SEMATECH put together a Value Chain Integration Performance Measurement Team. As a result of the VCI survey of key suppliers, and their recommendation to standardize the elements and definitions of supplier performance report cards, this team recommended using RDD as a performance metric.

Standard Delivery Performance Measurement:

Delivery for material or services delivered against Purchase Orders
Scope: The scope of measurement is from delivery of material from the supplier, to the customer's receiving dock, against Purchase Orders. This does not include On-time delivery for items that cannot be tracked against a Purchase Order due date.

Period: The time period for the measurement is usually based on a 13 week rolling average. A 12-month tracking, could be utilized for long-term assessments.

Method: The method used for calculating delivery performance is based on the receipt date at the customer site vs. the supplier-committed date on the purchase order. The calculation method is based on the number of items received on time (to the committed date) versus the total number of items that should have been received by the specific date. The measurement can be based on pieces (typical) or could included lots on-time as well. The measurement can easily be converted to a late or PPM rate.

Note: The allowable range of days per and post-committed date may vary with each specific customer (ie: 0 days late, 2 days early/0 days late, etc.).

Example: This example is based on 10000 total parts to be received in the measured time frame:

Pieces late: 40
Total pieces on-time: 9960
On-Time Delivery Performance = 9960/10000 or 99.6%
PPM Late = 4000 PPM (.4% late)

Authors:

Matt Knox
Joe Moore
Lawanda Morgan
Tom Satterly
Roland Wadge