Making Use of Real-Time Supply Chain Visibility Dashboards - A Case Study in Supply Chain optimization.

How to Maximize Supply Chain Visibility Solutions with Dashboards and Create Long-Term, Measurable Results

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White Paper

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Executive Summary

How can you manage what you can't see? Many organizations cannot see across their supply chain. Sure you have data, most likely plenty of data, but can you make clear, concise, instant supply-chain decisions based on solid, live information?

This paper is a study of using supply chain visibility dashboard technology to integrate and provide workflow based industry standard, metrics driven exception management to manage Performance-Based Logistics supply chain contracts.

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Introduction

Performance-Based Logistics (PBL) is widely recognized by the Department of Defense (DoD) in order to decrease product lifecycle cost, improve quality, and increase availability. For Performance-Based Logistics, "Performance" is defined in terms of military objectives such as:

- Operational Availability
- Mission Reliability
- Cost per Unit Usage
- Logistics Footprint
- Logistics Response Time

Instead of purchasing a finished product, the DoD sets contractual terms with a support provider to purchase a product or service based on predefined performance measurements over the full lifecycle of the product or service. The purchasing of a full lifecycle solution protects the DoD from accelerated product lifecycle costs once a product is delivered, and also forms more trusted partnerships with support providers over the life of the contract.

The performance of military objectives is usually established in Performance Based Agreements (PBA) and is arranged between the DoD and the support provider. The agreement typically identifies ranges of performance for each objective, in addition to thresholds. An example of a military objective in a PBA is the delivery of a particular weapons system that should have at least a 98% availability level over a defined period of time. Compensation is also defined in the PBA and is awarded based on compliance to the requested performance objectives.

Within a Performance-Based Logistics implementation, the Supply Chain Management solution is not only responsible for the development of a particular product or service, but also for the continual support and maintenance of the product or service over the long term. Performance metrics form the foundation of a Performance-Based Logistics implementation, therefore a Supply Chain Management strategy must be developed in order to support the supply and demand necessary to maintain or exceed the defined performance metrics. Since various conditions can change during the course of the contract, flexibility and adaptability are to be highly considered when developing the supply chain strategy. In order to ensure that a flexible, adaptable, and real-time Supply Chain Management strategy is established, Supply Chain Visibility applications can be implemented to provide a powerful way to support the unique demands of a PBL implementation. Supply Chain Visibility solutions provide end to end visibility of the supply chain and contribute to the overall supply chain strategy through the presentation of standardized metrics, monitoring of events, and mitigation of risks. Visibility applications can accumulate, aggregate, and display information via dashboards, alerts, or other methods to increase efficiencies in the supply chain on a strategic or tactical basis. In a PBL implementation, increased visibility to core measurements, performance and support objectives can be quantified, measured, and continuously improved.

Standardized Metrics

Metrics play a key role in the measurement and execution of Performance-Based Logistics implementations. Standardized metrics should be established and agreed upon to form the foundation in measuring compliance to objectives. Through standardization, one version of the truth is recognized and can provide a consistent measurement for compensation. Due to the nature of PBL implementations, it is important that performance measurements remain reliable and accurate. Supply Chain Visibility solutions incorporate standardized metrics into a common repository and maintain a consistent source of information.

When measuring performance objectives, it is also important to have access to the underlying metrics and data. Supply Chain Visibility solutions allow users to view supporting metrics that

form the basis of high-level performance metrics. Typically, functions that a support provider does not provide or have responsibility for are not included in the performance measurement of the provider. However, Supply Chain Visibility solutions can expose all underlying metrics that form the foundation of high-level metrics, regardless of responsibility, so that impacts to performance objectives can be quantified and measured.

Integration

Many technology solutions exist today in the acquisition, assimilation, and aggregation of data in order to provide information. Supply Chain Visibility applications complement current technology solutions by the ability to retrieve data from a variety of sources. Data warehouses have become a predominant means in which to assimilate and store large quantities of data that can be fed from different systems. Supply Chain Visibility applications integrate with data warehouses as one source of historical data for the purpose of researching trends and statistics. Trending can be useful when metrics expose areas within the supply chain that could improve with changes in a process or other action.

In daily operations, real-time information becomes important as more pressure is placed on increasing efficiencies within the supply chain. Supply Chain Visibility applications can access real-time databases directly with little to no impact on current operations. When real-time data is captured, tactical decisions can be made when exceptions occur. Often, negative impacts can be avoided or reduced when action occurs early on in the supply chain process.

Supply chain system integrations are typically designed with one goal in mind; to transfer the minimal amount of information necessary from one system to another so that a particular function can be performed successfully. Within Supply Chain Management solutions, large quantities of data pass through complex algorithms across multiple systems to result in the successful delivery of a product or service. To make the hand-off of data possible throughout the supply chain, systems must be tightly integrated so that each independent system can perform effectively. However, individual systems can be unaware of exception information which can affect the entire supply chain downstream. The omission of important information can eventually lead to the reporting of negative impacts further down the supply chain. As a solution, visibility applications can support an encompassing view of the entire supply chain from beginning to end through integration with individual supply chain systems. With an expanded view of the supply chain, proactive notification of exception conditions can be identified and communicated. By providing a holistic view of the supply chain, visibility applications can readily identify problems that cannot be easily recognized in disparate systems.

Common Framework

Supply Chain Visibility applications have the infrastructure available to prominently display information to an expanded audience. Whether through alerts, dashboards, reports, emails, handheld devices, or text pages, Supply Chain Visibility applications transmit information to users based on preference, need, and urgency. A common framework provides one source of information from which strategic and tactical decisions can be made. Providing uniformity prevents multiple versions of the truth, and supports a collaborative environment.

In Performance Based Logistics implementations, Supply Chain Visibility applications allow support providers and the DoD the ability to access current performance measurements at any time. Since compensation is tied to the result, performance results should be readily available upon demand. High availability of performance measurements enhances the credibility and effectiveness of a PBL strategy by increasing communication between all groups.

Continuous Improvement

Throughout the product lifecycle of a PBL implementation, continuous improvement is an ongoing process to provide incremental improvements over time to a product or service. Isolating the factors that contribute to a negative performance measurement and providing a tactical approach for a resolution is the fastest, most effective way to gain performance efficiencies. Supply Chain Visibility applications provide an effective means to assist in continuous improvement initiatives by providing access to actionable data. In a supply chain, actionable data drives strategic and tactical decisions aimed at increasing efficiencies. Supply Chain Visibility applications provide access to actionable data through the ability to drill into the detail of underlying metrics. Analyzing data at a granular level is much more likely to uncover inefficiencies that can drive action. By uncovering inefficiencies in a supply chain process and providing the necessary action, incremental improvements can be made which can result in improved performance measurements over time. In contrast, the identification of processes that exceed expected performance measurements can influence beneficial change in other areas of the supply chain.

When performance metrics for a particular area are lower than expected, Supply Chain Visibility applications can help identify where improvements can be made in the process. Through the ability to drill down to a detail level of information, problem areas can be readily identified, and appropriate action can be taken. In periods of high military activity, real-time assessments and subsequent action are paramount in ensuring that service levels remain acceptable.

Risk Mitigation

In Performance-Based Logistics implementations, it is imperative that suboptimal conditions are identified in a timely manner so that effective actions can be taken to minimize or avoid a negative impact. Risk identification is routinely a manual, subjective task associated with identifying triggers that can initiate action to a Risk Response Plan. Often, risk identification comes too late and mitigation is not feasible. By incorporating the use of a Supply Chain Visibility application, risk recognition can become more objective, timely, and accurate through the proactive identification of exceptions and metrics that are approaching a threshold variance. For example, if a supplier is late in the delivery of a necessary part, a Supply Chain visibility application would be able to determine the downstream impacts, if any, and alert a user to the potential risk impact to the Operational Availability objective. In addition, seemingly “minor” exceptions that occur early on in the process can lead to serious impacts further down the supply chain. Identifying and acting upon risks as early as possible provides an effective and powerful way to mitigate risks.

Due to the nature of PBL relationships, visibility applications also encourage risk-sharing strategies between the support provider and the DoD when shared risk factors exist. Underlying metrics in support of a high-level objective can be assigned to different “owners”. This means that the DoD and the support provider can both have roles and responsibilities defined that when combined, contributes to a high-level performance objective. Therefore, a negative impact to a function or role that is not managed by a support provider can ultimately affect a high-level performance metric. Visibility applications can increase the transparency to all underlying metrics that support a performance objective. Through a common framework to identify potential risks throughout the supply chain, the DoD and the support provider can cooperate more effectively to mitigate shared risks before they are realized.

Real-time Visibility

Companies that have incorporated Supply Chain Visibility solutions are already recognizing the benefits that real-time visibility provides, and are expanding the use of visibility tools within daily operations. Alerting for exception conditions in a text message, email, or phone call proves to be

an effective way of reacting quickly to conditions that have already occurred, or to prevent situations before they arise. A strong synergy exists between real-time visibility and continual performance improvements through the proactive ability to prevent, or quickly react to the ever-changing demands and conditions experienced on a day to day, real-time basis.

Access to real-time data plays a significant role when mitigating risk factors. Real-time data at a granular level can provide visibility into current conditions that ultimately affect a performance objective. Visibility applications provide a common framework in which to view discrete, real-time data to support educated decision making. By isolating potential issues as they occur, timely decisions can be made to lessen or prevent negative performance impacts from occurring downstream. Real-time data coupled with an extensive view of the supply chain brings a new level of risk mitigation that can be leveraged to increase performance levels.

Predictions and Forecasts

After implementation of a product or service, historical data can be captured and stored and becomes very valuable in determining trends. The data can be aggregated and analyzed in a Supply Chain Visibility application to assist in forecasting events and probable outcomes based on trending. For a weapons system, it is important to proactively assess the downstream effects of a problem as soon as it is identified. For example, if a component of a core is determined to be deficient, the probability exists that all cores containing that part may demonstrate the same deficiency. The ability to not only find the location of all cores containing the part is important, but determining the impact and finding alternatives to alleviate a negative impact becomes critical. By analyzing historical data, estimates can be derived on the average amount of time that it takes to replace a part within a core, and redistribute to the desired location. Increased accuracy in estimates can lead to higher availability performance metrics. Through increased visibility into historical events, forecasting accuracy can minimize or prevent negative impacts to ongoing operations when deviations occur.

Additional opportunities exist from the use of visibility applications to determine “What If” scenarios to assist with planning. For established PBL implementations, funding can fluctuate from year to year for various products or services. As funding increases or decreases, the supply chain must be flexible enough to adapt as the performance objectives also change. Supply Chain Visibility applications can be a powerful tool in determining the impact of change. If the DoD decreases funding that would affect Operational Availability, then revised performance metrics should be derived due to the decrease in resources available to sustain the original performance metrics. Supply Chain Visibility applications can provide the underlying metrics required to determine what the new performance measurement should be based on the amount of resources that can be supported by the reduced funding. Visibility solutions can be leveraged to set realistic expectations for revised performance metrics as adjustments are made.

Summary

Performance-Based Logistics demands a higher level of execution to consistently meet the negotiated objectives. As the Department of Defense strives to control product lifecycle costs, improve ongoing support, and optimize system readiness, Supply Chain Management solutions play a critical role in supporting the demands of a PBL implementation. Within Supply Chain Management, increased visibility is paramount to the continued success of a supply chain strategy. Through increased visibility of core measurements, performance and support objectives in PBL operations can be *measured*, *monitored*, *maintained* and *mitigated*.

Supply Chain Visibility applications support the measurement of performance objectives by the incorporation of standardized metrics. Standardized metrics allow for one version of the truth and form the foundation for how performance objectives will be measured. Integrations with multiple

supply chain systems increase visibility by providing a holistic view of the supply chain so that exception conditions can be readily identified.

Monitoring of conditions within the supply chain is made possible through Supply Chain Visibility applications in the form of dashboards, alerts, text messages, and other methods. A common portal for viewing the information benefits users by reporting one version of the truth and allowing access to performance results on demand.

Efficiencies provided by Supply Chain Visibility solutions can be maintained by providing information that promotes continual improvement. Supply Chain Visibility solutions excel at the aggregation of information from disparate systems to provide the ability to analyze key components that comprise a performance measurement. By accessing data at a detail level, root cause relationships can be isolated when problems are identified. Continual improvement occurs when action is taken to resolve inefficiencies.

Mitigating risks is supported by Supply Chain Visibility solutions through the proactive identification of exceptions and metrics that are approaching a threshold value. Real-time visibility provides a powerful way to mitigate risks through the identification of exception conditions early on in the supply chain. Proactive notification of exception conditions on a real-time basis leads to increased efficiencies. When shared risk factors exist, increased visibility encourages a collaborative approach in mitigating risks. By aggregating historical data, forecasts can be made to assist in predicting probable outcomes when conditions change.

Supply Chain Visibility solutions play an important role in the overall Supply Chain Management strategy and ultimately promote increased efficiencies. As Performance Based Logistics increases in popularity within and outside of the DoD, Supply Chain Visibility solutions will continue to play a key role in the success of future implementations.