PERFORMANCE MANAGEMENT IN DEFENCE LOGISTICS

SOLUTIONS FOR
LOGISTICS OPERATIONS

COGNOS®

THE NEXT LEVEL OF PERFORMANCE™

This edition published July 2005

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CHANGING TIMES

In order to respond to evolving political threats and strategic challenges, armed forces throughout Europe are changing their focus from static cold-war organisations to full-spectrum expeditionary forces that are responsive, agile and lethal. This has led to a growing emphasis on military capabilities, and the provision of next-generation weapon systems that support dominant, mobile operations. Continued improvements in technology, and the need to optimise increasingly complex equipment, has led to a rise in the number of initiatives aimed at improving operational effectiveness, reducing overall costs, and maximising combat capabilities. The twin objectives of increasing military effectiveness and reducing military funding have led to a transformation in defence logistics.

Across Europe, logistics transformation programs, despite being individual in nature, all aim to improve the efficiency and flexibility of support delivered to the three military services: air, land, and sea. The end goal is a responsive, robust and flexible end-to-end support chain that is capable of meeting new operational and technological requirements. The massive stockpiles, positioned 'just-in-case', and the complicated, slow-moving and unreliable supply chains that supported a cold war army can no longer be sustained. Instead, the current transition requires the military to exploit information technology to drive efficiency, streamline processes and improve operational performance.

Defence logistics includes purchasing and supplier management, stock and inventory management, warehousing, engineering support, distribution and transport. Increasingly, defence logistics is also becoming a key consideration in new equipment development with logisticians playing their part in multidisciplinary teams to ensure that new equipment is designed with efficient supply-chain management in mind, and that long-term, through-life costs are factored in as major determinates.

THE OPPORTUNITY

The logistics organisation that emerges from this period of change will be a smarter, leaner, more responsive and cost effective operation. The key enabler will be a harmonised and integrated IT infrastructure that enables information to flow with speed and accuracy. This will provide the visibility into core logistical processes to help identify problem areas, remove duplication, drive down transaction and operational costs, and streamline asset holdings. It will enable the military to focus limited logistics resources at the point of need, and to react with speed and flexibility to future operational challenges. Greater transparency into demand and maintenance requirements will support the provisioning of weapon systems, equipment and stores based on capability requirements and not 'best estimates'. This level of visibility is essential for establishing an end-to-end supply chain that incorporates finance, planning, procurement, inventory, warehousing and distribution, in order to deliver an effective theatre-sustainment capability.

CORPORATE PERFORMANCE MANAGEMENT

To provide a logistical organisation that can respond rapidly and precisely when support requirements have been identified--a cost-effective, lean, and streamlined supply chain--calls for a commitment to corporate performance management (CPM). CPM is an organisation-wide approach that focuses on strategic outcomes to achieve maximum effectiveness – in the midst of changing operational conditions. With CPM, senior commanders can quickly access detailed information about operational and financial performance of the logistics organisation, as well as the combat readiness of equipment, personnel, and weapon systems.

Corporate Performance Management: An umbrella term that describes the methodologies, metrics, processes and systems used to monitor and manage an enterprise's business performance.

Gartner

ALIGNING PERFORMANCE WITH STRATEGY

Cognos performance management software provides defence logistics organisations with an essential foundation for consistent decision-making. It leverages existing data assets through the use of integrated reporting, analysis, scorecarding, planning, and consolidation software. CPM links together departments, commanders, planners, buyers, and suppliers in a closed-loop information infrastructure.

CPM software lets you see the status and location of assets across geographically dispersed deployments and multiple services. It complements this view with the ability to analyse the information so you can allocate resources in a responsive and effective manner, as well as monitor performance. With CPM, financial and operational planning can become a dynamic and collaborative exercise rather than an annual, inflexible process. This paper will discuss the elements required for defence organisations to establish a comprehensive management information environment.

Leverage and extend value from existing and future applications and data sources

THE CHALLENGE

Logistical support is a major component of overall defence expenditure. With declining defence budgets, an increasing emphasis on value for money and operational effectiveness, and rapid advances in technology, adapting logistics activities and approaches is necessary.

Since 1945, defence logistics has been considered an asset rich, manpower intensive, slow-moving, and dauntingly complex organisation. Massive pre-positioned stockpiles, and complicated supply chains that supported a cold war army can no longer be sustained. Ineffective processes hiding behind surplus stocks are now unaffordable. Frequent delays and cost overruns were commonplace. This often led to the hoarding of supplies or the multiple ordering of parts in the hope that some would arrive on time. Delays in transit, warehousing, and receipt processing further hampered the support system. For decades, the quality of defence logistics fell progressively behind best commercial practices.

Reform of the logistics process must address known shortfalls in the existing organisation, and directly support current and emerging force structure and capabilities. It requires a delicate balance between efficiency and flexibility. You need the efficient use of capacity, minimised inventory at individual locations, and streamlined operations to achieve economies of scale. And you need the flexibility to maintain reserve capacity and inventory to respond to unanticipated demand, with the ability to deliver equipment and stores in varying quantities with short lead-times. It also requires a balance between near-term readiness and force modernisation. You need to improve processes and take a big-picture view to understand the impact your decisions have on the entire support chain, not just at a departmental level or within a single service. Current levels of co-ordination and information sharing between individual departments across the logistics organisation will need to increase.

THE ROLE OF PERFORMANCE MANAGEMENT

Corporate Performance Management is a way of developing and managing logistics organisations based on clearly defined control cycles. CPM is a powerful technology that makes defence supply chains more focused, accountable, and connected. Performance becomes far more measurable and predictable. Across the various lines of business, senior commanders know who is responsible for different aspects of performance, a level of transparency that reveals the impact of individual activities on the organisation's overall performance. This visibility into operational performance provides a clear and reliable indication of the contribution of logistics support to areas such as working capital efficiency, operational responsiveness, and defence readiness.

Overall, CPM delivers value by increasing efficiency and cost-effectiveness in all internal logistical processes, by exploiting information assets more fully, and by supporting a culture of continuous performance improvement.

Drive Strategy - Planning Core processes such as planning, forecasting, and budgeting can be performed in a dynamic and integrated fashion over the Web. Users can then combine historical and current performance data to forecast and plan future operational requirements. This provides the capability to plan in advance, to model 'what-if' scenarios, and to predict and respond to imminent operational challenges.

Individual functions throughout the support chain can align their performance with the performance of the overall organisation. Operational information that drives logistics, such as maintenance schedules, out-of-stock data, inventory movement, and headcount, can be combined with financial information and blended into the planning cycle. By understanding the relationship between costs and capabilities, senior planners can determine how operational plans will impact the performance of the organisation, and their affect on the total defence budget.

Cognos planning solutions have enabled defence organisations to dramatically improve planning cycles, operational effectiveness, and readiness, and have successfully reduced the time required to prepare and distribute budgets. Ultimately, Cognos planning solutions have helped defence organisations to convert smoothly from inefficient and slow paper-based processes and spreadsheets, to a dynamic, transparent, and collaborative approach.

Monitor Progress - Scorecarding Modern supply chains generate huge volumes of electronic data -- performance-related information that is volatile, dauntingly complex, and frequently contradictory. Scorecards help make sense of this 'noise' by giving senior commanders an aggregated view of up-to-date key performance indicators and metrics. Each metric is relevant to a specific logistics function that has been identified as mission-critical, and provides a summarised view of actual performance versus target.

Operational indicators such as equipment availability, shipping and inventory accuracy, percent on-time delivery, and order lead-times can be presented in the scorecard to ensure that daily performance is aligned with strategic targets. Users can see the efficiency of current logistics processes, and are provided a comparative base for further 'what-if' analysis. In addition, they can drill down into the data behind individual metrics to analyse the factors that affect performance.

Scorecards provide more than the static presentation of limited data. They deliver a performance management environment based on current and historical metrics. Performance problems can be quickly identified and exposed, and appropriate solutions devised. Timely, fact-based decisions can then be made on a day-to-day basis in support of on-going operational commitments. This means senior commanders can control and account for their own specific operational responsibilities, and they can act swiftly when necessary.

Make better decisions – business intelligence Cognos business intelligence (BI) solutions deliver comprehensive reports and analyses across every area of defence logistics. Reporting and analysis connect the user to the organisation, providing predictable and consistent information that reflects the individual user's specific needs. With accessible reports and analysis distributed through standard Web browsers, commanders can view results across different departments and drill down to discover the factors underlying operational performance. Critical information such as stores availability, distribution schedules, or outstanding requisitions, can be analysed and transferred into tailor-made reports. This data can then be posted on secure intranets, or shared with third party suppliers and outsourced service providers.

Flexible, responsive, user-friendly reporting means that everyone can have the right information presented in the right way: whether through managed reports, online analysis, or self-service reporting and queries.

BI can also interact with data-generating technologies such as Radio Frequency Identification and Total Asset Visibility, allowing users to aggregate and mine information for significant trends and distribution bottlenecks or to identify ineffective processes.

Cognos offers a web-based, scalable, and secure reporting and analysis environment that is easy to deploy, support, administer and secure. By offering access to multiple data sources, it allows the use of existing legacy applications. This ensures that mission-critical information flows through the supply chain, and that senior commanders can make operational decisions with confidence, based on fact.

DATA INTEGRATION

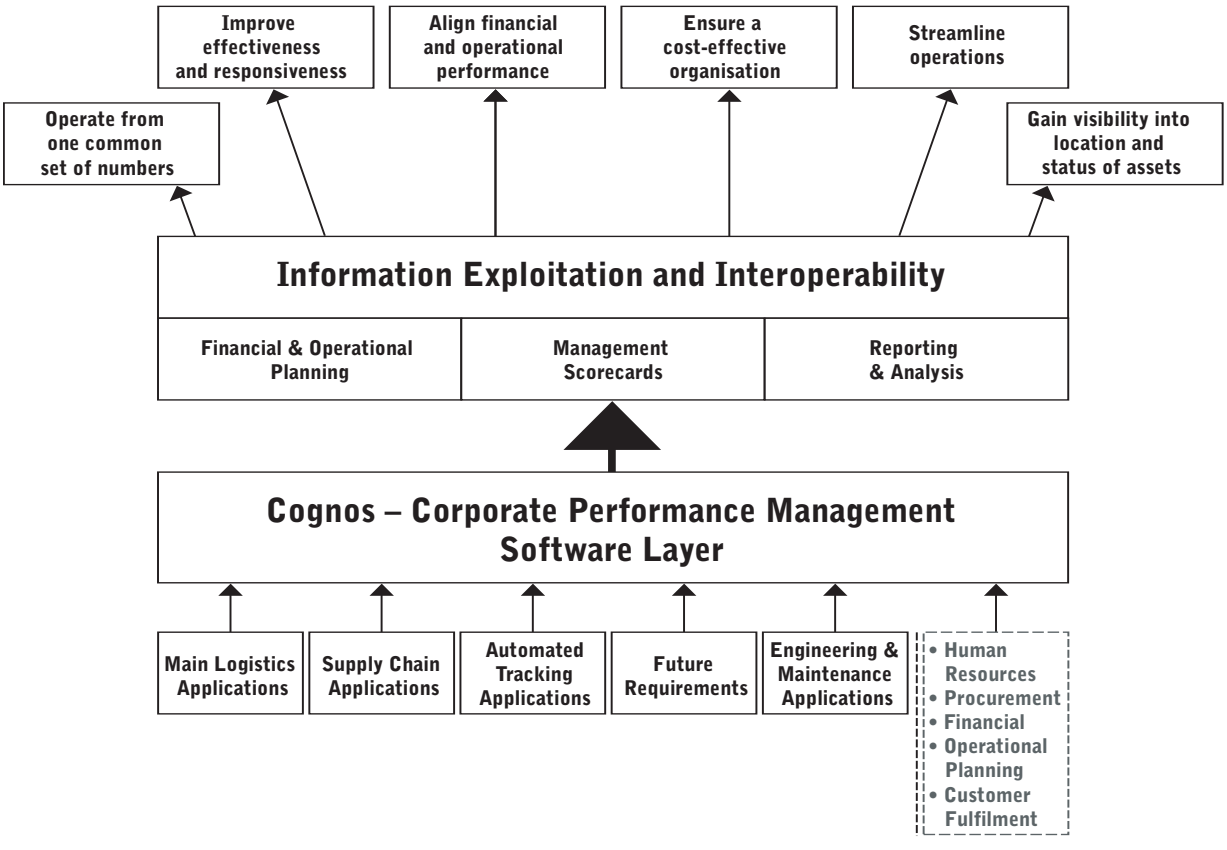
The foundation for effective supply chain management is a data architecture that delivers information in a complete, up-to-date, transparent, and navigable format. What is required is a way to extract the data and to merge all this information into a single consolidated view. With a corporate performance management solution, users can access and exploit data from multiple sources and applications spread throughout the organisation. CPM provides a platform of interoperability, in which the patchwork of existing legacy applications are reconciled in a coherent system offering 'one version of the truth'.

Exploit existing and future data sources The legacy infrastructure for most armed forces is a disparate collection of multiple ERP systems and a myriad of operational applications. Each system provides important information about a particular aspect of organisational performance but collects, defines, and displays the information in different ways. Many have been in operation for years and do not provide the level of functionality and responsiveness required, yet the costs and technical difficulties associated with replacing them are prohibitive.

With an integrated corporate performance management solution, defence organisations can capitalise on their legacy investments, and improve overall data integrity. Financial and operational data from existing legacy applications, spreadsheets, and source systems can be extracted, transformed, and aggregated into a clear, intelligible, end-to-end view, and presented in an easily understood form . Mission-critical decisions can then be based on a common set of current numbers, responses can be diagnosed correctly, and action can be taken in a timely manner.

A flexible and interoperable data infrastructure Information drives the supply chain. Logisticians require an information management system that has the flexibility and adaptability to deliver a far more responsive support capability. To achieve this, information has to flow freely throughout the support chain, between different departments and different functions, between the logistics organisation and the customer (the requisitioning unit), and through intranets and secure web browsers, as well as between purchasing, external suppliers, and outsourced service providers. A Cognos corporate performance management solution provides a coherent and consolidated view of all key data, encompassing multiple views of the logistics organisation's structure and accounts, in one uniform application environment. As a result, the errors, discrepancies and duplications caused by incompatible systems can be avoided, and individuals can clearly understand how the various departments within the organisation interrelate and are interdependent.

The joint logistics picture Effective supply chain management requires a data integration architecture that will support a joint logistics picture – encompassing purchasing, materials management, supplier performance, warehousing and distribution, human resources and finance. The ability to handle tremendous volumes of information and the ability to amass, analyse, and control this specialised data has enabled logistics organisations to improve efficiency and reduce costs while providing a faster, more reliable, and more responsive service.



LOGISTICS PROCUREMENT

Defence organisations are major purchasers of goods and services, such as equipment, spares, fuel, and food. The challenge is to deliver a secure, efficient, and cost effective procurement service to geographically dispersed units. A more informed, strategic procurement policy that is closely aligned to operational requirements is required. A collaborative purchasing organisation should be able to meet the needs of all three services, remove duplication, and utilise its tremendous buying power to achieve economies of scale.

Buyers gain a thorough knowledge of transactions, and the ability to measure with precision what is being bought, from whom, and in what quantities. This can maximise purchasing spend, reduce procurement overheads, and streamline the supply of equipment and stores. Advanced modelling capabilities allow planners to determine favourable replenishment quantities and times, to ensure volume discounts and lower transportation costs where possible, and to make purchase decisions based on total cost.

Procurement Expenditure Analysis How many order requests, contracts, and purchase orders are processed within the organisation? How do these break down across the various procurement groups and buyers? What is the average value of each transaction as a total figure and per buyer? How does this figure compare with the total number of procurement transactions for a given period? Cognos solutions enable senior buyers to analyse critical purchasing transactions and volumes by supplier, material, department, or any other criteria they choose. Organisational targets can be translated into metrics that can be monitored daily to assess performance over time.

Procurement Effectiveness Analysis By evaluating the internal procurement process, commanders gain a solid foundation to continuously improve the procurement operation. The effectiveness of individual functions can be analysed across the supply chain to ensure processes are streamlined. With this detailed understanding, buyers can implement the best format for ordering equipment and stores from suppliers, tracking and receiving shipments, accounting for payments, and accommodating defects, delays, and returns.

Procurement Organisation Analysis An analysis of material flow and accounts receivable will identify trends in purchasing behaviour and provide valuable insight into the organisation's cash flow. Commanders can evaluate buyer volume, budget distribution, and buyer/supplier relationships, and use this information to maximise purchasing power and minimise overhead investment.

SUPPLIER PERFORMANCE

The need to support evolving and unpredictable operational requirements, reduce costs, and improve internal efficiencies has only served to increase reliance on the commercial sector. The challenge is to effectively manage suppliers and material prices, to ensure inventory levels, and to maintain operational readiness. This involves the development of strategic relationships with trusted commercial suppliers who have a track record of high performance and reliability.

Logisticians require information on how suppliers are performing against contract commitments at all entry points in the supply chain. They need visibility into material expenditure and material demand to ensure that the correct purchases are on time, and delivered within agreed levels of accuracy. The result is a supply chain that can track and catch vendor violations as they occur. By systematically measuring and rating individual suppliers, logistics organisations can avoid fragmented and separated support contracts, and make cost-effective sourcing arrangements with fewer, preferred suppliers.

Supplier Performance Evaluation Identify the real drivers behind supplier performance: reliability, on-time delivery, adherence to military standards, invoice payments, and average lead-time can be analysed across multiple locations and different suppliers, with current status and trends measured against previous periods. Evaluations can include the number of parts shipped, whether they were all on time, and how responsive the individual supplier was to corrective action requests.

Supplier Pricing Analysis Analyse purchasing spend per supplier in any given period, and identify the number of suppliers currently available for sourcing particular stores and equipment. Buyers can compare prices for individual products across suppliers, and monitor any historical changes.

Supplier Payment Analysis Analyse accounts payable performance data to gain a detailed understanding of individual supplier payment history. Substantial costs savings can be achieved by tracking invoice payments against outstanding orders, and by paying suppliers only for goods actually received. Finance can also understand the impact of incomplete, late, or misdirected orders, and the extra indirect labour costs related to quality problems, which can then be charged back to the supplier.

Strategic Supplier Analysis By analysing every aspect of a supplier's performance, then combining the results, logistics organisations can gain a strategic, holistic view of supplier relationships and processes. Commanders can then understand just how reliable the supplier base is, and which suppliers are ready to meet their unique sourcing requirements. This information is vital for any organisation looking to turn tactical purchasing arrangements into consolidated, strategic supplier relationships.

PROCUREMENT – CONNECTING WITH PRIVATE INDUSTRY

The future goal for defence logistics will be a support organisation that maintains the lowest possible inventories. Although this will lead to a leaner and more responsive organisation, huge operational surges could cause problems. To reduce this risk requires a degree of cooperation and collaboration far beyond traditional methods. Cognos performance management software can provide the foundation for sharing information, a 'shared data environment' that encourages a greater degree of electronic collaboration between the military and preferred suppliers.

By developing a consistent set of programs to forge tighter links with core suppliers and outsourced service providers, defence logistics organisations can strive to achieve 100% supply chain connectivity, to gain complete visibility into their suppliers' inventories and production capacities. This will enable both the military and strategic suppliers to work together to ensure the correct inventory balance. Preferred suppliers can have controlled access to the military's inventory levels through a secure intranet, and, with an understanding of minimum safety levels, ensure stocks are maintained. This will improve the flow of information to allow suppliers to predict future requirements and to continually assess mutual business processes.

Senior commanders will need a detailed understanding of the additional inventory and surplus capacity available at short notice from the private sector. This is essential to ensure the military's capacity to respond at short notice, and to guarantee the necessary supplies to support continued operations. By undertaking collaborative planning with suppliers in advance of future missions, they will know what inventory to hold in advance of orders, and be able to prioritise their own stock holdings.

INVENTORY

For modern military forces, the need to store and maintain a vast inventory of equipment, spares and consumable items represents their single largest supply chain investment. With huge physical stocks, numerous storage and distribution facilities, and a large labour force of both civilian and military personnel, inventory must be managed efficiently and cost-effectively. In the commercial sector, inventory management is a major area for deploying performance management solutions to support streamlined operations, for reductions of costly 'in-stock' inventory, and to ensure that all internal processes are optimised. The same benefits are sought by defence logistics organisations in response to new operational and performance targets.

The objective is an 'intelligent inventory' where information is used for visibility into stock holdings, movement, and demand. Commanders can understand exactly what stock they are holding, what it is worth, where it is held, and how often it is requested. They can analyse the movement of equipment and spares across the support chain, and understand how receipts, issues and transfers relate to storage costs, equipment shortages, and the operational readiness of individual weapon systems. From this information inventory can be positioned with accuracy, and in sufficient quantities, to meet anticipated demand, and, more importantly, to reduce order and ship times. This information also supports a general reduction in the total inventory held across the organisation and the removal of obsolete or time-expired material. This will enable substantial and quantifiable cash savings.

Inventory Analysis Understand what equipment is held, in what quantities, and where. With the visibility provided by inventory analysis, logisticians can confirm that they are holding exactly what they think they are holding, at the right locations to support operations.

Inventory Movement Analysis Analyse and report on the movement of equipment and spares throughout the organisation – 'from factory to foxhole'. With visibility into the speed of material movement, the order and ship process can be analysed to reduce cycle times and increase customer satisfaction. When combined with technologies like Radio Frequency Identification and Total Asset Visibility, inventory can be monitored 'in-transit' between locations.

Storage Cost Analysis The costs associated with storing individual items in inventory. By combining internal transaction costs, labour costs, specialist storage costs and disposal costs, senior commanders can understand the financial implications for managing the entire defence inventory.

Inventory Availability Analysis Measure the availability of stored items and the percentage of stocked item requisitions that are fulfilled immediately. Individuals across the organisation can also identify items that are continually out-of-stock to understand operational effectiveness in detail, and levels of current and historical customer satisfaction.

Operational Response Analysis By analysing data on inventory demand by service, unit, or location, planners can forecast the additional inventory requirements for supporting an operational 'surge'.

Commanders can plan with accuracy additional inventory and procurement requirements for sustaining mobile deployments, as well as understanding optimal storage locations.

CUSTOMER STORY

DUTCH MINISTRY OF DEFENCE: EQUIPMENT DIVISION

The Equipment Division not only purchases equipment for the Royal Army, but also ensures that material is used efficiently. The Division is actively involved in organising and monitoring maintenance activities performed in the field by members of the 1st Division and the National Command.

Supported by Cognos, the Division developed a coordination and analysis system that provides concise access to information relating to procurement, inventory, and maintenance with clear reporting and analysis. All maintenance activities are logged and aggregated into 28 performance indicators to help system managers and maintenance workers improve processes and operational performance. Performance indicators relate to the properties of equipment (such as Mean Time Between Failure) maintenance, and the provision and use of spare parts. Examples of the indicators used include breakdown and maintenance action, the top ten spare parts, and the number of key hours. Cognos has provided the Division with a greater insight into costs and performance, access to more reliable information, and the basis for improved decision-making.

"We have laid the foundation for more efficient operations and we will be able to make better targeted decisions. We can analyse trends, for example by putting preventative and corrective maintenance alongside one another and seeing how a change in the way equipment is used has an effect on maintenance. It is also possible to compare the maintenance schedule with the actual situation and obtain a better insight into total maintenance costs and the availability of equipment."

Henk Van Tigchelhoven, Policy Staff Member, Equipment Division

DEMAND

To support more flexible provisioning methods and inventory management requires an accurate understanding of demand. Reductions in inventory, correct stores positioning, and a decrease in 'out-of-stock' situations can only be achieved by balancing material resources with material demand. The unpredictable nature of military operations and customer fulfilment requirements means stocks must be maintained in sufficient quantities to cover daily demand and rapid deployments.

Cognos corporate performance management software provides visibility into the consumption of equipment and consumable stores on a daily basis from a national to unit level. It combines historical and current usage data with purchasing information to enable senior commanders to understand in detail how the organisation is meeting demand and to forecast future requirements. This degree of transparency offers a detailed understanding as to which items are essential and the speed with which they move through inventory, to determine with accuracy when to re-order. Processes can then be introduced to ensure constant availability, with automatic alerts sent to the relevant manager when a potential shortfall is detected, or minimal 'safety level' breached.

Another key application for performance management solutions is demand forecasting. Complex demand forecasting models can be created using a number of factors such as historical demand, environmental conditions, operational commitments, repair and maintenance cycles and administrative lead times to produce a forward-looking replenishment system, with supply schedules developed to satisfy demand across all three services. These demand schedules can be easily converted to cubic feet and summaried by storage facility for advanced capacity planning, and to minimise disruption from operational surges.

Demand Analysis Monitor and compare requisitions of individual units to determine whether current stock levels are sufficient to meet service demand. Ensure minimal safety levels are continually maintained and positioned at optimal sourcing points. In addition, excess or obsolete material can be identified and removed to reduce storage costs and streamline operations.

Demand Shortfall Analysis Identify equipment and stores that are continually out-of-stock, when, where, and for how long. Contributing factors such as supplier performance, depletion rates, and wastage can be analysed and corrective action devised and implemented. Commanders can then monitor any improvements using key performance indicators.

Demand Forecast Sophisticated demand and supply forecasting models can be created using available inventory movement data. Predictive modelling and statistical forecasting supports the process, with operational commitments and warehouse capacity factored in to support the analysis of potential demand to ensure out-of-stock situations are minimised. can also be

Maintenance Analysis Understand what percentage of equipment goes directly to operations, or is stocked for maintenance and repairs. Maintenance schedules for individual assets can be factored in to ensure necessary stock levels are available, and delivered in time to ensure the repair phase is minimised.

CUSTOMER STORY

U.S. COAST GUARD AVIATION

The U.S. Coast Guard is a military, maritime service with a mission to protect the public, the environment, and U.S. economic interests in the nation's ports and waterways, along the coast, and on international waters. The Aviation section, headquartered in Washington, D.C., currently includes 26 air stations in the continental U.S., Alaska, Hawaii, and Puerto Rico.

Coast Guard Aviation had two legacy systems that didn't talk to each other and lacked a Web presence. They were also unable to track the precise location of parts in the supply chain. If a part was needed quickly and hadn't arrived, people would re-order on a high-priority basis because there was no way of knowing where the part was. Ultimately, Coast Guard Aviation would end up paying more for unnecessary requisitions that sat in a warehouse.

When Coast Guard Aviation started using Cognos about four years ago, these problems were solved. They turned the existing legacy infrastructure into a single, cohesive system for improved data integrity and greater efficiency. Cumbersome, printed legacy reports have largely been converted into more dynamic, managed reports deployed over the Web to over 6,000 air station personnel. In addition, Cognos is used to produce financial reports, manage procurement and contractors, air stations and depot supplies, as well as all the unit maintenance details of 200 available aircraft. Managers located within the Aviation Logistics Division also use Cognos for long- and short-term trend analysis and reporting of their supply chain, leading to greater efficiency and cost-effectiveness.

"In just the first year, we estimate that the Cognos solution was able to contribute towards $500,000 in cost avoidance. By automating an important Requisition Status report – and linking it to FedEx for real-time delivery status information – we were able to significantly lower our re-order rate for unnecessary parts."

Carl Webster, DSS Project Manager, Information Systems Division

Coast Guard Aircraft Repair & Supply Centre

WAREHOUSE AND DISTRIBUTION MANAGEMENT

Military forces today need a support structure that can focus on guaranteeing a reliable and predictable delivery service – on time, every time – with improved coordination of strategic movement from the depot to operational units spread across the globe. Warehouse and distribution functions are the least flexible components in the logistics 'tail', responsible for the longest process delays and inefficient delivery performance. Yet for the front-line soldier, the effectiveness of the entire logistics operation is measured by the level of support delivered over 'the last tactical mile.'

With a Cognos solution, logisticians gain an integrated view of both the warehouse and distribution functions, and, therefore, visibility into the effectiveness of the entire order-fulfilment process. With detailed understanding of current and historical performance, processes can be analysed and streamlined to ensure that both materials and information flow through the organisation with speed and accuracy. CPM enables users to exploit information to drive continuous improvements in the fulfilment process as well as increasing capabilities for dealing with supply disruption quickly and effectively. With visibility into the location, quantity, and condition of distribution assets – ships, aircraft, vehicles – and the status and availability of personnel, logistics organisations have the responsiveness and agility they need.

WAREHOUSE

Warehouse Performance Evaluation Analyse, monitor, and forecast the performance of individual warehouse and depot facilities. Key performance indicators such as order accuracy, correct documentation, accidents, and damage to equipment can be monitored, and performance analysed and compared over time, among various warehouses and storage facilities.

Warehouse Fulfilment Evaluation Improve the performance of the storage and distribution infrastructure by optimising the flow of stores to individual depots to ensure stock positioning is aligned with demand. Individual items can be classified as slow, medium, or fast depending upon historical demand, and positioned within the warehouse to streamline the picking and packing process for the least overhead cost.

Order Fulfilment Evaluation Analyse and monitor the total processing time from order to fulfilment, and any variance between the original order and the delivered items, as well as the operational impact of inaccurate delivery. Underperformance can be identified and corrective measures implemented. Metrics can be used to continuously measure the level of service delivered to end-customers, and the repercussions on repair and maintenance of weapon systems if the process breaks down.

Surge Response Evaluation With an advanced CPM solution, senior planners can implement rolling forecasts for weekly or monthly periods, taking into account data on historical demand and current trends, to extrapolate the level of logistical support required for any range of future operational criteria. With visibility across the end-to-end supply chain, commanders can quickly assess how the organisation is prepared: where additional capacity exists, what inventory short-fall exists, what additional manpower will be required, how much additional shipping capacity is available, and so on. Cognos solutions enable users to perform complex operational modelling to balance resources with requirements, and to understand the implications of transferring assets, and the resulting shortfall in other areas that have just been stripped.

DISTRIBUTION

Shipping Evaluation The shipping process for most armed forces is a combination of military and private carriers. With a Cognos solution, commanders can evaluate and improve the quality and effectiveness of the shipping process by understanding shipping volumes, costs, fulfilment ratios, and more. External carriers can be alerted to specific delivery problems and their subsequent performance tracked over a period of time to monitor improvement.

Mode Evaluation To drive a cost-effective distribution service, logisticians need to understand the cost and performance implications of shipping items through different modes – by air, sea or land, by post, road or rail, next-day delivery and so on. These costs can be tracked over time, and transportation alternatives compared to identify savings. Individual modes can also be analysed over time to identify bottlenecks in the system, and corrective action can be factored into future planning cycles.

Vehicle Utilisation Evaluation By monitoring the performance and usage of individual vehicles over predefined periods, scheduling of deliveries can be improved, and the capacity utilisation of individual vehicles maximised. Analysis of demand and delivery schedules, as well as an up-to-date view of the capacity and manpower available, will enable transport routes to be planned as efficiently and cost-effectively as possible. For internal distribution assets, their usage can be monitored, and maintenance schedules proactively scheduled in advance to minimise disruption.

Shipment Tracking Analysis Technologies such as Radio Frequency Identification and Total Asset Visibility have already begun to address the issue of asset tracking, particularly for in-transit visibility of individual shipments and containers. Cognos provides the analytical layer on top of these technologies to maximise their effectiveness. A range of metrics can be designed to monitor shipping performance, with the ability to locate log-jams in the system, both for in-bound and out-bound deliveries, what is queuing up to be delivered, and what is arriving in theatre. Analysis capabilities will then identify areas for improvement, including 'what-if' analysis to understand the implications of changing processes, schedules, and routes, or by re-aligning human resources.

HUMAN RESOURCES

Probably the most critical asset in the defence supply chain is people: highly-trained military personnel and civilian contractors who purchase equipment, store, pick and pack inventory, deliver supplies, and perform other logistics-related tasks. Human resources must be aligned with strategic objectives to ensure sufficient personnel are in place for the supply chain to fully operate. HR managers should be able to access information from payroll accounting, training history, skills databases, employee appraisals, and any other HR-related data, to gain a comprehensive view of employee performance. HR strategy can then be translated into a scorecard of measurable targets that provide a consolidated view of employee numbers, training, skill gaps, compensation, recruitment, retention, and levels of absenteeism. Users can then drill-down and analyse underlying data to explore the relationships among various metrics and the impact on operational effectiveness.

Workforce Effectiveness Evaluation With an integrated CPM solution, HR can identify and plan future workforce needs and projected availability, and align this with expected operational requirements to understand optimal staffing levels. Headcount versus plan can be constantly measured to improve HR forecasting, and the ratio of workforce to managers and civilian to military personnel can be measured to ensure the correct workforce profile is maintained.

Training Analysis HR managers can profile the skills mix by location or function, profile the skills that are essential to performance in each functional area, and implement effective training programs. The relevance and usefulness of individual training courses can be assessed and their impact on performance measured. By understanding employee development, satisfaction, and performance, skill gaps can be narrowed, and individual productivity increased.

Staff Retention Analysis Gain visibility into the factors behind staff retention to proactively understand the reasons that cause employees to leave. Profile top, average, and poor performers to identify where to focus resources, understand how training, promotions, and incentives improve retention rates, and design compensation strategies to reward individual performance. Managers can analyse the impact and cost on operations of losing/replacing key personnel.

Absence Analysis Reduce the cost and effect of absenteeism by analysing absence levels by function, location, or time period. Identify the factors that contribute to employee satisfaction as well as any systematic problems relating to poor training and/or poor motivation. Analyse sickness levels over time to recognise trends and take corrective action.

DEFENCE READINESS

The effective management of the logistics support chain has two critical objectives: to maintain the operational readiness of current forces, and to sustain the combat readiness of deployed forces. Efforts to improve supply chain management – procurement, supplier performance, inventory, warehouse and distribution – are inevitably focused on defence readiness. This is 'focused logistics,' an approach to management information that is combined with logistics and transportation technologies to provide effective operational sustainment and rapid response capabilities across land, sea, and air.

Armed forces depend heavily on the readiness and operability of weapon systems and equipment. Maintaining weapon systems requires spare parts be available as needed. Senior commanders need visibility into the disposition of logistical assets, and the ability to manoeuvre these assets as quickly as they manoeuvre combat elements. They need a detailed understanding of historical demand and equipment depletion rates, enabling the stores process to ensure positioning of spares at optimal locations in sufficient quantities.

The management information environment provided by Cognos Corporate Performance Management software enables mission-critical decisions to be made based on accurate, near- or real-time logistics information. Visibility is provided into the location and status of individual assets, enabling logistics-related issues to be identified sooner and resources to be targeted responsively for maximum cost-effectiveness. Key performance indicators connected to operational readiness can easily be combined in a management scorecard, giving senior commanders at-a-glance daily summaries of individual unit readiness, and the ability to drill down into any metric to understand the causes behind those with a non-operational status. In addition, logisticians can analyse details relating to the readiness of equipment, personnel, and weapon systems, and can run daily reports on the current status of individual units. The result is a predictable, dependable, and responsive supply organisation that can meet the needs of current and future military deployments.

Strategic Planning Cognos CPM solutions provide a comprehensive, collaborative, 'joined up' planning capability that reduces planning processes and the resources they consume. Logistics planners can model the size of the distribution fleet, inventory requirements, warehouse space, maintenance schedules, weapon system availability, budgets, and training requirements. Multiple operational scenarios can also be modelled and analysed with an integrated view of the impact of future scenarios, complete with cash flows, contribution margins, and balance sheets. Additional emergency response requirements can be mapped directly into operational models and their impact visualised and analysed. Senior commanders can then predict with confidence both their support requirements and the operational readiness of each service on a rolling forecast.

Maintenance Management: Vital for minimising the disruption caused by maintenance and repairs to weapon systems and equipment. Authorised individuals can monitor how often equipment is used, and this information, when combined with data on the Mean Time Between Failure, can enable them to proactively devise maintenance schedules per item of equipment, location, or unit in advance, and ensure that necessary spares are available and delivered to the relevant depot. With visibility into spares availability, logistics response times, and repair cycle times, commanders can understand in advance how maintenance requirements will affect unit readiness. Total maintenance costs per item/unit, and maintenance hours required, can be then fed into the rolling forecast.

Integrated Asset Management An information management solution will allow commanders to maintain a precise, near- or real-time awareness of the disposition of their assets across the globe. This will include information relating to levels of operational readiness at any given time, and a detailed understanding of the underlying factors, including maintenance schedules, equipment shortages, outstanding orders, and manpower availability. Senior commanders can re-align assets in response to emerging threats, and perform 'what-if' scenario modelling to understand how any changes will impact levels of combat readiness.

SUCCESS STORY

UNITED STATES ARMY RESERVE (USAR)

The U.S. Army Reserve is the active Army's federal reserve force. It consists of combat support and combat service forces that can move on short notice to give the active Army the resources it needs to deploy overseas and to sustain combat troops during wartime or other foreign deployments. The Army Reserve is the Army's main source for transportation, medical, logistics, and other key assets. It totals more than one million soldiers in over 2,000 units located in the United States, Guam, Virgin Islands, Puerto Rico, and Germany.

The U.S. Army reserve implemented a business intelligence solution from Cognos to provide thousands of military officials and administration with instant and secure Web access and the ability to report on the status of all troops and assets. With Cognos, commanders and staff have the integrated information they need to effectively plan and manage unit resources. USAR leaders can readily access information in a variety of key logistics areas so they can see with precision the location and status of all their assets, and ensure that individual units are always battle-ready.

"Using Cognos, over 19,000 individuals now access and work with information to improve the effectiveness of their units. Military leaders can gain instant awareness of troops and assets, and target resources precisely for maximum cost-effectiveness. The Web-based approach led to cost savings and tighter security controls with respect to data accessibility."

Lieutenant Colonel David C'de Baca, U.S. Joint Forces Command, U.S. Army Reserve

CONCLUSION

At a time when operational and financial pressures are increasing, the comprehensive, timely analysis of key logistics processes is a must, not an option. With Cognos Corporate Performance Management, defence logisticians can address operational and financial performance across the organisation. The results can prove staggering, as the software highlights areas for streamlining operations, reducing costs, and improving processes. The visibility provided into the core logistics processes will provide the foundation for transforming the entire logistics organisation into an effective and responsive operation that can rival commercial logistics companies for best practice in service delivery. CPM is essential for making internal processes simpler, faster, more efficient, and more cost-effective.

Based on widely-used technologies, the solution will interface with most applications (such as ERP systems), to exploit the existing IT infrastructure and deliver immediate results. Cognos provides a uniform application environment for all management processes that will enable defence organisations to eliminate the errors and discrepancies often caused by incompatible systems. Commanders can grasp the big picture – understanding how the different parts of the organisation interrelate and are interdependent. Full functionality is available through standard web pages, which can be accessed easily from any PC with Internet connectivity. No special software needs to be installed. Anyone who is authorised can access all the data and applications, reports and analyses they require at the click of a button, anywhere in the world.

A CPM solution can make the entire defence supply chain intelligent, ensuring visibility into global operations, and, if required, consolidated visibility into all three armed services – land, sea, and air. Once the solution has provided all relevant individuals with the knowledge needed to drive success, senior commanders can monitor and plan based on this wide-ranging intelligence. This will help ensure that day-to-day operations are aligned with the overall organisation-wide strategy, and that disruptions caused by sudden demand spikes or unexpected operational commitments can be minimised, and additional resources immediately identified and allocated in time.

THE NEXT STEP

While a culture of performance management requires a top-down, long-term commitment, thinking big does not have to equal starting big. In fact, when it comes to performance management, thinking big but starting small is the key to success. By starting small, a tangible return on investment can be realised quickly, and that success can be radiated incrementally to other parts of the organisation. Initial solutions should begin by addressing performance in a specific logistics function in an area where strengthening the link between strategy and day-to-day execution will have a discernable impact on performance, and where the value of the software can be quickly demonstrated. Commanders can then expand on that success to other operational areas throughout the organisation. It is not a one-off project, but an on-going activity woven into the fabric of an organisation's culture. CPM is not revolutionary, but evolutionary.

KNOWING COGNOS: A SINGLE STRATEGIC SUPPLIER

Cognos is the world leader in Corporate Performance Management software for logistics organisations. We measure success in terms of our customers' success. Our people are dedicated to that end, and the organisation and our business model support this with a commitment to product quality, expertise, and service. We can demonstrate deep experience across a broad spectrum of industries as well as public sector and defence organisations.

When you champion your organisation's performance with Cognos, you're engaging with a strategic supplier that is distinguished by:

- **Breadth and depth:** enterprise planning integrated with metrics management, as well as the broadest set of business intelligence reporting and analytic capabilities to enable your entire management cycle.
- **Flexibility:** a solution that supports planning, monitoring, and reporting and analysis based on your operational strategy.
- **Data neutrality:** software that leverages data from all of your legacy applications and puts it to work as part of an integrated solution focused on driving operational performance.
- **Scalability:** an information architecture that scales to thousands of users across the organisation.
- **Organisation-wide view:** a solution that is not limited to the finance department, but links every logistical function in a system of performance management.

Founded in 1969, Cognos serves more than 23,000 customers in over 135 countries ranging from Fortune 100 and Global 2000 organisations to military and public sector organisations. In addition, Cognos enjoys partnerships with premier management consultancies and application service providers. Armed forces across the globe have implemented Cognos solutions to enhance their logistical performance and operational readiness. These include the British Ministry of Defence, the Dutch Ministry of Defence (Equipment Division), the German Bundeswehr Logistics Office (Logistikamt der Bundeswehr), the USAF, USMC, TRANSCOM, and the United States Navy.

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PRINTED IN CANADA
(07/05)