

SUCCESS STORY: OPTIMISATION OF CoS FOR A GLOBAL CONSUMER PACKAGED GOODS ORGANISATION

The client, a leading global Consumer Packaged Goods enterprise, with annual sales exceeding \$8 billion, operates a complex and highly integrated manufacturing and distribution environment



Introduction

In the Consumer Packaged Goods (CPG) industry, inaccurate demand planning triggers excess inventories, excessive shipping costs, and increased product returns, with a net result of reduced profitability. Supply Chain Management (SCM) software solutions are key to accessing data across Line-of-Business (LOB) units so that comprehensive forecasting and planning can be achieved. The following case study examines how one CPG company implemented a SCM solution to improve business processes and increase profitability. Using BT Infonet's recommended network architecture, the company reduced network costs by \$800,000 annually and increased revenue by \$1.4 million annually.

The Client's Business Challenges

Despite having vast distributed databases of historical sales and manufacturing data in Line-of-Business units, the client had no easy way to access and manage valuable data into usable, accurate forecasts. Instead manufacturing and distribution plans were based on rough estimates derived from Excel spreadsheets and key individuals' knowledge of demand trends, leading to shortages and excesses in the supply chain that reduced profitability and encumbered business processes. A decision was made to implement a sophisticated Supply Chain Management solution, based upon the SAP

software suite. A major systems integrator had been engaged to assist in designing the business processes associated with demand forecasting and constraint planning, which were to be supplemented with a capability allowing LOBs to make continual adjustments for changes in supply, demand, and distribution. The systems integrator would also be responsible for assisting the client in development of an IT architectural plan and overseeing the implementation of SAP.

The client also had numerous distributed TelNet legacy mainframe applications, which were used for messaging, order taking, plant operations, and other mission-critical activities. Several of these applications have been “webified” or front-ended by software providing a local browser-based/GUI interface. Since mission-critical applications were also accessed by distributors for placing orders and querying shipment status, the client set a goal of maintaining end-to-end response times of 5 seconds or less.

The client’s primary business objectives were to:

- » Provide a Return on Investment (ROI) for the enterprise’s investment in SAP, based upon improved sales, lower production costs and fewer returns.
- » Develop an integrated SCM solution, based upon the use of SAP applications to improve supply chain efficiency and reduce associated costs.
- » Base manufacturing and production planning upon market and customer demand, not human estimation.
- » Make information accessible to participants in the manufacturing and distribution supply chain to facilitate planning and distribution.
- » Leverage historical sales information contained within the enterprise’s distributed operational systems.
- » Maintain the operational efficiency of the existing legacy applications, which will be interfaced with the new SAP applications.

- » Implement and maintain an infrastructure that optimises the business processes and supporting software applications, as well as minimises Total Cost of Ownership (TCO).

Designing an Optimised Network Infrastructure

The systems integrator and client jointly approached BT Infonet in regards to participating in the refinement of an IT architecture plan, which was being developed to support the planned SAP implementation. BT Infonet employed its Application Defined Networking (ADN) approach which optimises networks based on the unique characteristics of the enterprise’s software applications. Guided by an enterprise’s business objectives, this analysis can predict and measure the impact of business applications on existing and planned network infrastructure.

The initial plan specified that the global network would be based upon an IP VPN, with “IP/Interactive” as the default Class of Service (CoS) to provide the highest level of priority. Based upon BT Infonet’s extensive experience and expertise gleaned from numerous similar implementations of SAP, it was recommended that the client use CoS as a technique for separating the delay sensitive legacy applications’ transaction traffic from the more data-intensive traffic generated by SAP.

Since Enterprise application suites, such as SAP, are very “bursty” and can generate transactions that are multiple megabytes in size, traffic separation is necessary. If these packaged applications ran in the IP/Interactive CoS, along with legacy or TelNet applications, they could jeopardise the performance and scalability of the mission-critical legacy applications. Also, this approach could require the client to buy additional bandwidth, increasing overall network spending. Hence, selecting the appropriate CoS is critical to ensuring performance/scalability and lower TCO.

Using its patent-pending Network Analysis Program (NAP) toolset, BT Infonet profiled the client’s mission-critical legacy applications, validating their high delay sensitivity and uniformity in transaction sizes. Additionally, within the client’s test environment, the SAP application was confirmed as both delay sensitive and data-sensitive. Therefore, BT Infonet’s recommendation was that the most appropriate CoS for the mission-critical legacy applications was IP/Interactive. This would permit the client to consistently achieve its expectations for 5-second end-to-end response times. However, the SAP application should be separated by placing it in an IP/Lan2Lan CoS. Finally, BT Infonet provided summarized recommendations in an alternative network design that calculated the optimum bandwidth necessary to yield the client’s requirements for performance and scalability.

As part of this analysis the BT Infonet team constructed performance/scalability models for two alternative network designs. Alternative A ran both the mission-critical legacy applications and the new SAP application in an IP/Interactive CoS, and Alternative B ran the legacy applications in

IP/Interactive CoS and the SAP application in an IP/Lan2Lan CoS. Using these models, BT Infonet determined that if CoS was not used to achieve traffic separation, the client would need to spend an additional \$800,000 annually for bandwidth to accommodate their mission-critical legacy applications’ performance requirements. Also, during peak seasonal order periods, the data-sensitive, “bursty” SAP transaction traffic would compete with and cause the legacy applications’ response time to degrade to a 12 second average. Large SAP transactions executed in components such as Advanced Planning Optimiser (APO), would significantly degrade the legacy TelNet applications’ transaction performance. The client estimated that an increase in average response times to 12 seconds for these applications would result in lost orders averaging \$100,000/day over a 2-week holiday stocking period, or \$1,400,000 in total.

The following table illustrates the relative impacts of the two alternative network designs.

Table 1 - Comparison of Network Design and CoS Alternatives

Categories of Impacts	Annualised Impacts		
	Alternative A (IP/Interactive CoS for both mission-critical legacy and SAP applications)	Alternative B (IP/Interactive CoS for mission-critical applications and IP/Lan2Lan CoS for SAP)	Difference
Annual network bandwidth costs	\$2.8 million	\$2.0 million	\$0.8 million
Lost orders	\$1.4 million	0	\$1.4 million
Totals	\$4.2 million	\$2.0 million	\$2.2 million

Clearly, using CoS to separate applications would optimise the client's mission-critical legacy applications, as well as satisfying the requirements of the client's mission-critical business applications supported by PeopleSoft, SAP and Siebel. This approach would deliver an annualised benefit of approximately \$2.2 million.

Business Value Delivered

As a result of BT Infonet's consultative Application Defined Networking approach and market leading solutions, the client now has a fully managed IP network infrastructure that is optimised to their unique business requirements and enterprise software applications.

The client's business areas now benefit from availability of the following capabilities:

- » An annual reduction in network costs of approximately \$800,000.
- » Optimised connectivity with distributors, which annually yields an additional \$1.4 million in revenue.
- » Reduction in inventory costs, including warehousing and logistics.
- » Production planning lead-time reduction of 55%.
- » 20% inventory carrying cost reduction.
- » Logistics costs have been reduced by greater than 15%.
- » Fault-tolerant communications strategy through a balanced infrastructure of servers, software, data bases and network design.
- » Reduction in transportation and human resource costs as a result of greater efficiency in the supply chain.
- » Increased inventory turns.

Networks designed using this approach represent the optimum ROI to the enterprise and TCO.

About BT Infonet

Infonet Services Corporation, a member of the BT Group plc group of companies, known for its quality of service, is a leading provider of managed network communications services for multinational entities.

Employing a unique consultative approach, BT Infonet offers integrated solutions optimising the complex relationship between enterprise applications and the global network. Extensive project management capabilities are the foundation for the services and solution offerings (broadband, Internet, intranet, multi-media, videoconferencing, wireless/remote access, local provisioning, application and consulting services) positioning BT Infonet as a single-source partner for multinational entities. In particular, BT Infonet IP VPN solutions offer multinationals a unique combination of Private and Public IP services as well as a full set of Managed Security and Mobility Services.

Rated "Best in Class" overall in Telemark's survey of Global Managed Data Network Services, Infonet Services Corporation has also won "Best Customer Care" and "Best Carrier" at the World Communication Awards. Founded in 1970, Infonet Services Corporation owns and operates The World Network®, accessible from more than 180 countries, and provides local service support in over 70 countries and territories.

Additional information about Infonet Services Corporation is available at www.bt.infonet.com.

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