The Supply Chain Results Company™

Transportation Management at LG Electronics: Act Locally. Manage Globally.

i2 enables one of the world's largest consumer electronics manufacturers to rapidly implement best-practice transportation management solutions and synchronize intra-enterprise workflows across distributed operations, resulting in an 8 percent reduction in transportation and distribution expense.

LGE's deployment of i2 Next-Generation Transportation Management positions the company to take advantage of the industry-leading solution suite across its distributed transportation and distribution operations network. With Next-Generation TMS, LGE is able to rapidly benefit from i2's more than 20 years of proven transportation management domain expertise. By combining the i2 Agile Business Process Platform with i2 Transportation Management, i2 was able to simplify the implementation processes and quickly deploy the supply chain architecture for more usable and tailored solution workflows specific to LGE's localized requirements. Because of this, LGE is able to self-manage the customized configuration of best-practice workflows at all user levels. The results are higher levels of transportation management value, lower total cost of ownership, and rapid time to value.

The Challenge

In order to succeed in today's ultra-competitive consumer electronics marketplace, an original equipment manu-facturer (OEM) must achieve a balance of product innovation and operational excellence. Margin erosion and perishibility demand the highest levels of efficiency across the entire cash-to-cash life cycle. In a high-volume environment with thin margins and intense competition, every dollar within the costs of goods sold (COGS) has significant impact on the bottom line.

LG Life's Good

Value Summary

- 8% annual reduction (recurring) in overall transportation and distribution costs
- Rapid time to value—project live and delivering value in less than 32 weeks
- Significant enhancements in service levels and customer satisfaction
- Established highly configurable supply chain management architecture to be positioned for future growth and regional management demands

"i2 Next-Generation TMS is the only solution today that has the ability to deliver best-in-class supply chain management functionality along with the adaptability to customize workflows and scale across our complex and distributed supply chain network. This combination of world-class domain expertise, rich solution functionality, and innovative delivery methodology works to extend the value of i2 Transportation Management solutions both inside and outside of our enterprise and enables highly customizable and configurable user interfaces in an effective and cost-efficient manner."

—Lee Geun An, Chief Officer of the Management Innovation Team for Hi-Logistics The Logistics Division of LGE

LGE management recognized the need to streamline its business processes and identified multiple areas of improvement within its transportation and distribution operations. The challenge for LGE was to achieve transparency between market demand variability and distribution planning and execution. To effectively manage this, LGE set out to establish integrated best-practice workflows across the entire transportation and distribution organization.

Central to this strategy was the need to implement an adaptable supply chain architecture that would effectively integrate the management of regional complexities with the deeper strategic value of LGE's enterprise planning and execution infrastructure. The selection criteria was focused on partnering with the best-in-class transportation management solution provider, followed by the lowest overall total cost of ownership, the least risk, and a rapid time to value.

The Situation

LGE Transportation, with its annual expense exceeding $40 million, was recognized as one of the critical areas within the company's operations that would deliver significant value to both the top and bottom line. LGE saw the ability to reduce transportation costs through synchronizing planning and execution. In order to extend the value of Oracle ERP and EXE WMS systems deeper into the distribution network, LGE needed to integrate a best-of-breed transportation management system into its existing enterprise management infrastructure. This would enable LGE to achieve transparency between the variability that came from the market demand and its distribution and inventory planning. Management began by reengineering its business policies and processes to create more agile and adaptable supply chain operations.

The strategic objectives of this project were focused on the reduction of transportation costs by raising the efficiency of LGE transportation resources and asset utilization. Transportation costs account for approximately 51 percent of total logistics cost and was recognized as the primary target for reduction. The first step

was to redesign the company's transportation and delivery system. Linking variable market demand signals, distribution planning, and transportation execution would enable LGE to optimally manage capacity and routings.

The project scope became LGE's outbound logistics area including factory transportation, general delivery, and home delivery.

The LGE logistics network consisted of three central distribution centers (CDC), 18 regional distribution centers (RDC), and more than 3,000 domestic consignees. In this environment, LGE builds more than 700 truck loads every day, 300 of which deliver to the CDCs with the remaining 400 delivered to the RDCs. The key issues facing management could be categorized on two levels: the quality and accessibility of accurate and timely information, as well as best practice transportation and distribution management. LGE suffered from high levels of inaccurate shipment planning, inventory, and capacity availability information. Disparate manual processes were adopted as a result of this known weakness.

Traditionally, critical service failures occurred because of the high degree of demand variability and the communi-cation lags between the various workstations across the organization. Distribution and transportation processes were not synchronized and the resulting information bottlenecks translated to reactive management. LGE accounted for this inherent inefficiency through buffer inventories and disparate manual transportation planning. Both of these practices led to sub-optimal results that had negative effects on both costs and service levels.

Load-building efficiency, both in the time it took to create plans as well as the quality of the plan, resulted in significant waste. Manual delivery plans were based upon fixed routing methodologies that did not factor real-world variability and the resulting cost ramifications of sub-optimal asset assignment. This proved wasteful with capacity utilization and driver assignment.

On the customer-facing end, drivers would make maverick decisions affecting appointment time and routing as a trickle-down result of the disparate and manual decisions made in the steps leading up to delivery. Without a dynamic methodology, static delivery runs concentrated orders in certain time and geographic zones as opposed to based upon need or importance. All of this worked together to translate into excess transportation costs and decreased service levels.

The Solution

LGE deployed i2 Transportation Planning and Management specifically focused on order consolidation, dynamic hub selection, and asset planning (continuous move). LGE's selection of i2 next-generation solutions was multifaceted—with the primary factor being the recognition that i2's suite was the most complete and robust available on the market.

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Through the next-generation implementation methodology, LGE was able to accelerate the implementation process through the use of i2 Studio, a central element in the i2 Agile Business Process Platform. i2 Studio improved integrated development, testing, and the deployment environment and enabled the enhanced customization of user interfaces, workflows, and business logic while adding value to data staging and exceptions management.

In addition to the breadth of solution and its implemen-tation value, the flexibility of the i2 solution was far greater than other options evaluated. This flexibility was one of the essential factors in the decision-making process given the global reach of the LGE network and the high degree of difference geographically which would demand customization. Once again, i2 was able to demonstrate proven, successful references.

Value

LGE was able to rapidly deploy and configure i2 Next-Generation Transportation Management, going live with the system in 32 weeks. The initial value target was a 4 percent reduction of transportation cost in RDCs and a 3 percent increase of load fill rate in CDC through optimization of transportation planning. Inventory turn has been accelerated through dynamic hub selection in transportation planning and higher degrees of collaboration between replenishment planners and distribution.

Leveraging the i2 Agile Business Process Platform, LGE was able to interlink the disconnected workflows across multiple internal organizations, including transportation managers, inventory planners, and customer-service representatives. This enabled LGE to oversee distribution with a holistic view of both inventory and capacity, both of which could now be managed against a single version of the truth.

Overall, LGE has realized much greater efficiencies through its operational innovation powered by i2 Next-Generation Transportation Management. The results are expected to upgrade customer-service levels and continually reduce costs by more than 8 percent annually.

"With i2 Next-Generation Transportation Management, LGE was able to quickly accomplish integrated workflows between our existing systems infrastructure, including ERP, OMS, WMS, and logistics management systems. The lead time for the deployment of i2 Next-Generation TMS was 90% faster than if similar solutions were deployed through traditional development and integration methods," said Lee Geun An, Chief Officer Management Innovation Team, LGE.

The Next Generation of Transportation Management

The complexity of today's global supply chains continues to challenge transportation and distribution operations and the systems that are designed to help solve their day-to-day issues. The most significant contributor to this is the breadth and velocity of variability that is introduced and any number of given points across distributed workflows and the lack of synchronization across the systems that manage them.

Leading companies realize that they need an external architecture in order to link inventory and distribution management. This solution must integrate into the overall enterprise architecture to create a closed-loop management environment. It must also be configurable to the degree that user requirements at the localized operations level are not sacrificed or disrupted as the result of an enterprise-focused system that is inflexible and therefore unusable. In today's marketplace, all of this must be achieved rapidly and cost effectively.

The next generation of transportation solutions must balance best-in-class functionality with adaptable deployment capabilities. These solutions must leverage the strength of the core information systems in place in order to extend the value of ERP, WMS, and OMS functionality into additional areas of the supply chain. These solutions must be designed to execute the global strategy, yet have the agility to configure the user interface and workflows to act locally. With i2 Next-Generation TMS, LGE has been able to realize its supply chain strategy and is positioned to continue to achieve operational efficiency and supply chain innovation.

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