

Building IT backbone of the largest
building material producer in India.
a case study...



The Client

Lafarge India Ltd. (LIL) is a subsidiary of the Lafarge Group France, with a total production capacity of 5 million tons and a clinker capacity of 3 million tons. Its product range includes Portland Slag Cement, Ordinary Portland Cement and Portland Pozzolana Cement and operates in a market spread in 14 states through a huge dealer network.

The Challenges

Our client Lafarge India Ltd. has multiple raw materials input and finished goods output points, which has created many bottlenecks in strategic and operational supply chain decision making process. They were in urgent need of optimization of their existing Supply Chain Management System.

The challenge was to collect data from scattered resources and process them to give quantifiable real time data/reports to facilitate the production and distribution related decision-making. LIL invited Binary Semantics to assist them in defining and constructing this supply chain solution.

Project Brief

Project:	Lafarge Optimization Model
Customer:	Lafarge India Limited
Industry:	Commodities (Cement)
Application:	Optimization Solution
Tools used:	Visual Interdev, ASP 3.0, Crystal Reports 8.0, Lingo Java script, VB Script, ASP, HTML, Oracle 8i
Platform:	Windows 2000 Server, IIS 5.0
Project Scope:	Requirements Analysis, Prototyping, Design, Development, Testing and Implementation





The Objectives

- Optimization of over all supply chain on the basis of given constraints like: raw material inventory, production capacity, market demand & status, transportation cost and production cost.
- Development and implementation of a web interface to accept inputs from varied sources and provide various input, output and analysis reports across the company's network.

The Approach

Binary has a proven, customizable software development project execution framework, Offshoring™, which covers entire SDLC from requirement analysis to warranty support. We used the same framework for requirement analysis at the client's HQ (Kolkata), customization and development at our software labs, Gurgaon and implementation at client site.

We followed the single point approach for all our communication from our side as well as LIL side, which resulted in effective and quicker communication and faster feedback and approvals.

The Solution

Binary suggested the use of OR (Operations Research) technique and LINGO 9.0 modeling software. With the help of these technique and tool, we created a mathematical model, incorporating various constraints of time, costs, inventory and distance; and Binary's Optimization Engine was designed. This was tailor made to suit LIL's requirements.

The Binary Optimization solution consisted of Lingo engine, optimization model and web interface to send and receive outputs and inputs across LIL. The decision variables in the optimization engine were designed to decide on the exact quantity of raw material/finished goods to be shipped to different stock keeping units (SKUs) on following algorithm:

Plant → Mode → Route → Warehouse

The engine receives inputs from web interface as well as from operational database and process it to produce desired input, output and analysis reports (see Fig1.).

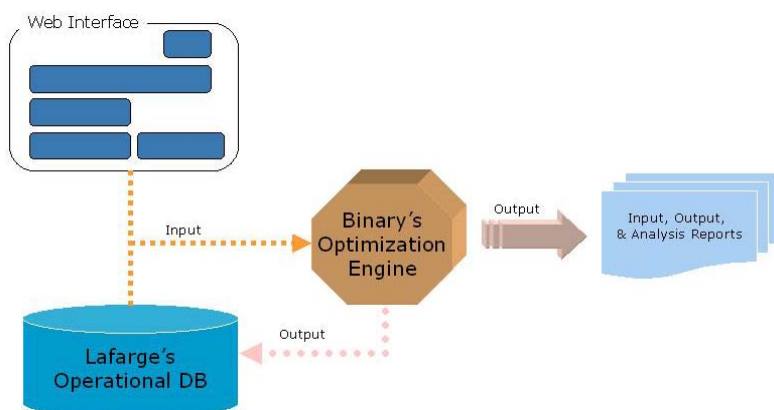


Fig1. Process flow diagram





The Benefits

This optimization solution implementation has improved LIL’s proactive planning capability and manufacturing and distribution efficiency, which have helped ensure a more robust supply chain. Some of the key benefits of the solutions are as follows:

- Company gained enhanced visibility across its supply chain
- Reduced distribution lead-time
- Minimization of the total supply-chain cost
- Faster and effective strategic decision processing

The customer is reaping the benefits of a well-designed system in terms of overall cost saving and is extremely satisfied. Our customer has awarded our unique approach and successful implementation of the solution with the AMC of the solution.

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