

## Implementing ERP Systems: Case Study on Critical Success Factors

Enterprise Resource Planning (ERP) is the most costly technology initiative that an organisation can take. It's not just about software; it's a business phenomenon, which ultimately benefits everyone in the organisation if implemented successfully. To reap the ERP's promised benefits, it is strongly recommended to concentrate on the issues and problems encountered during the ERP

ABAP. With ABAP, it is possible to update database, design new entry screens, forms and formats, design reports and even create application and interfaces, if not available in the standard software.

**Supply chain software:** Supply chain software deals with the planning and execution issues involved in managing a supply chain such as demand planning, order promising, production and distribu-

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tion planning and production scheduling. The success of the supply chain software depends upon accuracy and timely information. i2 is the widely used supply chain software, developed by i2 technologies. It enables an organisation to manage and analyse demand variability, create accurate plans and forecasts, develop timely and profitable promotional strategies, manage manufacturing, logistics and other supply chain constraints, optimise inventory positioning, support distribution and allocation, and monitor plan execution, and manage exceptions. Like SAP R/3, i2 can also be customised and configured to suit any enterprise.

*Let's now try to portray the critical success factors for ERP implementation by illustrating the issues with the case of i2 implementation, at leading supply chain software, Nike. The following case gives a detailed account of factors that led to the failure of i2 implementation at Nike and also analyses the steps taken by Nike to resolve the problem.*

**The Company:** Nike,

a leading footwear and apparel company, was originally founded in 1962 as Blue Ribbon Sports (BRS) by Bill Bowerman and Phil Knight. In 1972, its name was changed to Nike. Today, Nike employs approximately 23,000 people worldwide. Its revenue has reached to \$12.3 billion for the FY 2004 as against the first year's sales of \$8,000. Nike makes 40 per cent of all branded athletic footwear sold in the United States and its current \$23 billion market cap is more than three times that of Adidas, the No. 2 sneaker seller in the world.

**The Challenges:** Nike had a manufacturing cycle of nine months. The retailers used to place orders six months ahead of delivery. Nike had a vision of reducing its manufacturing cycle to six months so as to match with the retailers' ordering schedule. It aimed to convert the supply chain from make-to-sell to make-to-order to remain ahead of competition and mainly for that purpose; it planned an investment of \$400 million on IT to upgrade its supply chain system. SAP R/3, the leading ERP software was at the heart of entire system with 'i2' demand and supply planning software and Siebel's Customer relationship management software.

Nike had an in-house developed demand-management system. To accommodate complex manufacturing process, busier manufacturing schedules, stringent delivery terms, and an exceptional growth rate, Nike had to customise its software again and again as it grew.

**The Strategy and Resultant Problems:** i2 and SAP both are the standard software products and enable an enterprise to get them customised for its specific requirements. Nike found i2's recommended methodology and templates too rigid to use them. It overlooked AFS (Apparel and Footwear Solution), the initial version of industry specific solution (ISS) for apparel and footwear industry developed by SAP.

When the i2 implementation began in March 1999, Nike planned to customise it to accommodate all modifications made to the old system to fulfill its peculiar needs. At that time, Nike was using its legacy system for order and

delivery management. SAP installation had just begun. Nike didn't wait for the completion of the SAP implementation. i2 software was so heavily customised to run with the legacy systems that the entire system became slow to the extent that a single screen would take as much as three minutes to load. Moreover, it faced severe problems in matching information from two systems, which resulted in inaccurate orders being placed for manufacture.

The supply-chain software was supposed to reduce the amount of raw material needed for production. Instead, it over-ordered certain material and did not place the order for the needed material on a timely basis. Nike didn't

**Kavita Gorwani**

The author is a member of the Institute. She can be reached at [gorwanik@rediffmail.com](mailto:gorwanik@rediffmail.com)

The term Enterprise Resource Planning signifies an enterprise-wide management system supported by multi-module application software that enables an organisation to manage all facets of its business, including product planning, material management, manufacturing, finance & accounting, costing, sales & distribution, assets acquisitions, maintenance and retirements, customer services, reporting, human resource management and so on.

life cycle implementation and management in the similar projects. (Diagrams: 1 & 2)

The most widely used ERP software is SAP R/3, which has been developed by SAP AG, Germany, and is the largest supplier of business application software. R/3 can be tuned to any requirements through configuration and customisation. For customisation, SAP R/3 provides the SAP programming language

tion planning and production scheduling. The success of the supply chain software depends upon accuracy and timely information.

Ideally, supply chain software is implemented after ERP implementation as it relies on the information that is stored normally in the ERP software. Theoretically, the desired information can be assembled through the legacy systems, but it can be night-



anticipate the recent weakening of US footwear market. It was over-manufacturing some shoes, while there was shortage of others.

Product shortage resulted in lost sales and revenue. To get the required raw material urgently and to make the product reach the market immediately, it had to incur additional freight cost. On the other hand, excessively produced shoes were disposed off at heavy discounts.

Nike reported a profit of only \$97 million for the quarter ended February 2001—\$48 million below forecast. The i2 problem resulted in an overall shortfall of \$100 million in sales and made its chairman, president and CEO, Phil Knight, to grouse, “This is what we get for our \$400 million, huh?”

i2 developed new applications and made changes to the software. But, by the time, the changes were made; the inventory problem had already cut

Nike’s bottom line.

i2’s Chief Marketing Officer Katrina Roche says, “In this instance, Nike chose not to follow the implementation methodology. Perhaps we should have been more aggressive in terms of requesting that they follow that methodology. We also felt they had some legitimate objectives that they wanted to achieve through deployment of a private marketplace. We worked with them both to achieve those new objectives... and we also wrote some new software that we’ve since incorporated into our standard code”.

**Nike Rebounds:** It took three years for Nike’s profits and shares to recover after the disclosure of difficulties with i2. Nike reported revenues of \$10.7 billion in the Financial Year 2002-03, an eight per cent increase from the previous financial year. Nike announced that it was the best year of the company’s 31-year history. After the

declaration of results for the quarter ended August 2003, the Chief Financial Officer Donald Blair said, “The positive effects of the tighter supply chain and cleaner inventories drove 75 per cent of the improvement,” in gross profit margins.

After a period of six years and after investing \$500 million (as against planned investment of \$400 million), Wolfram, Vice President, Asia Pacific Region claims that integration within the organisation has reduced the amount of “pre-building” of shoes from 30 per cent of Nike’s total manufacturing units to around three per cent. The lead-time for shoes has gone from nine months to six (in some periods of high demand, it is seven).

“Inventory levels have been reduced from one month to a week in some cases by cutting Nike’s factory order interval time”, says Supply Chain Vice President, Dewey.

How did Nike recover? A sound business case, goal-orientation and clear vision made Nike to recover from the glitch. Nike continued its drive towards its goal without dispensing with its original plans and strategies. It used its learning from failure to its advantage and emerged successful with the supply chain project.

**Lessons learned from Nike’s i2 failure and subsequent recovery:**

- 1. Strong Business Case:** “The lesson of Nike’s failure and subsequent rebound lies in the fact that it had a sound business plan that was widely understood and accepted at every level of the company. Given that resilience, it afforded the company, in the end the i2 failure turned out to be just a speed bump,” said Christopher Koch, Executive Editor, *CIO Magazine*, in 2004. Nike had a clear vision of what it wanted to achieve with its \$400 million investment on IT. It aimed to take three months out of its manufacturing cycle and continued to work to achieve its target even after the things went wrong in 2001. A clear understanding of goal throughout the organisation sustained the project and enabled Nike to achieve its goals.
- 2. Business Process Re-engineering:** ERP gives an opportunity for re-engineering business processes, which is a way of improving business processes and practices in line with the

best business practices. Instead of re-engineering its own processes, Nike chose to customise i2 to accommodate all modifications as per its existing business process requirements. This over-customisation bogged down the entire system.

- 3. Patience:** Had i2 been deployed as a part of its ERP Project, it would have been very easy for the company to get accurate information for production, as it would have needed only one interface with SAP, there being no need of customising i2 to have a link with the legacy system. At the first instance, Nike’s impatience became a good reason for the mis-happenings. But later, with its demonstrated patience, the same software helped it to gain competitive advantage. Wolfram, Vice President, Asia Pacific Region says, “Once we got into this, we quickly realised that what we originally thought was going to be a two-to-three-year effort would be more like five to seven”. Nike CIO, Gordon Steele accepted that they would have done a better job if they had taken more time with the rollout and had the planners (200 users) been better prepared to use the system before it went live.
- 4. Learning from mistakes:** When rashness, inadequate training, unstable software, inadequate and insufficient testing de-

railed and dragged on Nike’s i2 project for years, Nike intensified its efforts and paid due attention to those areas at the time of rolling out SAP R/3. Nike was able to use the learning from the mistakes to its advantage and emerged successful with the R/3 implementation.

**Same Solution at Asian Paints**

The same solution, ‘i2’, was adopted by Asian Paints also. Asian paints aimed to integrate planning with its ERP system. With its planned strategy to replace in-house developed planning system and integrate it with its ERP, Asian Paints was able to achieve ROI within one year. i2 helped it fulfill its goals by achieving accuracy in demand forecasts and reduced inventory levels. “The benefits that we get from using i2 are across virtually all parts of the supply chain,” says Manish Choksi, Vice President, Strategic Planning and Information Technology, Asian Paints.

**Conclusion**

Successfully implementing the ERP project has been compared to reaching the top of Mount Everest. It is a major initiative, a culture change, which needs the commitment of the entire organisation from top management to line staff. It is not a job of the hour. Though it takes time to demonstrate benefits, but a well-planned and structured approach to implementation definitely leads to the fulfillment of goals. □



Diagram: 2: ERP implementations: Critical Success Factors