

Build It or Buy It? **December 2005**



When considering a product like PARIS, one of the first issues a potential customer will always address is whether they can achieve comparable results by writing a solution in-house. The 'Build It, Buy It or Outsource It?' question is not unique to the transportation industry and there will never be one answer to suit all. The best direction for an IT investment strategy is assessed by researching the challenges within the industry, understanding the motivations and considering the technological opportunities now available. This document is intended to briefly outline the alternative solutions available, in the light of the specific challenges faced in today's transportation industry.

The challenges in an ever-changing competitive environment

The market environment within which shipping lines, logistics and transportation companies operate is substantially changing. The industry, already dominated by large vessels, faces additional pressures affecting margin from mergers and acquisitions, rising fuel costs, changing legislation, increased awareness of pollution and road congestion. It is estimated that inland costs account for up to 80% of the total costs of container shipping¹. Therefore, in order to remain competitive, landside logistics has become a revenue base and cost control centre where costs savings need to be realised.

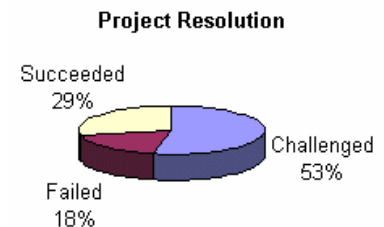
"Carriers are using IT solutions to face the challenges in inland logistics"²

In the arcane world of supply chains, success even for the largest company lies in business relationships and the sagacious use of technology. Companies have to learn to show costs on a real-time basis and openly communicate with suppliers and customers. Those who achieve this improve their businesses and enjoy unusually stable associations with strategic business partners. Unfortunately, some companies get none of these benefits because they retain old attitudes and fail to make internal operations more efficient.

Companies require an IT solution designed to achieve cost gains from improved control of inland logistics. Smarter management of inland load matching to minimise empty running, improved customer service, increased usage of alternative modes of transport and better communication with transport providers are just some of the expectations from an IT solution.

Build It

There is a tradition of bespoke system development in information systems delivery, where a system is developed in-house to meet unique business requirements. This was due both to the lack of any alternative, readily available software packages on the market and the fact that some corporations actively pursue a general policy of in-house development, which they consider to be the best long-term solution, enabling them to develop something specifically designed to meet their requirements. This strategy has proven problematic for companies not usually in the business of delivering complex IT solutions. Additional resources may be required to supplement the team, with the salaries, benefits³ and personnel issues that come with them. Staff time costs money and resources tied up on internal development cost revenue, redirecting focus from the core business. This is why internal development takes so long. Industry-wide statistics reveal that over half of all in-house development projects run approximately 220% over-budget and over-schedule⁴ with a large number of cases actually failing altogether.



Especially relevant to transportation companies who use older legacy software development environments on mainframes or minis, the first step to upgrading their architecture is a major one and needs to be clearly understood. All too often it is assumed that re-inventing the system in-house would be less painful. Unfortunately it is easy for a development team to underestimate the work involved, especially if their background is not from a company specialising in software development. In addition, companies find themselves implementing a system that further cements already stagnating business practices. Often these requirements are undergoing a process of change; what is built today may well not meet tomorrow's needs.

Once developed, the in-house effort to support and maintain the system is critical to the successful use of the software. It can be assumed that because the system is in-house developed, built to support existing company processes, the users should easily adapt and not need the 'bells and whistles' of online help wizards, detailed training sessions and other help documentation. Developing a system is only the start; software is not a one-time cost, but an ongoing effort. As new technologies emerge, adjustments must be made to the software to take advantage of these technologies, up to 80% of information systems budgets can be consumed by maintenance costs.

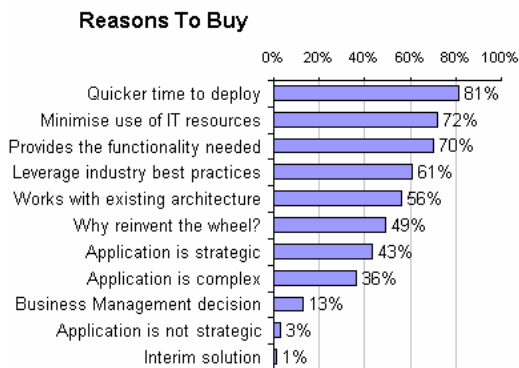
In summary, in an industry where the challenges faced are widespread, where the opportunities for securing cost savings advantages are limited and the objectives are common, there seems little incentive to risk building a solution in-house.

Buy It

A few years ago, transport technology solutions were the province of specialty software vendors, but competition has increased. The complexity of supply chains has spawned an intricate array of software, from those offering visibility at an end to end level, down to those focussing on improving inland transport efficiencies. It is now therefore possible to select a best of breed, technologically advanced solution which constantly evolves to meet new challenges as they emerge. Package software designed for the transportation industry provides room for growth, addressing issues that individual organisations may not have considered and incorporating best practice. With the exposure that any successful package software receives, the requirements of many customers are distilled into a widely adaptable solution. Adaptable in the way it can be used, the business areas it supports and even the way the screens are presented. It is the focus of the vendor to be the best in this field so that their customers directly benefit from a group of experts dedicated to maintaining state of the art technology and techniques.

Improving and innovating in processes, skills and technology, while mediating financial risk through the vendor, in order to maintain the competitive advantage

⁵Unlike the bespoke alternative where the cost of the system is borne completely by the organisation commissioning it, with a software package, the cost is spread across all the potential users, benefiting from hundreds of specialist man years of principled effort⁶ and comprehensive testing cycles. Significant time savings are achieved when implementing a proven system that already exists, also assisting management and user buy-in. Added to this, help material, training support and documentation are a standard software packages feature, well maintained and usually of high quality because they represent an important part of the selling process.



Finally, the issue of maintenance and support: a software provider will bring regular system updates as the software and its benefits expand over time. Software products are usually supported by a formal maintenance

agreement which includes upgrades and new functionality which is often led in agreement with the user community. Although this agreement costs money, it is spread across a number of users and can be offered relatively cheaply to each individual customer.

Consequently there has been a trend towards outsourcing or purchasing best of breed solutions as companies downsize to concentrate on their core business.

The Solution: Buy Smart

As a result, many organisations have focused more on fulfilling their requirements through the purchase of an appropriate software package. The perception is that this is a cheaper, faster and more reliable approach to systems development. Hence the task is to find a package that fulfils user requirements or to differentiate between competing packages that all appear to do the job. Having a clear understanding of your requirements is the only way to ensure the right solution is selected.

“Sales for transportation management systems ...are going to grow at least 8 percent this year because they have manageable implementation times, tangible results and “not the negative war stories” that larger supply-chain applications have.”⁷ “These execution application projects are being approved because they solve very obvious cost or tactical problems,” says Gerald Mc Nerney, senior research analyst for AMR Research.

It is critical that the software selected is highly configurable, easily integrated, demonstrating the performance required and the high level of scalability and reliability needed to support operational business requirements into the future. It is essential to select a software provider that has the industry experience, can offer the end to end service required and has proven software technology with the dedication to continuing to enhance their product to maintain innovative, cutting-edge solutions.

The single most fascinating enigma surrounding supply chains is that pure, raw efficiency doesn't always create the greatest win. How a company *should* direct efforts depends on corporate strategy and "what kind of ROI you're looking for," says Andre E. Spaulding⁸. There are trade-offs to be considered when selecting the right system, "It may be reputation versus financial or bottom-line gains, increased customer service versus perceived quality, tangible versus intangible."

Smart buying also means investing in the best value rather than just the lowest price. Finally, it means taking a flexible approach to purchasing, implementation and requirements so that specifications do not drive up the cost or prolong the time it takes to buy and install the software.

The major lesson learned from any software acquisition or development is "never make an uninformed decision"

Summary

Within the transportation industry it is clear that the challenges faced in inland logistics do not require software re-invention. In fact, this very decision has proven over the years to be fraught with timely and costly failures. Although there can never be a right or wrong answer for every company, there is apt to be a solution or combination of solutions that will match, or come close to matching, the functionality sought by a company. In many cases, an off-the-shelf software package can be customised to fit specifications exactly. It is imperative, however, that any solution is embarked upon armed with all the relevant requirements and pre-requisites necessary to make the right, informed investment decision to support your company's objectives, both now and into the future.

¹ Container Shipping and Ports, Theo Notteboom, The Institute of Transport and Maritime Management, Antwerp (ITMMA), 2004

² Theo Notteboom, see above

³ When evaluating the cost of developing custom software, it is important to realise all of the costs associated with an employee. For instance consider intangibles, such as: benefits, health care and pension and the cost of office tools such as a computer, a desk and office space. In total, the average cost of a capable software engineer can easily reach \$150,000 per year

⁴ © Source = Standish Groups CHAOS reports 2004, based on 50,000 IT projects, 365 companies and 8,380 applications. Project Resolution table definitions: Project Success means delivered on time, on budget, with required features and functions; Challenged means late, over budget, with less than the required features and functions; Failed means cancelled prior to completion or delivered and never used. http://www.standishgroup.com/sample_research/index.php

⁵ Reasons to Buy table statistics were provided by The Data Warehousing Institute, The Rise of Analytic Applications, by Wayne W Eckerson, www.dw-institute.com. Based on 155 responses

⁶ Principled development techniques using software framework as a reusable design to build stable, scalable and high performance systems as discussed in Patterns of Enterprise Application Architecture (The Addison-Wesley Signature Series) by Martin Fowler. Also in the Handbook of Software Architecture, <http://www.booch.com/architecture/index.jsp>

⁷ Making the ROI Case for IT Investment, May 2003, Global Logistics & Supply Chain Strategies

⁸ Assistant director for operations and technology at the University of Miami's Anthony Burns Center for Advanced Supply Chain Management