



Essential Cost-cutting Survival Strategies for the Intermodal Industry

Part One:

Transform your Transportation Management System

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Cost-cutting strategies are presented in this multi-part white paper series based on empirical data gathered from ocean carriers, 3PLs, equipment lessors and others that have already begun to sever their bond with the status quo to achieve substantial savings in the areas of equipment control, asset utilization, transportation and operational productivity. The results are enviable, especially considering the relative simplicity of their approach and the speed of execution, two factors to be especially prized as potential game-winning advantages in the face of a precipitously sliding business cycle.

An Introduction to this Informational Series

Will your company be one of the survivors of the perfect storm of economic and business challenges in 2009? What are you doing to alter an organizational mind-set that has expected year-over-year growth as consistently as the next sunrise?

As expansionist visions have been supplanted virtually overnight by the realities of a contracting market awash in vessel and equipment overcapacity, cost-cutting targets are overshadowing growth targets in the boardroom. Cash is king, and its preservation is paramount to business survival. Maintaining business continuity this year and next will be the reward of the swift and the savvy.

Intermodal leaders face the daunting challenge of wielding a financial axe to cut expenses more deeply than ever without paralyzing their organization. Those who succeed will survive to sail under more prosperous skies. Assuming you and your company are fortunate survivors of this unprecedented business downturn, how will you be prepared to compete in a seascape that may lead to more than just a new wave of super carriers, leasing companies and 3PLS, but a drastically altered global network of partner alliances, services, operational practices, and cost structures? And looking back, if you had better planned how to survive unexpectedly leaner times, what would you have done differently to be positioned to profit in the next market upturn?

This white paper series addresses compelling, creative and newly proven cost-cutting strategies that enable intermodal companies to rethink how they operate and make decisions that affect their profitability. Each installment will demonstrate ways to achieve higher productivity and lower costs while actually improving customer service. It reveals how progressive operators—those already moving purposefully to position themselves for profitability—have begun to embrace these measures. Their zero-based cost mentality leverages proven technology in their new approaches to equipment management, operations and customer service. By combining on-demand web applications, information services and richer data

connectivity with their trading partners, they are able to meet business needs faster, benchmark performance, and streamline workflow to immediately reduce costs.

The strategies presented form a roadmap that positions intermodal transportation and equipment companies to function more effectively in today's environment of austerity while preserving precious capital for tomorrow. It also reveals how companies struggling to stay afloat may be compelled by survival instinct and the real threat of being out-manuevered by their competitors who move beyond the short term approaches of business consolidation, slow-steaming, lay-ups and lay-offs to seize these new opportunities to quickly, and permanently shed additional layers of cost.

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Part One: Transform Your Transportation Management System

“ Why should an intermodal operator invest in developing custom software solutions instead of leveraging commercial systems, particularly for non-strategic applications and those that facilitate routine business workflow with its trading partners? ”

Target Audience

C-Level and Senior Executives

Executive Summary

The expense associated with an intermodal operator developing and maintaining their own enterprise-wide transportation management system (TMS) continues to rise as technology plays an increasingly greater role in servicing customers, interacting with trading partners, capturing revenue and controlling costs through automation of resource-intensive tasks. As legacy systems grow larger, however, they become less nimble and less capable of delivering on their mission of providing greater control, capability and service advantage.

Does this mean that it is time for intermodal operators to scrap their legacy systems and start over? Not likely, or at least not completely. The secret is in leveraging a new generation of web-based services that fortify, not replace existing systems by readily connecting to, and integrating with them to provide capabilities that address a wide spectrum of functions at a fraction of the cost and time associated with custom system development. Companies can choose from a menu of services that can help quickly trim costs in the near term, while measurably improving the way they do business.

Analysis

The case for a company developing and operating their own TMS solution to manage their business has been deeply rooted in necessity. For decades, few off-the-shelf, robust software solutions existed in this specialized transportation niche, and unlike manufacturing, retail, or banking systems, none existed that could manage an entire intermodal enterprise. It is no surprise then that among ocean carriers, a recent study by American Shipper revealed that 59% of their TMS solutions are five or more years old and more than 85% utilize a custom-built or customized TMS.[†]

Today, however, the commercial system void has been filled with a plethora of viable systems from respected

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providers, to the point where a start-up ocean carrier, 3PL or leasing company could potentially function as well as the best-run, well-established players, using almost entirely commercially available software products, and at a fraction of the cost of developing solutions in-house. There is no *single* commercial system available that supports every need of an ocean carrier, 3PL or equipment lessor, but it is not necessary. Proven TMS components exist for booking, documentation, lease management, equipment control, maintenance and repair, dispatch, financials, customer relationship management, and so on. This begs the question, “Why should a company invest in developing custom software solutions instead of leveraging commercial systems, particularly for non-strategic applications and those that facilitate routine business workflow with its trading partners?”

The latest generation of software applications debunk the myth of not being able to have it your own way, often cited as a primary obstacle to their adoption among companies that demand greater systems control in order to address their unique business requirements. Most believers in custom software development tend to exaggerate their fractional operational uniqueness into an organizational belief that they are truly different. This exaggeration often causes intermodal leasing and transportation companies to not look (or not want to look) at the true price they are paying for a marginal difference in value. But this perspective is an understandable carry-over from having developed custom systems for so long.

Modern software architecture has made leading commercial applications highly configurable, customizable, and rich in reporting, communications and connectivity features that are among the most essential components of a TMS. And most of all, commercial systems leverage technology standards like Services Oriented Architecture (SOA), and published Application Programming Interfaces (APIs) that make them fully interoperable with other systems, including custom-built TMS solutions.

Software-as-a-Service as Part of a TMS

There are dozens of successful commercial solutions available that can be combined to form a complete TMS.

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Simply put, modern applications, produced by companies specializing in a particular domain, are increasingly designed not as all-encompassing enterprise systems like those from Oracle or SAP, but as plug-in, modular, best-of-breed application components. These operate as part of a complete system that shares a common, widely supported database from providers such as Oracle, IBM or Microsoft. Such software is increasingly available as a cost-effective, turnkey, on-demand web service, commonly known as a Software-as-a-Service (SaaS) application, and more recently characterized as a ‘cloud’ computing solution. Regardless of the technology label, the application is provided as a scalable service over the Internet and users do not need to have knowledge of, expertise in, or control over the technology infrastructure that supports them.

The result of using commercially available products is that buyers can leverage proven solutions from competing vendors, implement them today, and shave potential years off of custom software development cycles. Deploying commercial applications not only supplants the high cost of development and maintenance, it can also dramatically lower the total cost of ownership by delivering the intended cost-saving value months, or even years sooner. And because commercial providers with critical domain expertise make a trade in selling their solution in a comparatively narrow market, they commit themselves to perpetual product improvement in order to keep their customers happy and support a sustainable business model.

The SaaS business has altered the long time status quo, intentionally enabling customers to exert unusual influence over their vendors. Instead of incurring a large, capital software expense upfront and hoping to receive excellent service and support from their in-house IT departments, SaaS customers typically pay a modest monthly subscription fee in exchange for vastly superior service with respect to reliability, error correction, up-to-date technology, and ongoing application improvements. Additionally, they can benefit from iron-clad Service Level Agreements that compel SaaS providers to meet key performance metrics or risk losing the business.

The Value of SaaS: Drayage Automation Example

Consider the case of automating drayage dispatch, as has recently been accomplished by several leading ocean

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carriers and freight forwarders, which will be examined more closely in a subsequent installment in this informational series.

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Conversely, the result of the longstanding ‘do-it-yourself’ system approach has led to an increasingly burdensome investment in ‘bricks and mortar’, that includes infrastructure, people, and systems to support the business, precisely the factors that need to be reconsidered as part of a long term cost-saving strategy. Rising expenses are attributed to customer and operational demand for more services that rely on technology, such as direct connectivity with trading partners to enable shipment track-and-trace or facilitating routine transactional workflow, and optimizing the flow of equipment to maximize asset utilization. In the noble pursuit of providing excellent customer service and attempting to be all things to all parts of a business, in-house IT resources routinely incur serious custom software development delays, which can trigger compromises in deliverables, timing and value.

Realizing Results Without Compromises

System development postponements are commonplace, caused mainly by resource bottlenecks from projects that command a higher priority. The net effect of system development delays is that some IT departments have become an unexpected and unreasonable factor in determining the cost, speed and efficiency of an intermodal operator’s business. For example, in an ocean carrier environment, with few exceptions, IT resource allocation continues to follow this categorical pecking order: regulatory, marine terminals, customers, rail ramps, depots, and then trucking companies. In the latter three categories, IT developments have languished, often promised but neglected resources for years, contributing

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to ever-bloating operational and service organizations to cope with manual processes.

Until recently, getting what you wanted required custom software programming for most tasks. From business rule changes to billing systems essential to meet the increasing need for commercial flexibility, to modifications to comply with changing Electronic Data Interchange (EDI) standards, or even features to support customer service initiatives like notifications of transport events, it meant a team of people had to be involved in requirements analysis and definition, development, testing, implementation and maintenance. As the technology needs of the intermodal transportation industry continues to mount, leading to increasingly complex, behemoth systems, it makes it more difficult to evolve toward new, and more capable underlying database and control systems to keep pace with business demand. This drives the continued investment in new features upon less capable, less interoperable, and less web-friendly legacy technologies.

Custom programming in enterprise scale legacy environments has contributed to operational stagnation and higher IT costs, especially when applied to a fragile system foundation. And the older the system, the more susceptible it is to disruption when modified. Fragility influenced by weak or non-existent documentation warrants that more resources be involved to understand the actions of potentially many preceding system authors, and the lack of a disciplined software development methodology can result in unstable ‘patched’ source code. Applying further modifications to such software programs can be likened to a house of cards, and changing one part of a large application may unexpectedly disrupt (but hopefully not topple) other parts of an application.

For these reasons, the time to develop a new system release containing a few moderately complex features in an enterprise scale legacy technology based on, for example, IBM’s AS/400 and RPG/Cobol software, or a Unix system based on Oracle forms and PL/SQL, could easily take 18 months and cost \$100,000 or more. By contrast, using today’s modern technology developed as interoperable modules and offered on a SaaS basis, the same result can be achieved in about three months for less than 20% of the cost.

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The need to perform ongoing modifications to systems, the reason companies so often use to rationalize bespoke system development, is where SaaS systems continue to amaze their customers. SaaS applications are typically architected to be highly configurable in order to service the needs of many potential clients and are moving progressively toward self-service of routine tasks, mitigating the need for system administration and maintenance. They can facilitate on-demand changes in customer business rules, readily introduce new transport event messages with trading partners, enable rich reporting and data visualization, and other increasingly important capabilities that constrain legacy systems.

Additionally, with interoperable standards, it is unnecessary to expend precious time and IT resources to evaluate commercial products. Instead, product selection can be largely delegated to the functional group that possesses the greatest understanding of the business need, allowing them to identify and recommend the ideal solution that meets the TMS connectivity requirements established by the IT department. It also allows those talented and scarce IT resources who understand specific areas of unique differentiation to focus exclusively on those areas, redirecting them to the highest and best use of their time.

The Consequences of Custom TMS Development

Developing systems in-house contributes to broader long term cost problems. The effect of failing to upgrade or retool core systems every two years to keep pace with generational technology changes in the marketplace all but ensures the inevitable consequence of retaining a potentially oversized team of IT resources that possesses progressively outdated skills, requiring expensive retraining to enable them to develop new systems.

In the late 1990s, as the need for new systems became paramount, in part driven by the infamous Y2K requirement, companies began to outsource development, initially to transportation domain-entrenched consulting groups that promised more modern systems, but starting around 2000, to off-shore developers who offered a more compelling cost advantage. The effect was that intermodal companies began to lose control of the resource and the technical approach (often complicated by managing and transferring domain knowledge to a distant off-shore team)

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and competitive time-to-market advantage, among the principal reasons supporting development of their own systems in the first place.

Off-shoring custom development ensured that companies would again engage in a one-time, proprietary development effort, justifiably purposed toward advancing the capabilities of their systems, but mainly trading out old for new by recreating existing systems using a more modern, cost-effective and supportable technology. It also often resulted in no more than layering a new veneer on top of an old system. Underneath, the same old system operated that had been around for years, and in some cases even *decades*. And involving outside resources to work on mission critical legacy systems simply added risk. Unfortunately, this myopic approach largely overlooked further cost savings and operational efficiencies offered by commercial alternatives, the providers of which offered a compelling advantage based on the aggregate best practice teachings of the transportation industry.

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Remarkably, the largest steamship lines, 3PLs and equipment lessors are not always the source of the best approach, since smaller firms with a larger reliance on partners and commercial systems have been able to take a fresh look at the market and introduce new processes and systems without the added step of converting a legacy framework.

A further implication of custom development is that for projects that might take several years to complete from concept to implementation, the value of the software’s underlying technology begins to decay before it is ever put to use. This fuels a predetermined cycle of technological and resource obsolescence, and contributes toward consistently operating at higher than necessary cost.

Conclusions

Transforming an existing TMS by plugging in commercially available, SaaS-based software components to address specific business needs can be accomplished in just a few months. This approach not only supplants expensive and more time-consuming IT-related capital expenditure programs at a fraction of the cost and time required compared to custom development, but it paves the way for sizable cost reductions resulting from automation of labor-intensive operational and customer service tasks. And shorter time cycles translate to greater savings because economic savings can be realized sooner.

The interoperable SaaS approach serves to quickly expand capabilities and extend the life of a TMS by *adding and not necessarily replacing* functions that are essential, or may not be considered core or strategic to the business. The result is that operators can immediately tackle priorities that may have been placed on hold as a result of the need to preserve precious cash, or that may not otherwise be addressed, enabling them to get to market sooner to achieve worthy adjunct goals like improving customer service, and saving loads of money.

[†]Higginbotham, Keith, “TMS Benchmark Report: Status Quo—At What Cost?” American Shipper, November 2008.

About IAS

International Asset Systems Limited (IAS) is the global leader in providing intermodal Software-as-a-Service applications and services. IAS’s team of transportation professionals manage the world’s largest intermodal information network, spanning thousands of operators and their trading partners including leading ocean carriers, 3PLs, NVOCCs, IMCs, equipment lessors, motor carriers, repair depots, and railroads.

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