

Establishing Technology Support for Business Process Integration

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National Foods is Australia's largest publicly listed dairy company. The company operates in the milk, dairy foods and specialty cheese markets and has leading brands and market shares in all sectors. It is Australia's only national market milk company. The company employs 2,300 people and has operations in every Australian State, as well as New Zealand. National Foods Business Services Group was created in 2003 with the purpose of creating competitive advantage through innovative, cost effective support services that enable National Foods' business to focus on their core activities.

As part of a successful and growing organization, National Foods Business Services Group faces many of the challenges familiar to fast moving consumer goods companies. With an expanding portfolio of market-leading branded food products, the need for timely and accurate business processing is critical to meeting customer expectations. Lack of business process visibility, loosely integrated business systems, and an increasing demand for electronic commerce create significant barriers to providing high quality services. In a market where an average of 5,000 discrete orders are received, invoiced and delivered every day, 365 days a year, there is no room for delays, downtime, or double-handling.

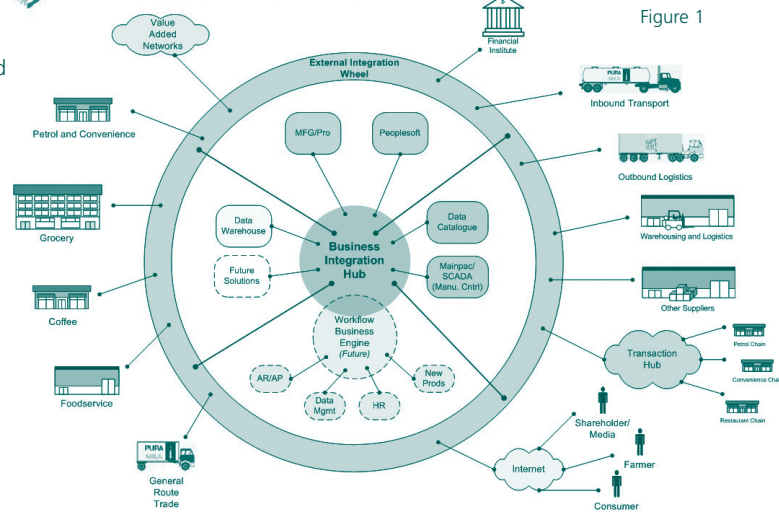
Five years ago, National Foods embarked on a number of projects with the aim of improving processes and their supporting systems. A

major enterprise resource planning system implementation in 2000 saw a number of disparate solutions rolled into a single platform. However, other major systems and a supporting portfolio of specialist and management reporting solutions were not included in scope. Various point-to-point integrated systems were implemented over the following years, supporting processes such as accounts payable, electronic funds transfers, and EDI-based order capture from major customers. These were deployed with limited consideration for process improvement, and with a diverse selection of technologies, most of which required modifications to enterprise systems to accommodate their requirements. As a result, complexity of business and

technology support reached an unsustainable level, while transaction volumes and processing overheads grew at a rapid rate.

A breakthrough came in early 2003 when the IT Solutions Unit, as part of its charter to identify and develop process and technology strategies to improve business performance and support future needs, published a new

Figure 1
National Foods Limited - Integration Hub/Spoke Model



model demonstrating a way in which business systems could be integrated. The "Hub-Spoke" model provided a simple and elegant concept that was immediately understood by stakeholders across the organization (see Figure 1: National Foods Hub-Spoke Model). The inner 'hub' shows a central, common connection point for all business systems within the organization. The outer 'ring' provides a discrete boundary between National Foods and its trading partners. The two elements are joined by 'spokes' representing the flow of information in, around, and beyond the organizational boundaries.

The business benefit of such an approach is not immediately understood by all stakeholders, outside of being a way in which data "pipes" can be rearranged to make moving critical business information through the "processing" systems easier. While pipes and processing are well understood in the manufacturing culture of National Foods, end-to-end business processes and the systems that support them are not. When those business processes transcend intra- and extra-organizational boundaries, the challenge becomes even greater.

The concept of "process modeling" - where an end-to-end business process is mapped and documented to provide an understanding of functions, roles, information and timeliness - has matured over the past five years. Tools to aid business analysts in modeling processes have also grown in capability. Having an understanding of the current state of a process is one of the first steps in making changes and improvements. Overlapping the ability to model a process, with supporting technology to implement that process by integrating existing business systems, provides the catalyst for break-through

change. Add to that the ability to monitor and measure a process instance and you have a powerful toolset for the execution of your business services.

Having reached a critical point in process complexity and IT overheads at National Foods, Project "Dawn" was created to implement these integration capabilities. Gaining sponsorship provided challenges in how to market and "sell" such an approach to senior management, and to demonstrate the expected return in an environment where investments in technology are carefully scrutinized.

Options were presented:

- Maintain the status quo and continue with the operational-level changes made to business systems and processes,
- Re-engineer foundation enterprise systems to extend their integration capabilities,
- Take the integration path and change how the organization can respond to such challenges.

Investment in the enabling technology and organization changes (re-skilling, partnering) was separated out from any immediate business process changes, effectively mitigating risk to the business while the integration foundation was laid down. Project "Dawn" was approved and commenced delivery at a time when National Foods was embarking on a significant program of business system works. An IT services and facilities outsourcing partnership, the implementation of new enterprise reporting capabilities, and the rollout of National Foods enterprise resource planning system to the newly acquired King Island Dairy business. The project dealt with the standard issues associated with any new technology

deployment – ensuring quality, negotiating deployment and acceptance conditions from busy systems support personnel, and ensuring continuity of service to dependant projects which were ramping up to make use of the new integration technologies.

One of the early aims of the project was to ensure that standards had been set for how future business processes were to be integrated. There were no existing guides for such work, and the result was a collection of disparate and hard-wired interfaces requiring significant monitoring and reactionary support. The first deliverable was an "Integration Guidebook". Aimed at both project managers and technical personnel, the Integration Guidebook provides the context for how the systems supporting integrated processes are to be designed, built and delivered. It describes the important demarcation between "integration functions", i.e. moving business information through a process that spans several business systems, transformation, external communication, etc., and "business functions" such as selling, accounting, distribution, etc. This is an important differentiation, as it supports the guiding principle of making use of the right technology for the right job. Supporting the Integration Guidebook were two models aimed at Project Managers charged with delivering such projects; one providing a function point analysis-based model for estimating effort and costs, and another for understanding the impact of a new integration project against the backdrop of existing projects and business systems.

The technology implementation was the second deliverable of Project "Dawn." Selected as the result of detailed Request-for-Proposal and Proof-of-Concept exercises, the webMethods Integration Platform provides the core integration rules engine

and "message broker" – a data delivery facility analogous to a high speed courier service for moving information between business systems. webMethods fulfils the role of the 'hub', 'wheel' and 'spokes' of the "Hub-Spoke" model described earlier, providing the central system upon which all of the organizations' business systems can be joined. Complementing this, webMethods components supporting business process modelling and monitoring were also implemented. With these tools, National Foods was now in a position to "draw" a process, describe the necessary data and business systems to perform functions required by that process, and then deploy it as a live model which can be monitored by business users.

The concept of process monitoring, where a business user can view and control an end-to-end business process, is more familiar to those used to factory-based process control systems. The parallels are simple; manufacturing processes should flow consistently, and only require intervention if there are exceptional circumstances, for example; quality of goods outside of tolerance, or process bottlenecks caused by a slow-down in one of the processing stations. An everyday business process, such as capturing a sales order from a customer, validating and entering it into a business system, is able to be handled in a similar manner. With the webMethods modelling tool, National Foods is able to 'draw' the business process which shows each discrete processing point, describe how the information in that process changes, and what business systems are required to support these functions (see Figure 2:

Modelling a Business Process using webMethods). Once implemented as a live process, the arrival of each new order will trigger an instance of this process, which can then be monitored in order to identify any exceptions that may occur. In this way, the manual overheads of handling thousands of orders per day are distilled down to providing a facility where only exceptions need to be dealt with by

shared by all business processes.

Having a window of visibility into such an order handling process, while useful in itself, is only the start of a larger framework of business process management that can be enabled through such technology. Increasingly, companies such as National Foods are faced with supporting integrated business processes that extend beyond their

organizational boundaries. Major grocery-chain customers are progressively expanding the volume, type, and speed of information they need exchanged with their trading partners. Growing requirements for real-time data and process integration include product catalogue and pricing information, purchase orders and invoices, stock availability, shipping notifications, and collaborative forecasts for future sales. Servicing such a customer base, National Foods partners with refrigerated logistics companies for the warehousing

customer service personnel. Future considerations include adding workflow support capabilities, and the full integration of a central reference data catalogue to be

and fulfilment of customer orders. When the processes for order capture, order acknowledgement and order distribution are combined, a larger, consolidated process

Process Modeling

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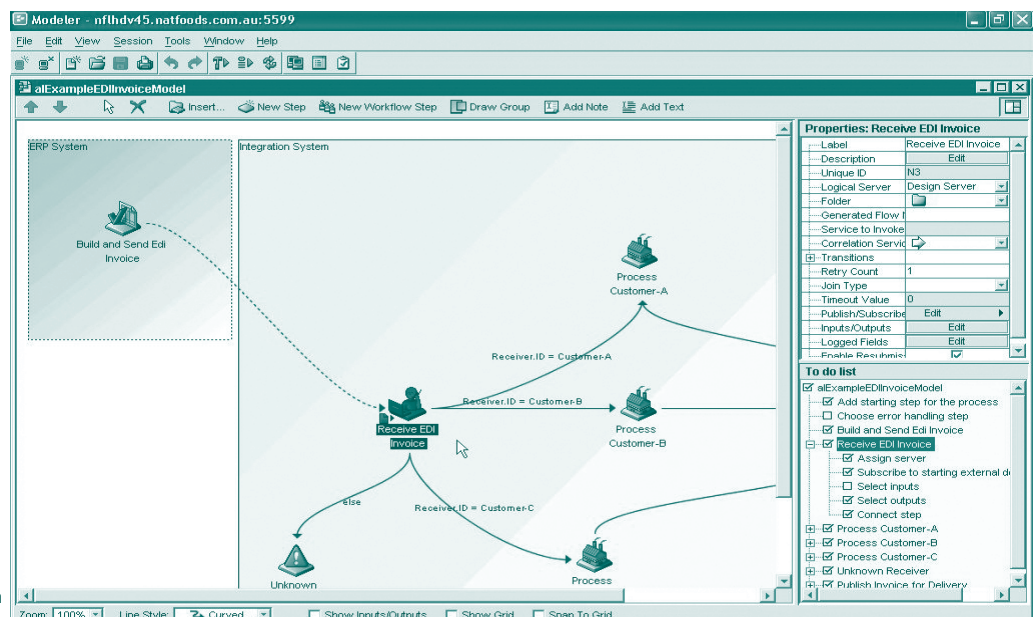


Figure 2

model is presented that represents a realistic and regular business event for National Foods and several trading partners along the supply chain (see Figures 3 and 4).

Such processes, however, are not carved in stone. A customer may decide to route deliveries through a warehouse instead of direct to their stores. Other customers may come on-board and wish to take advantage of such business process capabilities.

Companies or products may be added or removed from the suppliers portfolio, resulting in shifts in the business systems environment. Outside of improvements to visibility and management, the benefit to organizations such as National Foods comes from the ability to rapidly change and re-implement such processes. Modifications to core enterprise systems are costly, take time, and often have flow-on impacts that may take months to identify and resolve. More importantly, the changes made are constrained to those business functions, or products and services, supported by each enterprise system. Should those systems change, or new systems be introduced, the same changes supporting business process integration will need to be introduced, at additional cost to the organization.

The challenges of building, implementing and updating such an integration capability are significant, but achievable. The initial challenge is winning support for such an integration approach and the investment required to implement the supporting technology. Building a business case demonstrating the likely cost-return scenarios, and taking senior managers to see with their own eyes organizations that are following this approach is recommended. The challenges of implementing the technology, especially if it is divergent to an organizations' current technology portfolio, need to be managed closely and mitigated by partnering with experienced and skilled services providers. Standards for integrating business systems must be defined and adhered to.

Inevitably, business processes change. The ability of an organization such as National Foods to respond in such a dynamic environment in a cost-effective and timely manner is directly related to the agility of our business process integration. The results are well worth the challenges - end-to-end business process visibility, better service provided to customers, responsive and efficient handling, and reuse of existing

business systems at greatly reduced cost. It provides a catalyst for streamlining how your business processes execute and are managed, as well as providing a powerful tool for offering a growing range of services to your customers and suppliers.

About the Author



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Alistair Lloyd has been with National Foods Limited close to five years, and is currently Manager eBusiness Solutions within the Business Services Group. In this role he has been responsible for driving technology-lead change supporting the increased adoption of business process and systems integration, as well as analysing the marketplace for opportunities to improve how National Foods interacts with their trading partners. Prior to this role, Alistair designed and delivered a broad range of electronic commerce projects for both National Foods, and his previous employer Unisys Information Services.

Figure 3 - Business Process Model including Customers and Logistics Partners

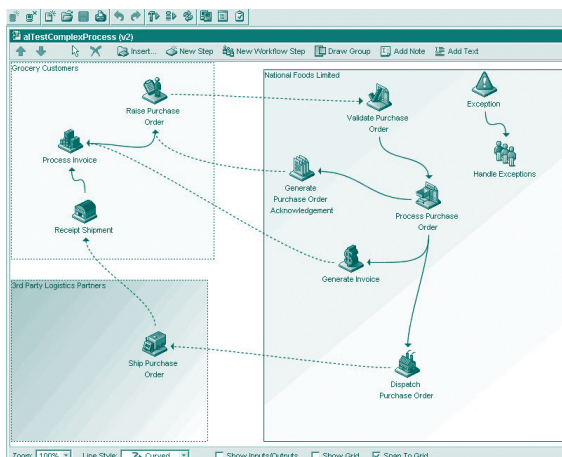


Figure 4 - Monitoring all Trading Partner Activities

