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Software Integration for SMEs

By Thom Leggett

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The Problem

Software integration aims to solve a problem that started when large companies automated processes that had previously been manual; such as finance or human resources. This in itself was a very successful idea, and sent costs tumbling. However, finance developed an application to fit their needs; HR developed another (incompatible) application, and so on... Unfortunately, this resulted in inconsistent data. For example, if the finance and HR applications both required an employee database, it was replicated into each application. With no central source, who was to say which database was the correct one? This not only led to an enormous duplication of effort, but to a large consistency problem.

The previous solutions

There were many approaches to solving this problem and they can be broadly divided into three categories: user interface integration; data integration and business process integration.

User interface integration was the cheapest to implement and required the least change to working practices. The technique was to take all the applications and shoe-horn them into one user interface. Unfortunately this was no more than a cosmetic overhaul and did nothing to address the fundamental problem.

Data integration came in several flavours, most significantly the data-warehousing push of the 80s and 90s. The idea was to do a one-off analysis of all of the information used by a business, design a centralised database and re-implement the applications around it. Unfortunately very few corporations managed to get past the design phase. Lack of decent change management tools and over-ambitious, short-sighted IT directors can take most of the blame for this.

The current solution

The solution of the day is business process integration. Unlike data integration where the idea was to centralise the data and rebuild the applications on top; business process integration aims to integrate on top of the applications.

Software Integration for SMEs

A critical realisation in bringing this about was the existing applications contained important 'business logic' - information about the processes that ran the business. Rather than ditching this altogether why not build a layer on top and in-between that will facilitate integration? This has given birth to a whole new class of software, which has been dubbed 'middleware'.

For Example

Supply Chain Integration is a particular type of business process integration that can reap huge benefits (as well as posing big technical and managerial challenges). The basic idea is to remove some of the unknown variables in your business planning and forecasting; by getting as much information as possible from your supply chain in both directions.

By accessing your suppliers' stock levels, lead times, order status and other information as if it were your own, you can better manage warehouse inventories or production schedules; and therefore provide a more reliable service to your customers. Being able to make, track and settle orders online will further increase your responsiveness to your marketplace.

Allowing your customers access to similar information and services from your organisation will bring more realistic and timely orders, that your customers know already you will be able to fulfil. Integrating your customers will also enable a much more intelligent analysis of your product line: spot an under-performing product before it impacts your bottom line; increase marketing budget for a product that has the potential to go through the roof or implement an on-demand (or as near as possible) production process to minimise your exposure through stock levels.

This is not a task to be undertaken lightly, as the technical issues involved with integrating the different systems that have been implemented by the companies in your supply chain are less than trivial. On the other hand, trying to persuade the same companies to switch from their existing systems to a common platform is likely to be next to impossible. This is where good middleware will come to your rescue.

Why is all this relevant to SME's?

The SME sector is quickly becoming more reliant on technology, and the problem of integration has started to filter down to them. Many SME's are using a few incompatible applications to automate their processes; and have no idea how much integration could benefit them.

So what should I do?

If you have only just started, or still have relatively little reliance on your IT systems, a data warehouse style approach may be most applicable. This can work well from a clean slate, although there are some caveats: Bear in mind that to gain cost-efficiency, you must remain locked in to one software vendor, or your integration costs will far outweigh the potential gains. This carries with it a certain amount of risk in case the vendor withdraws support or even goes bust.

For most SME's a middle-of-the-road approach is preferable: continue using standard off-the-shelf software such as Microsoft Excel, Access, ACT, Sage etc to store and process information; but use customised middleware on top. This will not only save effort and ensure consistency; it can also be used for reporting, or can incorporate newer, more demanding applications such as predictive

software.

Thom is the operations director for Fire Without Smoke Software (FWOSS) Ltd

Project/Program Management Best Practices for Success in ANY Industry!

By Eddie R. Williams

Where is our success? Although there have been improvements, over 60% of projects/programs failed and many were canceled in 2003 (ref:The Standish Report CHAOS)! Our goal for 2004 and beyond is to contribute to a 60% and better, project/program success rate! STOP THE MADNESS—MANAGE AND CONTROL PROJECTS

WITH THE FOLLOWING:

Best Practice Processes for Project/Program Success(Outline):

Program/Project Management (and Business Management) (Integration) Use of Experience and Knowledge (Integration) Planning and Scheduling/WBS (Scope/Time/Cost) Communication Planning (Communication) Status & Earned Value Reporting (Communication) Performance (metrics) Reporting (Communication) Risks Identification and Management (Risks) Project Repository/DB (Communication/Lessons Learned/Knowledge Transfer) Change Management (Integration) Subcontractor/Vendor Control (Procurement) Team Building (Human Resource)

Development Process (Integration/Solution/Scope) Selection of the appropriate model/technique (e.g., Interactive, Waterfall, Spiral, Evolutionary Object Oriented, Structured) Selection of the appropriate implementation methodology (e.g., MSF, RUP, GXP, DOD– STD 2167 and other standards) Selection, if required, to use Rapid Development Rapid Application Development/Joint Application Development (RAD/JAD) Prototypes and Mockups Interviews and Facilitated Sessions Collaboration Selection of technical and project reviews Selection of development and support tools and applications

Configuration Management (Integration/Scope/Control) (described in the book "Software and Firmware Configuration Management", subtitled "Management Control and Quality".) Configuration Identification Configuration Control – Software/Application, Firmware (Embedded Software, and Systems) Configuration Status Accounting Configuration Audits

Quality Assurance (Integration/Quality/Control) Verification Validation Testing

Some of the organizations that support these practices and certifications for their professional knowledge recognized in many industries are: Project Management Institute (PMI) , American Management Association (AMA), Software Engineering Institute (SEI), Electronic Industries Association (EIA), Institute of Electrical and Electronic Engineers (IEEE), International Organization for Standardization (ISO), and the Department of Defense (DOD).

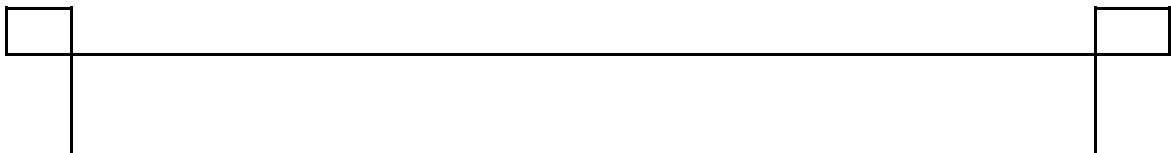
Eddie R. Williams, recognized as a highly successful program/project manager, is the author of the multiple publications written to promote successful projects through methods that have led to his outstanding success. Get the FULL Detailed Best Practice Processes case study at:

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