

A New Approach to ERP Customisation

Acknowledgement

This paper has been adapted from an article published on the "saptechies" web-site. For full text please see the link at the bottom of this document.

Businesses all around the world are increasing their reliance on ERP programs as a cost efficient alternative to their current manual procedures or their piecemeal software applications. However, many current ERP programs suffer from a number of shortcomings which make it especially difficult for the small/mid size organisation to enjoy the tremendous benefits of ERP:

- To support different brands of the package – a costly and cumbersome option that was abandoned by most ERP vendors.
- To mesh all brands into a single package, where "branding" for a specific industry or customer is done by parameters which are selectively flagged to adjust for their "unique" needs. This option is used by most ERP vendors. However, because the vendors need to mesh the needs of different industries within a single, tightly integrated software package, this "flagging process" makes the customisation process complex and expensive. Furthermore, tailoring to a specific customer that is not answered for within the given parameters is harder still.
- To provide an integrated package that permits on-site tailoring which meets specific needs. **Only** Priority, with its SUPERset technology, provides this option

Active ERP

"Active ERP" refers to the incorporation of triggers, alerts and workflow procedures into the logic of the ERP system. These differ significantly from one customer to another, and even among different departments of the same customer. Therefore, their effective incorporation into the ERP program is critical in a true customisation of the software to the customer's needs. However, even though workflow and business rules have become almost mandatory for ERP systems, yet, all ERP systems on the market today require users to hard code (in the source code) triggers, alerts and workflow procedures that are not predefined. This forces them to recode the triggers and procedures when installing the next release (upgrade). The unique architecture of Priority's SUPERset technology (see below) enables this customisation to be carried out in a most costefficient manner, and to preserve such triggers from one version to the next.

The Problem of ERP Implementation

Because of the need to adapt the generic software to the specific needs of the firm, ERP vendors were required to provide tools and utilities that will allow the firm's in house IT personnel or independent consulting firms to customise and personalise the software. Actually, customisation and implementation of ERP software became an industry on its own. AMR Research Inc. estimates that 75% of the ERP market size relates to programming and consulting services for the implementation of ERP in the organisation. The customers also spend several times more money on ERP associated services compared to the purchase of the software license. The industry standard is 3 to 5 times between amount spend on software purchase versus amount spent on software customisation and implementation services. With the evolution of the "Active ERP" systems, the customisation issue becomes even more critical. Active ERP systems incorporate workflow, triggers and alerts as an integral part of their logic. These processes are more susceptible to be customer specific and dynamic over time (and within the same organisation). The current ERP programs do not provide an adequate solution to this problem.

The Solution of Current ERP Programs

The architecture of most ERP systems may be termed the "total package approach". All customerspecific functionality must be included in the "main" single-layer package. A "customiser" is provided to "tailor" the package to the customer's needs out of the massive "main" package. However, the "customiser" is limited in the scope and type of modifications that can be offered. Any functionality that requires "add-ons" of tables, columns and—more importantly—logic, has to be incorporated by the vendor's development team into the "main" package. Obviously, meshing the specific needs of thousands of customers into a single coherent package is a nightmare even for the most talented system analyst. That scarce resource of system analysts who can do the job becomes a real bottleneck for customer requests. Implementation processes could drag on for months and years as customers "wait their turn" for their own modifications to "clear" the vendor's development team. Complexity also prevails during the implementation process at a customer site. It takes a top quality expert to sift through a mature "main" package incorporating a massive volume of functionality in order to "tailor" processes as required by the customer. Although some vendors have invested heavily in trying to simplify that process, it still takes a large amount of time and effort to do the job.

SUPERset – A Unique ERP Technology

Priority software architecture is unique. It is built in a structure that allows:

- (a) Straight-forward adaptation of the software to the customer's specific needs;
- (b) Time-saving implementation of the ERP project;
- (c) Smooth upgradeability with new releases of the ERP program.

SUPERset is built in two layers:

- The first layer contains the basic, most critical and generic components of the ERP modules:

Financials, Distribution & Sales, Customer Service, Manufacturing, Contact Management, Project Management.

- The second layer offers functionality specific to the industry and organisation.

While the first layer is common to all customers, the second adds functionality, including customerspecific changes to the database structure and the application logic.

The novelty of this methodology is this: instead of complicating the base package (the first layer) with organisation-specific functionality that varies from one customer to another, special needs are met by adding functions only to the second layer.

Priority's unique two-layer technology has tremendous benefits from both implementation and customisation perspectives:

Simplified Customisation Process

Eshbel's Priority system architecture revolutionises customisation of the ERP software. A unique set of utilities allows uncompromising flexibility of customisation without sacrificing the ability to install new upgrades and enhancements. The Priority software is entirely dictionary-driven, so that all customisation is stored in tables that can be easily reviewed and revised.

The way it works is simple:

Priority's unique system architecture is basically made up of two parts – (1) source code, stored in the dictionaries, and (2) utilities that interpret the source. To add functionality, the programmer makes changes in the dictionaries where the source code is stored. All these changes are documented in a journal by an automatic facility. When they are carried out on the customer's machine, the changes take effect immediately. If development is performed on a remote machine (i.e. at the customer's development machine or at one of eMerge's offices), an automatic utility builds an "upgrade file" including all changes made in the source. This "upgrade file" is then transferred to the on-site machine, thereby incorporating the appropriate changes into the source. The entire customisation process can be carried out at the customer site, since Eshbel's Priority software (supplied, developed and supported in the UK by eMerge) contains all the necessary development tools as part of the standard package. This capability provides additional flexibility in the customisation process. When a new piece of customer-specific functionality is installed, that function may become available for other projects through the unique library of components held by Eshbel & eMerge.

Library of Customised Components

Priority's technology allows customised modifications, of its various customers (operating, obviously, in a variety of industries), to be stored as independent add-on components in easy-to-retrieve libraries. Installing a piece of functionality from that library at a customer site is a simple exercise for a technician to do. Whenever the required functionality is not found in the library, some programming may be needed. Yet, the architectural simplicity of the system allows this functionality to be added in the second layer, without any interference with the basic first-layer functionality. And the entire customisation can be done on site, resulting in a fast and efficient resolution.

Smooth Upgradeability

In Priority's technology, upgrades of a new release are just another "library component". Just as customisations are simply the addition of sources to the dictionaries, so, too, are upgrades. Traditionally, when a new version is released, it replaces the existing one. The customer receives a set of executable files used instead of the current ones. The parameters and reports (configured in the customiser) are preserved. But when Eshbel releases a new Priority software version, we do not send the executables. Rather, we send an "upgrade file" – just like the one used to create customisations – which adds the changes to the source already installed at the customer site. The added functionality of the new release comes "on top" of what has already been installed at the customer site, including what has already been customised. The customer can continue to work with all existing (customised) programs without disturbance. Only Priority's technology allows for such smooth upgradeability.

Owing to their "single-layer" architecture, other ERP programs require a large amount of work (actually recoding) to retrofit customisation, made in logic and database structures in the current version of the software, for a new release.

Flexible Incorporation of the Firm's Business Rules

Unique manufacturing practices, distribution and management procedures are the heart and sole of any firm. These "business rules" give the organisation its competitive edge in the dynamic marketplace. With the evolution of "Active ERP" systems, which incorporate workflow, triggers and alerts as an integral part of their logic, the need to customise becomes more acute than ever before. Priority's technology provides a wealth of such "active" utilities, allowing customers to freely and easily add as many "active" processes as they need. Priority customers thereby enjoy the best of two worlds: standard off-the-shelf ERP package with rich functionality in all enterprise domains, and a flexible, cost-efficient way to customise the package in keeping with the firm's specific management procedures.

Conclusion

Eshbel's Priority (available in the UK from eMerge Information Technology Ltd) can be heralded as a truly revolutionary ERP solution. It has significant advantages over other solutions; such benefits are rooted firmly in the technology that it employs. The advantages to the customer are clear and very compelling. The result is a solution that is easily adaptable to the client's exact requirements and easily upgradeable thus significantly reducing total cost of ownership.

About eMerge

eMerge Information Technology Ltd. specialises in developing eBusiness, MRP and ERP solutions to a variety of manufacturing and commercial organisations along with providing excellent service and long-term commitment to customers' needs. The company's main expertise and core business is implementing the Priority midrange ERP system and developing additional software systems in the Priority environment. In the internet and B2B world, eMerge has gained expertise using the most advanced technologies and tools providing a variety of services such as Legacy to Web, Business Process Integration, eMarketplaces and Enterprise Application Integration. As well as providing the software tools to enable your enterprise to flourish, eMerge Information Technology Ltd. will supply the expertise and consultancy to update your business practices and procedures to compete with the best in the market.

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