

Operations

Butler Group Subscription Services

Business Process Management TECHNOLOGY AUDIT

Procession

Procession Application Platform

Abstract *The Procession Application Platform is a process-centric development and deployment solution that addresses the requirements of business to develop applications from the process viewpoint. Utilisation of this method of development and deployment allows applications to accurately reflect the processes they describe. By having the integration between process and application at this level, changes in process requirements can be translated directly to the application without the need to remove the application or stop the process running. The solution adheres to standards in use across many industries and utilises the Oracle database to address issues of scalability and availability. Not only is there a better fit between application and requirement, but development time is also reduced using a customisable GUI. A proof-of-concept application (the Financial Forecasting Suite) has been created which is available for deployment but also provides evidence of the effectiveness of the core product set.*

KEY FINDINGS

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| ✓ Close alignment between application and requirement. | ✓ Integration with current implemented processes. |
| ✓ Reduction in development time. | i Requires Oracle database(s) and license(s). |
| ✓ Process change is reflected in application change. | |

Key: ✓ Product Strength ✗ Product Weakness i Point of Information

LOOK AHEAD

Creation of form design through Macromedia Dreamweaver extension will create greater flexibility.

► FUNCTIONALITY

Product Analysis The Process Application Platform is a process-centric development and deployment solution that addresses the requirements of business to develop applications from the process viewpoint. The product consists of five components:

- Procession Process Engine.
- Procession Transformation Engine.
- Procession SSXMQ.
- Procession Web Service Layer.
- Procession Process Designer.

Taking the process-centric view of application development has many advantages; not least of which is creating less of a disjoin between user requirements and deployed application.

Regardless of the application development method chosen by an organisation, there is an inherent desire for the application to reflect the processes it describes. There are two problems with this. Firstly, there is a physical disjoin between the process description and the development cycle. This can be considered as a communication blockage similar to 'Chinese whispers'; something always gets lost in the passing of the message.

Secondly, describing the process in the first instance is not always a simple task. This leads to a situation (even if communication were perfect) whereby the application imperfectly describes the process. In bald terms, the application is seen as failing as it does not carry out the process in the expected manner.

This process/application offset will be familiar to all organisations and has led to the well-known project failure rates, and subsequent blame culture that exists in the vast majority of organisations. What the Procession Application Platform manages to achieve is to remove the disjoin between process description and application development. Within the same framework it allows a constant feedback loop to be implemented with additional development easily carried out to rectify incomplete or badly described processes without the need to take down running processes.

In the Business Process Management (BPM) space there are a plethora of solutions that create models with the use of GUIs that allow the business analysts to describe processes for future development. Although these answer some of the issues by codifying the process activities; thus removing some of the communication problems between process description and the development team, many still operate as separate entities.

The Procession Application Platform is a single entity for description and development, and therefore goes one stage further than many other solutions on the market. The process description model does not just define the application, it creates the application. This is process-centric application development brought to fruition.

Use of the Procession Application Platform reduces development time (thus reducing cost), creates applications that truly operate as the process, and allows changes to processes, either for reasons of incomplete initial description or changing requirements, to be instantly reflected in the deployed application.

Product Operation

The five core components listed previously form a total solution, and their specific functionality is described below.

Procession Process Engine – uses an object-based paradigm combined with a process repository to run process instances. It operates within any J2EE framework, utilising an Oracle database to hold details of process data, process state, and reference data. The choice of Oracle as the only supported database has been taken to do away with the requirement for implementation of separate technologies for scalability and availability. The Procession Process Engine simply hands over these issues to the proven Oracle database.

In terms of operation, the Procession Process Engine fulfils all the expected requirements in this field; such as the ability to create end-to-end process flows utilising both an automated rules approach allied to human interaction. It allows multiple parallel threads to be created with a high degree of flexibility in their operation. Recombination of parallel threads can be carried out in a variety of ways; including:

- **Logical AND Joins** – where all parallel flows into an object are required to be completed before continuance of the process as a single flow.
- **Logical OR Joins** – where all parallel flows into an object are continued as parallel outputs from the objects.
- **First Past the Post Joins** – where any single flow from a series of parallel flows into an object will trigger the output flow from the object, with automatic termination of all other parallel flows, which are now redundant.

With these three flow recombination possibilities the developer has complete control over the process (and application).

The human interaction element of a process (the ability of which, to a large extent, defines BPM) is handled by the use of ‘forms’, which are simply input interfaces used to describe and define data for inclusion into the process. The Procession Process Engine supports both push and pull methodologies for form inclusion into a process flow. Push is used to allow the process to deliver forms to a user via any given transport, whilst pull provides process wait until a form is submitted to the process from a user. The forms used are designed with the Procession Process Designer as part of that component’s functionality.

Data manipulation within a process can be carried out at two distinct levels. The Procession Process Engine allows for ‘simple’ data manipulation to be automated. Tasks such as pre-defined de-normalisation of data from a relational data source, and calculations against data (such as applying a standard rate of tax) can be carried out. The use of the word ‘simple’ should not be taken to imply any degree of limitation in the manipulation notation implemented in the engine, it is used to divorce it from the more complex operations that can be carried out.

Experienced users can manipulate data within a process from an OLTP database, carrying out tasks such as data mining (without the need to migrate data to a data warehouse), or real-time de-normalisation. The data manipulation capabilities of the Procession Process Engine allows process to carry data that is as close to real-time as possible (given the belief that there exists no workable method of measuring data state as it might exist within a process at any given point in time). The closer to real-time data is within a process, the more accurate that process becomes, and the more easy it becomes to rely upon interacting process to provide accurate output.

The Procession Process Engine provides journaling for activities within a process to help gain an understanding of the process flow, identifying bottlenecks and other ‘pain’ points for any given process. Additionally, and most importantly, a full audit trail of every process instance is recorded, providing the proof of operation that is now becoming a requirement for many businesses.

Procession Transformation Engine – is a component-based transformation engine that uses eXtensible Stylesheet Language Transformation (XSLT) to enable mapping-based transformation of data between formats. In order to provide both internal and external transformation capabilities, the Procession Transformation Engine is embedded within the Standard Object Access Protocol (SOAP) Conduit of the Procession Web Service Layer.

Embedding the Procession Transformation Engine allows both B2B and P2P transformations to be carried out within the same process instance. This abstracts integration to a higher level removing the requirement for hard-wired integration both inter- and intra-organisationally.

Procession SSXMQ – is Procession's message queue that accepts messages through process-oriented Conduits. Procession supplies three Conduits that allow for interoperability between standards-based systems.

The SOAP Conduit is used to integrate between internal and external Web services (as described in the description of the Procession Transformation Engine). The e-mail Conduit is based around the Java Mail API allowing for the creation and passing of multi-part e-mail messages. The third example is the Transactional JDBC Conduit that allows the passing of relational data from any JDBC-compliant database. Procession also supplies a Conduit API to allow third-party builds.

Procession Web Service Layer – is deployed in any J2EE application server and provides a range of Web services to external systems. Apart from the range of XML-based services, this component also contains two portals – the Worker and the Management. The former is used to interact with the Procession Process Engine with the use of the forms previously described.

The Management Portal is, unsurprisingly, where the administration of processes is carried out. From this portal a full range of management capabilities is provided. It is also where the role-based administration is carried out, and this is worthy of further explanation.

Procession has implemented a hierarchical structure in terms of management. This is designed to reflect the management structure of an organisation. Rights to view processes, documents, activities, *et al* are defined where within a hierarchical tree a user resides. Similarly, rights to amend these elements are also hierarchy dependent. This is not quite as simple or as possibly insecure as it might sound; it simply defines the first layer definition. A user that sits above another user in the hierarchical structure (a manager above a worker) has the right to view and amend the activities of the lower placed worker, but not *vice versa*.

Of course, using the Process Application Platform, applications can be designed with any number of users with multiple roles. This gives complete flexibility when designing management and hierarchical structures that can reflect the most complicated of business models.

Procession Process Designer – is at one level the expected design element that is common to many (if not all BPM solutions). It incorporates the use of a Microsoft Visio®-based designer tool to help speed up the building of new processes, and the redefinition of those that already exist. It also includes tools for business analysts and designers to allow the high-level definition of processes to be built along with the capability to drill down into the detail layer as the process is developed with the assistance and agreement of the process owners. It uses a point-and-click methodology to drill down into any aspect of the process diagram. Apart from supplying standard diagrammatic representations of process elements, it also allows users to define their own icons; thus creating a work environment with which users feel most comfortable.

At a deeper level it utilises a repository that is used to ensure process validity. It interfaces directly to the Procession XML Design Gateway, which is part of the Procession Web Service Layer, and existing process and implementation details can be uploaded through this gateway. Alternatively, process can be created from scratch using the comprehensive design tools. One factor worthy of note is that the Procession Process Designer does not force any design methodology on the user.

Product Emphasis

Although a highly usable and comprehensive BPM solution; demonstrating a deep understanding of BPM by its creators, this is a crowded and confused market. As such Procession has taken the step of implementing a specific solution built with and deployed on the Procession Application Platform. This is a Financial Forecasting Suite, and will form the first element in helping to promote the core product. Further details of this are described in the Product Strategy Section of this Technology Audit.

► DEPLOYMENT

In principle, the main elements of Procession do not provide an out-of-the-box solution. After all, the reasons behind deploying process management solutions within an organisation are to develop and construct processes that are specific to the needs of that organisation. Therefore, the individual functions need to be specific and focused on company needs, and tailoring the solution is very much part of this.

As with the deployment of any BPM-based solution there is a need for the client organisation to take on board sufficient skills to provide day-to-day support for the products. In terms of the technical support needed to work with Procession, the technical requirement is said to be minimal, and the other expectations of the client are also pretty normal for the deployment of this type of solution. These include systems and network administration, and database administration skills.

The only other requirements of note, and again these are perfectly normal for BPM developments, are the services of a business analyst who understands the company's needs and can work directly with process owners and business managers to build processes using the software. The analyst or analysts concerned can be supplied by Procession if required, or can come from within the end-user organisation or a third-party consultancy, in which case a three-day developers' training course is available. In addition Procession provides help-desk facilities during normal UK office hours.

The deployment timescale for any BPM-styled systems solution is always difficult to quantify. This is because the overall time involved is dependent on the size and number of processes that an organisation intends to build, and as within the Procession solution, a modular approach to delivering processes is accepted as the norm. Following on from this, tuning of processes and supporting interfaces may be required, but this is accepted within the normal build methodology, as it is with other BPM-based solutions.

The Procession solutions will operate on any platform that supports Java 1.3, and on any platform that supports Oracle. On the client side Procession will run with any Hypertext Markup Language 4 (HTML 4)-compliant browser. Database connectivity is normally through thin drivers via the applications server using JDBC to an Oracle database. Procession runs on industry standards including J2EE applications servers, Oracle, Windows NT, Internet Explorer 5 (IE5), and Netscape 6.

► PRODUCT STRATEGY

Going to market with a BPM solution is no easy matter in today's confused and bloated market. The BPM market is relatively unformed at the moment, with many of the major players coming from the large vendors who operate in all markets, and those emerging from the workflow space. Quite rightly, Procession would point out that none of these has its USP of building the application straight from the process, but even that is a message that might get lost.

With this understanding, Procession has designed a ready-to-use application – the Financial Forecasting Suite – built with and deployed on the Procession Application Platform. It is hoped that this will not only be the first of many available solutions, providing additional revenues, but it will also excite interest in the core product.

The Financial Forecasting Suite is designed to provide accurate, near-time monitoring of sales performance allied to a simple to use tool for the sales force to record, update, monitor, and control their sales forecasts.

The Financial Forecasting Suite is a process-driven, Web-enabled, solution that starts with the generation of the sales lead and ends with the cash receipt managing and reporting on all aspects through a series of interlinked modules.

As any organisation involved in this type of business, accurately forecasting the end revenue from a sales lead is a complex process, and liable to change during its lifecycle. Yet management requires a higher degree of understanding of a company's position at any given point in time. Expected revenues change as lead generation becomes contact, and moves through different stages of engagement. This is what the Financial Forecasting Suite manages in a comprehensive manner. At any point in time the expected revenues can be more accurately ascertained as metrics change.

The administrator can remove the right of the manager to view and/or amend if operational requirements call for such an action, but there is no way that this level of refinement can be migrated upwards (a worker would never have the right to view or amend a manager's activities). Although this is a simple structure and does not provide the level of refinement of some management systems that allow for multiple roles to be assigned to a single user, and subsequent complex rights management, it is both elegant and well understood. Those organisations that feel they require a more complex management structure should perhaps consider reducing the complexities within their own organisations before spending large amounts of resource on costly solutions to what is, at heart, a very simple issue.

The sales force can input levels of confidence, which have to be backed up by rationales. Details of meetings can be attached to specific items, and the degree of certainty can be changed based upon a wide range of information that is instantly available.

The details of the Financial Forecasting Suite are numerous, but they demonstrate two key facts. Firstly, building and deploying applications using the Procession Application Platform produces applications that are inherently tied into the process model; there is no disjoin between the two.

Secondly, it clearly demonstrates the ability to utilise the platform to dynamically change processes and have those changes reflected back into the end output.

Although the Financial Forecasting Suite is a dedicated solution for used in organisations that require accurate translation of opportunities into projected revenues it should be of interest to any organisation that wants to see BPM in action. The functional elements of the Financial Forecasting Suite may not apply to every organisation, but the level of detail available from the reporting capabilities; all based on process, and the benefits that this can bring to any organisation should be apparent after review.

Both as a shift in emphasis for Procession and as a dedicated proof point for its core product the Financial Forecasting Suite is an excellent application. In a crowded market, Procession can now not only talk about a USP and a differentiator, but can demonstrate it as well. Something that cannot be stated by all BPM vendors.

► COMPANY PROFILE

Procession was originally formed in 1994 to develop business processes based on the technologies available at the time, and was known as Datacore Ltd. The company retained its original name until 2000 when it was renamed as Procession. It retains its status as a private company, and is owned and funded by private individuals along with a number of institutions.

The company's head office is located in the UK at Chesham, Buckinghamshire, from where its 12 employees operate. It has around 12 established, and in some cases well-known, customers, including:

- Bank of Scotland.
- UK Sport.
- British Telecom.
- New Opportunities Fund.
- The British Olympic Association.
- Instrumentarium (a GE company based in Finland).
- Spintech Group (a company based in Kingdom of Saudi Arabia).
- FT Interactive.

► SUMMARY

The Procession Application Platform takes BPM and application development and ties them together in a most elegant solution. The term 'process-centric application development' could be used by any number of vendors; the devil is in the detail. Procession has created a true process-centric development and deployment platform; removing the disjoin between requirement and implementation.

Based on open standards and using the proven efficiency of the Oracle database in terms of scalability and availability, the applications created and deployed by this toolset will truly reflect the business requirements. Those who consider BPM to be just another three-letter acronym devised to wring more money out of the end user should take a look at this solution.

The same people should also consider exactly what they are trying to achieve with their developed applications. Butler Group believes that applications are, deep down, simply implementations or expressions of processes, and as that is the case then building applications directly from process definitions should make sense even to the most sceptical of potential users.

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