It's About Process (or the Ability To Be Responsive)

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PART 1

After several years (if not decades,) of painstakingly corralling and setting up all their custom data, objects, tables and whatnot, and making sure that these static or dynamic transactional data are secure, many enterprise applications users have realized that the time is long overdue for them to start looking at ways to make their applications more process-savvy.

Companies are increasingly trying to adopt and implement standardized (and yet flexible and easily modifiable) business processes to help their operations run more consistently and smoothly. For example, the chief executive officer (CEO) might decide that as of, say, next month "All customer service cases must be resolved within 24 to 48 hours," or, "We are going to institute a new sales process for all deals worth over $100,000 (USD)."

However, these business processes often get communicated to employees in an ad hoc and unregulated manner. A process document with instructions may exist on a network file share, but people have not the foggiest idea that it's there. And some employees might rely on word-of-mouth information from co-workers (so called "tribal knowledge") to learn the processes for their jobs.

Consequently, standardizing and instituting new business processes can prove challenging for most companies, particularly larger organizations.

Indeed, until recently most enterprise applications have hardly been anything more than glorified databases—they could hold all of the information users may need and allow users to search for records based on various criteria, but they could not really help users to perform the functions of their daily jobs more effectively.

There's still often no native automation and agility within the system that lets, e.g., a recruiter instantly know when the status of a candidate has changed or when a new position requisition has been entered into the system.

Indeed, when any changes are made somewhere in the organization, users have to remember to notify one another of the change or else rely on others finding the updates on their own. Neither solution is practical in the long term and invites the possibility that the software solution or best practice will not be adopted consistently by all employees at the company.

How can one then build processes into enterprise applications so that users won't need to, time and again, rely on manual (pedestrian) methods of communication to inform others of changes which increase the risk of many issues falling through the cracks?

Introducing Workflow Automation

To that end, a built-in or an external standalone add-on tool (or capability) that can be used to solve the process automation problem is called *workflow automation* (or *workflow management*). Some will refer to it as business process management (BPM), and we will shortly try to point out the differences between *workflow* and *BPM*.

Traditional enterprise applications typically feature some built-in functionality, such as a human resource management system (HRMS) or a procurement application, with some capability to tailor the base functionality through parametric configuration options (e.g., via "order types" that entail different mandatory and optional "order steps") that users have to learn by heart.

To be fair, some enterprise applications have introduced workflow capability into their products to give users some ability to control the process behavior of documents such as an invoice or an engineering specification. But in most enterprise applications, workflow is implemented through hard-coding, which means that programmers must develop and maintain the code.

In addition, workflow automation of the typical enterprise application is generally limited o a single document or task routing. This usually means that companies implementing an enterprise application must choose between accepting the vendor's pre-built business process behavior or paying the vendor dearly to make expensive modifications to accommodate more complex processes, which will then make upgrades either costly or impossible.

In contrast, a specialized workflow tool enhances a single task or document routing by providing an integrated capability to include rich user interfaces (UIs), system integration, rule processing and event handling.

Rules are necessary to determine which path users should take next in a process that has multiple possible paths, e.g., an order worth less than $1,000(USD) does not need manager approval, but over that amount it does. On its part, an example of event handling would be a necessary step after a product recall: a "pull from shelves" notification must be sent throughout the distribution channels.

These capabilities can be pretty powerful, since in general, if users can come up with a standard rule that specifies when a particular event should happen, they can make it happen automatically with workflow. In other words, workflow becomes the magic ingredient that transforms many traditional transaction-capturing applications from a glorified database into fully functional tools that basically everyone in the company should find useful.

Workflow Components

The individual components that make up workflow are rules and associated actions — tasks, field updates, and alerts.

In general, a workflow *rule* is the main container for a set of workflow instructions. It includes the criteria for when the workflow should be activated, as well as the particular *actions* that should take place when the criteria for that rule are met. Every workflow rule must be based on a single object that users will choose when they define the rule, as this object then influences the fields that are available for setting workflow activation criteria.

For example, if a user defines a workflow rule for the "Job Application" object in an HR application, s/he will be able to set workflow activation criteria based on the values of fields like "Job Application Number" and "Status". Users can also set workflow activation criteria based on standard fields, like "Record Owner" or "Created Date", as well as fields based on the currently active user when a rule is evaluated, such as their "Role" or "Time Zone".

When a workflow rule is triggered, there are many types of *actions* that can occur, starting with a workflow *task* (or *step*), which assigns a task to a user according to a particular template. Just as in **Microsoft Outlook**, tasks include information about something that needs to be done by a certain time, such as making a telephone call, creating an order, shipping goods, or paying an invoice. Typically, assigned tasks appear in a user's "My Tasks" related list on their home tab (or page) and generate reminder messages that pop up when a user logs in.

When an administrator defines a workflow task, s/he provides default values for data fields like "Assignee", "Subject", "Status", "Priority", and "Due Date" for tasks that are generated by its associated workflow rule. Administrators can also make sure that a notification e-mail is sent to the assignee when a task is automatically generated.

In addition, a workflow *field update* changes the value of a particular field on the record that initially triggered the workflow rule, while a workflow *alert* sends an e-mail according to a specified e-mail template. Unlike workflow tasks, which can only be assigned to users of the application, workflow alerts can be sent to any user or contact, as long as they have a valid e-mail address.

A workflow rule can include any combination of these actions when the rule is triggered. For example, one rule might send out an alert and update two fields on a particular record. The action that one workflow rule takes can also trigger the execution of another workflow rule.

Workflow-enabled Applications

Many enterprise applications today come with built-in workflow management capabilities, such as the Salesforce.com Enterprise Edition, an on-demand customer relationship management (CRM) suite and its on-demand **Force.com** (formerly **Apex**) platform, Agresso Business World (ABW), or Exact E-Synergy, to name only some.

Microsoft Dynamics CRM too includes a workflow module that users can use to automate their business processes based on the rules, logic, and actions that they design. Microsoft has revamped the workflow functionality in **Microsoft Dynamics CRM 4.0** so that it now uses the **Microsoft Windows Workflow Foundation (WF),** whereas previous versions of Microsoft Dynamics CRM used their own proprietary workflow engine.

The result of the revised workflow functionality is that users, administrators, and developers can design and create business processes using the workflow tools with new features and a new UI for creating and monitoring the workflow processes.

Windows WF provides a comprehensive programming model, run-time engine, and tools to manage workflow logic and applications. The Microsoft Dynamics CRM workflow UI relieves users and administrators from the need to interact with WF directly. Therefore, users do not necessarily have to understand the underlying workflow technology to create workflow logic in Microsoft Dynamics CRM.

As a recap, a built-in workflow provides a tool to help companies set up and define business process activities (including the proper sequencing) that involved employees can use when working with the enterprise system's data. Conceptually, one should think of a workflow as an application or service that runs in the background, 24 hours a day, 7 days a week, constantly evaluating the data and the multiple workflow rules in the company's deployment.

When the workflow service encounters a trigger event, it activates the appropriate workflow rules to run the workflow actions. Typical workflow actions include sending an e-mail message, creating a task, and updating a data field on a record.

By implementing workflow processes in the enterprise resource planning (ERP), supply chain management (SCM) or CRM systems deployments, users can enjoy many benefits, such as

1. ensuring that users track and manage their customer data and processes in a consistent fashion—instead of relying on users to remember the appropriate steps for processing data, managers or administrators can create workflow rules that will automatically determine the next required steps and assign activities as necessary;
2. processing the customer data more quickly so that, for example, new sales leads or customer service requests are assigned and routed immediately upon record creation; and
3. allowing users to focus on more value adding activities—instead of having to perform a large number of manual repetitive steps.

Workflow vs. BPM

Both workflow and BPM are systematic approaches and technologies to improve a company's business processes (and performance). From a business perspective, they are ways to make people, information and computers work together more consistently and efficiently to produce needed results.

For example, a workflow/BPM-enabled application could monitor receiving systems for missing or defective items, or walk an employee through the steps to troubleshoot why an order arrived late or not at all.

Both technologies foster ongoing collaboration between information technology (IT) and business users to jointly build applications that effectively integrate people, processes and information. They provide organizations with the ability to define, execute, manage, and refine processes that

- involve human interaction (such as placing or approving orders);
- integrate and work with multiple diverse applications; and
- handle dynamic process rules and changes, not just simple static flows, (i.e., those flows that enable tasks with multiple choices and contingencies/escalations).

The market for workflow and BPM applications is highly stratified and fragmented, in part because the currently available products stem from different origins. Namely, there are former pure integration vendors or document management/enterprise content management (ECM) vendors that have meanwhile encroached into the BPM space.

The difference between workflow tools and BPM suites is largely a semantic distinction, and the gist of the matter is that a workflow engine is at the heart of BPM suites with process execution capabilities. Also, in most cases vendors that sell applications labeled as BPM are aiming at a bigger scope and more complex projects, with elaborate software supporting even more elaborate methodologies, process definition and modeling, collaboration methods, and so on.

Features and capabilities are not necessarily the only differences between tools, since usually the products aimed at simpler processes focus strongly on "ease of use." The designers' assumption is generally that the users are non-IT experts within the company. Such workflow products might be built around the concept of an intelligent form. Basically, the user develops the workflow by filling in a familiar-looking form (e.g., a "tasks vs. actions" matrix), including the business rules.

Yet the limitations of the simpler workflow tools become evident when they attempt to manage inter-process dependencies among several applications, handle complex database integration, and handle tasks that partake in larger, more complex processes.

For more information on BPM, see TEC's earlier articles entitled Business Process Management: How to Orchestrate Your Business , Giving a Business Process Management Edge to Enterprise Resource Planning and Business Process Analysis versus Business Process Management.

Special credit also goes to **CIO Magazine**'s articles entitled ABC: An Introduction to Business Process Management (BPM) and Making Workflow Work and Flow for You. Some useful concepts and examples were also adapted from the **Salesforce.com's AppExchange Developer Network (ADN)** book entitled *Creating On-Demand Applications with AppExchange: An Introduction* and from the **Microsoft Press** book entitled *Working with Microsoft Dynamics CRM 4.0*.

PART 2

Part 1 of this blog series introduced the notions of workflow automation and business process management (BPM). It also tackled the similarities and subtle differences between the two related software categories.

Microsoft, for example, informally demarcates the **Microsoft Windows Workflow Foundation (WF)** focus on "internal processes" from **Microsoft BizTalk Server**'s "external BPM" use. Namely, the first tool (somewhat of a BizTalk spin-off) is used for automating processes within an enterprise (and its enterprise resource planning [ERP] system), whereas the latter is intended for inter-enterprise process orchestrations across several disparate enterprise applications.

BPM Suite Components

Full-fledged BPM system components thus include *visual process modeling*: a graphical depiction of a process that becomes a part of the application and governs how the business process performs when companies run the application.

They also feature *Web and systems integration (SI) technologies*, which include displaying and retrieving data via a Web browser and which enable companies to orchestrate the necessary people and legacy applications into their processes.

Another important BPM component is what's been termed *business activity monitoring (BAM),* which gives reports on exactly how (and how well) the business processes and flows are working (for more information, see TEC's article entitled Business Activity Monitoring—Watching The Store For You).

Optimizing processes that involve people and dynamic change has been traditionally difficult, and one barrier to optimization has been the lack of visibility and ownership for processes that span functional departments or business units, let alone different enterprises. In addition, the industry often changes faster than information technology (IT) departments can update the applications set that the business relies on to do its work, thus stifling innovation, growth, performance, and so on.

But today, the pervasiveness of Web browsers and the emergence of simpler application integration technologies such as Web services, simple object access protocol (SOAP), extensible markup language (XML), business process execution language (BPEL), etc. have enabled IT staff to deploy technology that supports the business process across functional, and technical and organizational silos.

In the broadest sense, BPM components address the issues of the following: process modeling, documentation, certification, collaboration, compliance, optimization, and automation (i.e., via a workflow engine that is rule-based).

Again, highly functional, top-of-the-range BPM suites use graphical (visual) process modeling tools that enable business users and business analysts (i.e., those people that are most familiar with the process) to implement and manage the process definition. To complete any transaction, the BPM suite must also call on various siloed legacy applications that hold necessary information, such as, customer, inventory or logistics data.

But to the ordinary user the complex process that runs over many enterprises and various systems should appear seamless. Users should be spared the effort of hunting down scattered information, since the underlying BPM platform provides tools for

- Business analysts to model (and change) the business processes and define the business rules that control how those processes behave;
- IT departments to integrate the necessary legacy systems;
- Joint teams to build applications for the end user that enforce the processes and rules; and
- Management to review process performance (e.g., the required time to resolve client return exceptions) and even adjust process parameters in real-time (e.g., increasing the dollar value threshold during peak periods to trigger management review and approvals of client returns).

Therefore, the most vital *BPM attributes* would be the following: being event-driven, orchestrated, intended for both internal and external processes and customers, and leveraging human-centric workflow and business analytics.

With the leading BPM platforms and suites, everyone in the company will be working on the same shared data and process model, so changes to the process can be put into action very quickly. This is because these sophisticated platforms provide integrated process modeling, real-time process monitoring, and Web-based management reporting—all working in unison to support rapid process innovation.

BPM—Much More than Integration

BPM is often used to integrate multiple enterprise applications and various internal and external users into a new process, but it goes way beyond mere integration. Whereas traditional *enterprise application integration (EAI)* products help companies to move data between applications, BPM adds interaction with people and the ability to support processes, which then become as manageable as data.

BPM integrates existing applications, Web services and people in order for companies to quickly change, destruct or construct processes as required. Again, BPM enables a company to more cost-effectively and quickly model and change its business processes to meet the specific requirements of a particular business. Via BPM, people can be involved in two ways:

1. From a rank-and-file employee point of view—BPM represents units of work from the business process as tasks, whereby each task contains work instructions, status, priority, due date and other attributes. Workers use BPM to monitor and execute the tasks that are assigned to them or to the workgroup to which they belong.
2. From a manager or executive point of view—Managers and executives use BPM to monitor process performance by viewing graphical reports that summarize task status and alert them to process bottlenecks. They also frequently get involved with tasks by participating in approval or escalation process steps.

Thus, many BPM products provide real-time monitoring and insight into the process operation. The process flow model of BPM allows management the ability to not only easily identify bottlenecks and inefficiencies in the process, but also to more easily modify the process to improve productivity.

For instance, with industrial (plant-level) BPM deployments, companies can digitize their work processes and close the loop on performance with actual execution data. By applying BPM in manufacturing plants, companies can manage and audit their production more effectively and consistently thus improving their conformance, compliance, throughput, and ability to deliver. They can also empower their workforce by integrating people and their roles and by customizing individuals' work styles and decision-making processes.

Astute BPM suites that focus on manufacturing can enable companies to close the loop on production process improvement, digitize good manufacturing practice (GMP) tasks, standard operating procedures (SOPs) and work instructions. They can also enable corrective action and exception management, Hazard Analysis and Critical Control Point (HACCP) monitoring procedures, and also orchestrate high-level processes and manage data between various disparate systems and empower domain experts to solve production problems immediately on the shop floor.

For more information on BPM, see TEC's earlier articles entitled Business Process Management: How to Orchestrate Your Business , Giving a Business Process Management Edge to Enterprise Resource Planning and Business Process Analysis versus Business Process Management."

Special credit also goes to **CIO Magazine**'s articles entitled *ABC: An Introduction to Business Process Management (BPM)* and Making Workflow Work and Flow for You. All of the above articles were leveraged for this blog series thus far.

What's the User's Choice Then?

As said in Part 1, the BPM market remains quite stratified, whereby there seems to be a number of powerful and full fledged BPM software packages (e.g., from **IDS Scheer, Appian, Tibco, Lombardi, Ultimus, Fujitsu, Oracle-BEA Systems, Metastorm**, etc.), many of which can be found in **TEC**'s BPM Evaluation Center.

BPM is considered one of the most overlooked trends in enterprise applications today. In fact, it is increasingly becoming a native part of the **IBM WebSphere** (best shown by the recent acquisition of ILOG), SAP NetWeaver and Oracle Fusion Middleware platforms and applications, which could be a glimpse into the future of modeling, workflow, re-engineering, and continuous change, all around ERP.

For a typical implementation that leverages a comprehensive on-premise (which is still a dominant deployment model) BPM suite, companies should count on forking out up to $500,000 (USD) to address a few meaningful processes in their organization. Moreover, potential hidden costs include (all on top of already hefty investments in existing enterprise applications):

- Having to license and deploy multiple development, test and/or production environments to support multiple BPM initiatives
- Additional application and database server licenses
- Additional staff to provide the care and feeding of these servers
- Internal cost of direct involvement from business users to participate in process modeling, business rule definition, user interface (UI) design, testing and rollout activities

At the lower end of the market there are a slew of workflow-based software packages addressing specific processes, such as bug or issue tracking systems. While upper-range BPM packages address complex business processes and issue tracking systems typically deal with one simple workflow, a number of workflow (possibly BPM wannabe) vendors like **FloWare, Skelta, Red Maple, Web and Flo, Quask, XALT Technologies, ZyLAB Technologies**, etc. are addressing a space in between.

How About Workflow (and Eventually BPM) On-demand?

But again, not many of these solutions are delivered in true no-frills software as a service (SaaS) fashion, as they still require significant hardware, software, and professional service resources to be deployed on the customer's site. Also, some business processes, although mission-critical for the company, are not transactional in nature and do not necessarily need to be part of the back-office database.

In fact, trying to capture every step and status of every little case (e.g., a customer's product complaint or improvement suggestion that needs to be investigated by several employees) would only unnecessarily encumber the ERP or customer relationship management (CRM) database.

Maybe mapping only some critical data between the case management process and ERP database (e.g., for inventory or invoice adjusting purposes), and doing application programming interface (API) exchanges only periodically in a batch fashion might make more sense there.

This brings us to Milwaukee, Wisconsin, (US)-based **Webcom, Inc.,** which is known for its **WebSource CPQ** (standing for "configure, price, and quote") on-demand quote to order (Q2O) suite, established with about 50 high-profile customers. For more information on the Q2O/CPQ market, see **TEC**'s earlier article entitled "Q2O Systems: Solutions for Quotation Management and Pricing Configuration."

PART 3

Part 2 of this blog series continued the introduction of the concepts of workflow automation and business process management (BPM). It also zoomed in on similarities and subtle differences between the two related software categories. Finally, the idea of on-demand workflow and BPM solutions was introduced.

To that end, **Webcom Inc.** has leveraged its vast expertise earned while addressing many complex sales quote-to-order (Q2O) process issues (i.e., channel quote approvals, special pricing approvals, special non-standard product feature request approvals, etc.) and has created a brand new workflow engine, which can be (and is already) used for many generic business processes.

Some examples of processes are RMA (Return Material/Merchandize Authorization), NFR (New Feature Request), ECN (Engineering Change Notice), NPR (New Product Release), Bug Tracking, Engineering Change Request, and many other business processes that require approval steps.

The Ability to Respond, On-demand

In May 2008, Webcom announced the availability of ResponsAbility, its newest offering addressing the case management and workflow processing areas. ResponsAbility is designed to speed the "time-to-resolution" process, eliminate unnecessary time delays and improve overall value chain communications and productivity through improved transparency and collaboration.

The idea behind this case management and workflow solution was to help organizations keep their projects on track and their employees on the same page, thereby making the lives of internal and external team members much less complicated (and more productive and enjoyable).

This straightforward application provides a central location (repository) for managing the key aspects of many types of cases, including product and service defects, customer and supplier complaints, non-conformance issues, health and safety incidents, and RMAs. Separate tabs keep key information within easy reach, whereby team members can log issues as they arise, prioritize them, and update their status as appropriate.

Built-in reports let users see open issues by project, projects by stage, and many other categories. On the proactive side, the tool can be leveraged by companies to create and implement corrective and preventive actions (CAPA) and to support a plethora of regulatory and compliance requirements. All in all, users that have always had the responsibility now have the "ability to respond", as required.

This case management software may not currently have all the "bells and whistles" associated with full-fledged BPM packages, such as programmatically driving a workflow engine, visual process modeling, process monitoring and optimization, or automatic task allocation based on workload. Still, it seems well suited for small and medium size companies, that can leverage such a software tool with an intuitive user interface (UI), for handling many, if not all of their processes, in an incremental manner.

The design and enforcement of processes is enabled because both administrators and users are able to design workflows, notifications, and data collection forms, as well as setting up permissions accordingly. The system manages cases by ushering each case through the resolution process, and by tracking the progress of each case throughout the entire process.

The multitenant software as a service (SaaS) delivery model ensures that a customer can be up and running quickly with all of the selected critical processes being modeled and functional. No onsite deployment is necessary and the software only requires a Web browser and some modest to minimal data and process setup to be up and running.

Brethren Software Vendors as Likely ResponsAbility Users?

For example, a software development company can deploy this tool within a day or two and allow its customers to report bugs. This information can then be internally routed according to a customized workflow to the support department, then to the engineering and testing staff, and then back to the customer for approval and case closure.

To elaborate, the *Software Bug* workflow logically starts with the customer reporting a software bug. Then a default assignee at the software vendor reviews it, and then either resolves it on the spot (hopefully) or assigns it to the software engineering staff by providing a test case. Then the software engineering team determines the cause for the bug and either provides a workaround, fully fixes the bug, or determines that the software behaves as designed after all.

At the same time, ResponsAbility can be used to allow customers to create new feature requests, which are then routed via a different customized workflow starting from project management, via development, release scheduling, back to development, quality assurance (QA), documentation (technical writers), product management, and finally to marketing teams.

Again, if the bug can be fixed, the case is assigned to the testing staff, back to the support team, and finally back to the customer for approval and case closure. But, if the issue turns out not to be the bug after all, the case is then converted to a new feature request and follows an entirely different workflow.

To that end, the *New Product Feature Request* process starts with customers, sales and service people, channels, or product managers requesting a new feature. Often, the existing users (install base special interest groups [SIGs]) are allowed to vote on it, and based on the number of votes and other factors, some new features are assigned to the engineering department to estimate the effort entailed to implement the requested feature.

Based on the estimate and other criteria, some new features are then assigned to the engineering or research and development (R&D) departments for implementation. Upon implementation, the new feature is assigned to the QA department for testing and approvals. Finally, based on the QA results, a new feature is returned back to engineering for a rework or is scheduled for production (or general availability).

Apparently, various instances of a process (called cases) can be changed midstream. For example, something that was initially entered as a bug upon investigation may be classified as an expected behavior. The customer who did not expect such behavior from the software can then change this case from a bug to a new feature request, without having to re-enter any information, and this case will then follow the prescribed new feature workflow process.

Also, a built-in notification and permissions engine ensures that all communication and collaboration happens within ResponsAbility, so everybody is aware of anything that anybody ever stated about the case via comments, file attachments, etc.

Unlike some of the simple issues tracking software packages mentioned in Part 2, ResponsAbility can be used not only for tracking things, but also for enforcing a process in order to ensure that things get done correctly. For example, a workflow engine can be set up to make sure that a process status cannot be changed from "bug fixed" to "in testing" until a concrete test case scenario is provided by a user via customizable online forms.

Webcom—"Eating Its Own Dog Food"

It's interesting to note that Webcom, as a software developer itself, has since late 2006 been using ResponsAbility internally for its older sibling WebSource CPQ product's bug tracking and new product features introduction.

The traditional model, whereby the dedicated product or project manager and support staff were the only bidirectional conduit between the client's team (i.e., WebSource CPQ users and administrators, local project manager, application owners, stakeholders, etc.) and Webcom's team (i.e., developers, modelers, QA, consultants, product managers, etc.), has over time been shown to have many disadvantages.

Namely, despite the intimate knowledge the dedicated project manager has of the individual client's installation, the established relationship, and hand-holding comfort level, challenges have repeatedly been from the bottleneck-nature of the project management and support team, with no significant value being added by this additional layer of communication.

Other disadvantages are the all too often "black hole" syndrome resulting from the lack of a single project/client/tasks/issues depository. Therefore, priorities are often managed on an inefficient (and often redundant or conflicting) one-to-one basis.

The advantages of the new support model, with ResponsAbility providing a single repository of all cases (in a hub-and-spoke manner), start with collaboration and the ability for all parties to both instantly contribute to the case/task/issue and have instant visibility into the case status. Also, new resources that include clients, Webcom employees and third-parties (partners) can all immediately participate and be notified, while the enabler for everyone is also an advanced searching capability within the system.

The Webcom Q2O clients' adoption was initially somewhat tepid due to the ingrained human habit of e-mailing or calling directly the preferred contact or due to the clients having their own issue tracking systems. Of course, there is always the need for a human touch and chatting (as a "bonus") with Webcom associates about the "critical" issues like a "lovely" winter weather in Wisconsin or about the **Green Bay Packers'** revival.

Nonetheless, joking aside, from the end of 2007 ResponsAbility has been the sole vehicle for communication, tracking and managing tasks and cases at Webcom. Prior to that, Webcom had used the **JIRA issue tracking system**, which at the time allowed users to create a workflow based on a set of offered statuses.

However, at the time (the things might have meanwhile changed though) there was not the user's ability to create statuses and workflows at will. For instance, the offered statuses were "open," "in progress," "closed," etc., but the user could not create a custom status like "material returned," "in engineering," "being analyzed" or so on.

Further, users could add custom fields, but they could not design forms in a drag-and-drop fashion. There was no way to specify forms and fields for each action (task) either, so that, e.g., when the process passes from the "bug fixed" into the "in testing" phase, the user could not create a mandatory field named "test case." While administrators had ample controls, the users had very little control over what fields they could see on the screen, and so on.

Key ResponsAbility Design Tenets

In contrast, ResponsAbility was built with several design concepts in mind, starting with *scalability* in terms of users' ability to create an unlimited number of cases, processes, statuses, status transitions, custom fields, users, user types, departments, etc.

There is also *flexibility* in terms of creating permissions (e.g., by project, by process, by custom fields, etc.) and the assigning of rules and permissions is visible system-wide. As for data flexibility, there are custom fields and forms and process-related fields and forms, while at each process point (step) fields can be assigned as read-only (viewable), editable, or required (mandatory). There is also a flexible definition of assignments, notifications, and recipients, whereby conditional actions drive implicit and explicit notifications.

Furthermore, the *ease-of-use* concept translates into hardly any training required, whereby the idea for the tool is to be perceived by users as their enabler for getting things done instead of an enforced mandatory tracking tool by the "ivory tower." Some examples of the ease-of-use features are

- An intuitive drag-and-drop interface for administrators to design and preview online forms;
- An instant system feedback regarding the field size, informing users how many characters they still have left or by how many characters they have exceeded the maximum field size, and all of this happens dynamically while they are still typing;

- When looking at the list of cases, dragging a mouse over a case will bring additional fields in a hover (a so called "mouseover"), so that a user can find out more about each case while browsing a list, without having to open each case (thereby saving valuable time); and
- Each list of cases can be customized (personalized) by users in order to show fields as columns based on what that user is interested in or what a user considers to be important. If, e.g., a case type has 100 fields, it is impractical to put them all as columns in a list of cases on the screen. It is also impossible to select 10 most important fields universally because their importance depends on individual user needs. Therefore, each user can determine (select), in a drag-and drop manner, which fields are truly important for them.

Last but not least, the *ease-of-setup* tenet starts with a pre-built library of processes, but companies can certainly create their own processes with an intuitive and flexible setup of forms, workflows, notifications, and permissions. In addition to the abovementioned advanced search capability, users have a facility of unlimited comments and uploading of attachments.

The administrator is able to create brand new processes, new fields and forms and to define the workflow(s) for new processes. S/he can define which field and when in the process is mandatory, visible, hidden and for whom. The administrator is also able to define who has access to which types of cases and projects, who can oversee which users, and so on.

It is thus small wonder that ResponsAbility has reportedly been deployed in only a few days at some customer sites including setting up processes, users, permissions, and import of legacy data.

PART 4

Part 3 of this blog series introduced **Webcom ResponsAbility**, the on-demand workflow automation and business process management (BPM) solution. Anyone interested can take the product for a free trial test drive here.

Other Real Life ResponsAbility Use Examples

In addition to the examples described in Part 3, another example of the ResponsAbility software in use can be found in Grayhill, Inc. an electronics manufacturer from Lagrange, Illinois (US), servicing industrial and government customers. While the company has been a long-term **WebSource CPQ** user for sales configuration purposes, the ResponsAbility sibling was later introduced for managing several processes, among them for product returns or return merchandize authorizations (RMAs).

Customer return requests are either imported from the company's enterprise resource planning (ERP) system or directly entered by customers or Grayhill associates into ResponsAbility as a "request for material return." Based on the entered data via a customized form, the return is authorized or denied. Namely, a default assignee reviews a request and approves it, rejects it, or asks the customer for additional clarifications.

Upon authorization, when the goods are received a case gets assigned to the quality assurance (QA) team. This is another "gate review" step in the process where the quality team determines if the failure is due to a product defect or misuse (user-induced damage). If a case is determined to be a defect, then the part is repaired at no cost or a new part is sent to a customer.

The defective part is also sent to the engineering department for analysis to determine the root cause and future corrective actions. Namely, in order to ensure the highest quality for which Grayhill is known, the case cannot be closed until all the corrective and preventive action (CAPA) requirements are fulfilled. To that end, the following outputs must be generated: the detailed explanation of the root cause of the problem, the short-term fix, the long-term fix, sent a final report to the customer, etc.

If it is not a defective part case, the case is closed and the goods are returned to the customer, who may in turn elect to convert it to a special service request case type. Logically then, another workflow process is followed, consisting of steps such as creating a service estimate, approval, service fulfillment (repair), invoicing, etc.

In other words, in case of misuse, the customer is asked to authorize a repair for a fee. If and when an approval is received, the product is repaired and the case is closed. Similar to the new feature request vs. bug software example from Part 3, a repair service for fee process follows its own workflow via the repair department and QA, and then is shipped to the customer.

Ken Hoving, Grayhill's vice president (VP) of corporate quality said

> *"The Webcom solution allowed us to consolidate all of our customer corrective actions in one system and enable web access across the entire organization, including our customers, resulting in cycle time improvements and increased customer satisfaction."*

Also, the company asserts that due to all the system's nifty drag-and-drop Web 2.0 personalization capabilities for both users and administrators, the BPM tool is not something that users feel forced to use, but they truly want to use it because it helps them to do a better job. They do not have to worry about forgetting to do something or missing a step in a rush, since ResponsAbility ensures that the process is thorough and consistent each time.

Another important process that ResponsAbility enables at Grayhill is *SDPR (Special Design Pricing Request)*.

Namely, when a prospective customer inquires about a product that Grayhill does not currently manufacture as a standard, then such a request gets routed via a number of departments, starting with sales that captures the detailed inquiry or request. Then, the engineering team will estimate the cost or time to complete the special request, while the marketing and accounting staff will analyze the economic viability of the special job (it is still expected to be some batch or series production rather than a one-off engineer-to-order [ETO] product), and create a catalog number and its price (quote).

Before that happens and the sales department can communicate to the customer Grayhill's interest and official price (quote), several collaborative iterations have to take place between the customer, Grayhill and its vendors (e.g., the special tooling and fixtures' cost and lead time discussion).

Product Information Management Example

Broan-NuTone, based in Hartford, Wisconsin (US), and North America's leading manufacturer and distributor of residential ventilation products is another combined WebSource CPQ and ResponsAbility user. Its products include range hoods, ventilation fans, heater/fan/light combination units, indoor air quality (IAQ) fresh air systems, built-in heaters, whole-house fans, attic ventilators, paddle fans, and trash compactors.

The company has thousands of products, each with a slew of attributes such as length, width, material, standards to comply with (e.g., the UL Safety Standard, Canadian Standards Association [CSA], CE-Marking, etc.), voltage, power, air flow, and so on. The goal is to publish all that vast catalog data electronically via WebSource CPQ.

However, that cannot happen without consolidating all of the above data for all of the company's products. ResponsAbility comes into the picture here, whereby each product will go through a special product information management (PIM) workflow.

Namely, the engineering team will have to fill in over hundred data points for each product, the marketing staff will add in their pertinent data, and product management will then have to fill the various product prices (list price, distributor price, wholesale price, etc.). Once the PIM case is closed, a prepared **Microsoft Excel** document with all of the required data about all the products in a product family can be imported into WebSource CPQ.

"After months of review and the evaluation of numerous vendors to help implement a Product Information Management system, we chose ResponsAbility from Webcom," stated Mark Hughes, Internet Marketing Manager at Broan-NuTone. "Having several thousand products to manage from conception to obsolescence, we wanted to have stability out of the box. We feel that ResponsAbility is the perfect fit," added Hughes.

Underlying ResponsAbility Technology

With some research indicating customer acquisition costing multiple times more than customer retention, ResponsAbility complements Webcom's quote-to-order (Q2O) solution, WebSource CPQ, and continues the company's focus on simplifying complex business processes.

"Attaining your goals and objectives requires not only a focus on obtaining new business through a quote-to-order solution such as WebSource CPQ, but just as rigorous a focus on retaining your most treasured asset, your customers," commented Aleksandar Ivanovic, Webcom's chief executive officer (CEO) and founder.

"ResponsAbility is just the type of solution needed to help drive customer satisfaction, innovation and repeat business", added Ivanovic. "Especially in today's uncertain economy, driving productivity through repeatable and reliable processes is crucial to success, and ResponsAbility could be a valuable tool helping companies improve customer service through nimbleness and implement process control."

However, in order not to create internal competition for research and development (R&D) resources, WebSource CPQ and ResponsAbility, although both being offered on-demand, have intentionally been developed on two different technologies, **Microsoft .NET Framework** and **Java 2 Enterprise Edition (J2EE),** respectively. For more information, see **TEC**'s earlier article entitled Understand J2EE and .NET Environments Before You Choose.

Some best-practices sharing between the two teams could still be possible on the user interface (UI) side, since both products leverage Asynchronous Java and XML (AJAX) for rich client enablement and Web 2.0 gadgets. Although the two products are currently English-only, a common translation mechanism for other languages is being developed. Both products will be able to leverage these schemas for deployments in several languages. However, the decision on which languages to tackle first and deliver has yet to be made.

But, in contrast to WebSource CPQ, ResponsAbility is enabled for the Hibernate database-independent object/relational persistence and query service. The product features full audit trail and archiving capabilities, and the ability to export data in the CSV (comma separated values), Microsoft Excel, XML (extensible markup language), **Adobe** PDF (portable data file), and RTF (rich text file) file formats.

KISS IT or Leave IT

Webcom's main challenge with the new workflow/BPM product will be to balance its "keep it straight and simple (KISS)" mantra with the complexity of full-fledged BPM applications' deployments. On the one hand, the vendor positions ResponsAbility as a "lite BPM" product, given that it features much more capabilities than a mere workflow product, but on the other hand, it is far more limited than any other notable BPM suite's functional footprint at this stage.

To be fair, some BPM functional requirements can be rendered moot in the on-demand model. In fact, product versioning, acceptance testing or whether workflow notification mechanisms can integrate with desktop products or interact via e-mail are all capabilities that are a "big deal" for client/server on-premise BPM deployments, but are virtually irrelevant in software as a service (SaaS) subscription-based deployments.

The same goes for integration with third-party integrated development environments (IDEs) due to the web-based workflow modeling environment within ResponsAbility. Indeed, IDEs like **Microsoft Visual Studio** are relevant for on-premise programming development, i.e., for writing source code, compiling it and making it executable code. In contrast to that, workflow modeling within ResponsAbility does not require coding, compiling, server deployment, etc. Furthermore, the SaaS deployment model completely obviates the need to buy and install an IDE.

It might be interesting to note here that Salesforce.com, when it started several years ago (and likely even still today) only had a fraction of customer relationship management (CRM) functionality that Oracle Siebel had (and still has today). Still, this functional deficiency did not stop the on-demand CRM pioneer from succeeding.

The goal is not necessarily to out-feature other software packages, since most of them already have so much functionality that much is never implemented or used (as can be seen in TEC's article entitled Application Erosion: Eating Away at Your Hard Earned Value).

Thus, Webcom's main goal is to make ResponsAbility so easy to set up and so easy to use that there will never be a failed implementation or a disgruntled customer. The goal is to quickly and simply help people to get their respective jobs done in a way that they get almost addicted to the tool, so much so that they cannot even imagine doing it any other way.

For what is worth, getting back to the "eating its own dog food" mantra from Part 3, Webcom's staff admits to being addicted to ResponsAbility. If they look at their own statistics, which are available in the application, each Webcom employee will have personally performed thousands of transactions therein.

In the next product release, due in the fall of 2008 (which is another advantage of the SaaS development—the frequency of new releases), Webcom will be adding several new features, such as visual workflow and process designer, rules and conditions, escalations, service level agreement (SLA) tiers, field dependencies, scheduled events, analytics (graphs, charts, trends), etc. Features like Web Services application programming interface (API), support for personal digital assistant (PDA) and other mobile devices, case and task interdependencies, etc. might come in future product releases.

While the vendor strongly believes that ease-of-use and ease-of-setup are far more important than a long list of out-of-the-box supported features, it is necessary to have some of those in the request for information (RFI)/request for proposal (RFP) phase of any selection project to avoid outright elimination.

Even though some of the capabilities which are often marked as a "must have" will likely never be implemented by prospective clients, the selection team wants to make a safe decision and have all of their bases covered. Without those capabilities on paper, ResponsAbility may get eliminated before users ever get a chance to fall in love with the application.

Webcom also strongly believes that if users need to be trained extensively on how to use the application, the product will have failed. We concur that no one can expect customers and partners (channel and supply) to take additional classes on how to collaborate with the company using its applications.

The software needs to be as intuitive as going to the **Amazon.com** web site and buying a book or a CD, or going to **Google** and doing a search. It is Webcom's approach that until it figures out how to make each feature that intuitive, it will not introduce it in the application.

Current State of Affairs

ResponsAbility has been generally available (GA) since May 2008, with a free trial option. Deployed in a SaaS subscription model, pricing starts at $19.95 (USD) per user per month for an internal user, and $4.95 (USD) per user per month for an external user/trading partner (or alternatively 99 cents per each case generated by external users). Such aggressive pricing á là music downloads are hoped to generate the initial "critical mass" user base.

Webcom also recently announced the expected availability of ResponsAbility for Salesforce.com's **AppExchange** directory of on-demand applications. Leveraging Salesforce.com's **Force.com** platform, the next ResponsAbility release (expected in September or so) will be available for test drive and deployment at the AppExchange site. There is already GA for the **Oracle CRM OnDemand ecosystem**.

Every customer that installs the software over the Web in a self-service manner gets the following four default workflow process templates: Bug Resolution, New Feature Request (NFR), Engineering Change Notice (ECN) and RMA. Certainly, customers can define and create their own process templates to their heart's content. The experience has shown that it typically requires a few hours for a major business process to be thought out and defined.

As additional food for thought, here is a (partial) list of potential groups of processes within various lines of businesses (LoBs) or departments that could hereby be automated:

- *Finance*—asset management tracking, budget approval, invoice approval, payment request, capital acquisition request, credit approval, merger and acquisition (M&A) tracking, etc.;
- *Product Development*—product specification approval, product change notice, engineering change request, issue management, enhancement and new features requests;

- *Back-office (Administration)*—expense claims, travel authorizations, help desk requests, purchase requests, document change control, etc.;
- *Customer Service*—call management, field service management, case handling, customer survey forms, information technology (IT) services request, etc.;
- *Human Resources*—new hire setup requests, training enrollment, certification alerts, etc.; and
- *Sales*—lead qualification, sales quote approval, commissions notifications, etc.

The final part of this blog series will complete the series with some of Webcom's ResponsAbility specific and general workflow/BPM offerings' value propositions and conclusions. In the meantime, your comments, thoughts, suggestions or individual experiences with workflow/BPM tools are more than welcome.

PART 5

Part 4 of this blog series further analyzed **Webcom ResponsAbility**, the on-demand workflow automation and business process management (BPM) solution. Anyone interested can take the product for a free trial test drive here. The vendor just released the **ResponsAbility p4** release.

Competitive Offerings Do Exist

Still, Webcom's first-to-market (or close to) BPM on-demand advantage has already been challenged by the solutions from **Skemma, Appian** [evaluate this product], **Lombardi** [evaluate this product], **Colosa ProcessMaker** [evaluate this product], **Pipevines**, and **The Process Factory (powered by Cordys),** to name only a few.

Even the likes of **QPR Software**, although not necessarily multitenant software as a service (SaaS)-based, have an enticing approach to providing BPM solutions, which allows a phased approach for BPM suites' adoption. The major benefit of this approach is that a company does not have to commit a large amount of resources to "make or break" a BPM project. Instead, this flexible BPM adoption approach allows customers to implement BPM in-house at a pace that suits them best.

As a counter move, Webcom is pondering about offering the product in different editions (tiers), whereby the current largely case management capabilities would constitute the *ResponsAbility Basic Edition*. The upcoming fall enhancements that were mentioned in Part 4 would then create the *Professional Edition*, as a "BPM Lite" product of sort.

Once the Web services application programming interface (API), mobility support, case and task interdependencies are incorporated too, Webcom plans to release the *Enterprise Edition*, as a fully functional BPM suite. The pricing details for these are yet to be articulated. There is also a temptation for viral marketing and offering a *ResponsAbility Free Edition*, of course with some significant limits (e.g., in terms of the number of users, cases, modifications, etc.), whereby companies can at any time opt to switch to the full edition for much more functionality (and a fee).

ResponsAbility's Value Proposition

ResponsAbility's benefits, reported by the early adopters (and touted to the hypothetical customer), revolve around process automation, simplification, and acceleration. For one, an *increased reported-to-resolution speed* comes from elimination of time delays associated with customarily forever collecting feedback, clarifications, or comments from the many parties involved.

Within ResponsAbility, at any point in time every case is somebody's, well, responsibility and their input is immediately accepted and rendered within a case. It becomes much easier to identify, manage, resolve, and follow-up on any issue. In other words, no issue can slip through the cracks, since the issue status and history will indicate exactly where it is in the process, who has it, who has had it and for how long, what was done, etc.

Improved internal and external customer satisfaction is the result of allowing customers real-time access to information about what is being done to each one of their cases. In addition, companies can *improve their products or services* by collecting and analyzing feedback from their customers, users, sales, etc.

This dovetails into *improved transparency and collaboration*, whereby team members can share access and work in the same space across departments, divisions, and enterprises. The use of powerful search, sort, and filter capabilities within the system serves to capture and access the so-called "tribal knowledge" within an organization.

Increased productivity comes from the elimination of the time so often needed to find the information across multiple places such as e-mails, voice mails, file servers, web pages, etc., given that all relevant information is now contained in a particular case within ResponsAbility, and is a click away. Last but not least, all of the above benefits lead to *reduced business process costs*.

Dovetailing Into General BPM Benefits

In general, workflow/BPM should result in significant return on investment (ROI) when applied to "taming" dynamic processes that change frequently (e.g., adapting to regulatory compliance changes, or to a new organizational structure). The good use of these solutions would also be towards business processes that involve human interaction, and typically, cross many business units, divisions, departments, entire enterprises, or other functionally organized groups of people.

The same holds for complex, multistep processes that require the orchestration of a variety of staff members from different functional departments using different software applications or data to accomplish their tasks. The same would hold for processes with exceptions that are currently handled manually but that still require quick turnarounds.

We should not forget here about those processes that are exposed to the trading partners in a value chain, and where delays or mistakes can damage partner relationships. Conversely, high-volume transaction processing, processes with little or no user interaction and that can be simply and cheaply automated with other tools (e.g., task scheduling systems), would not be the best use of workflow and BPM tools.

From a bottom line perspective, adding workflow or BPM to business processes should save money and time, increase customer satisfaction, get results quicker and largely eliminate things getting lost in the shuffle. Thus, success with (or payback from) workflow or BPM deployments should be measured with a clear and simple business metric, such as reduced number of returned shipments, reduced lead time for special orders, increased consistency of task completion, or reduced time required to onboard new employees. Each company should tailor its individual metrics to those of importance to the business.

Some BPM benefits reported by users or market observers (that should also keep the project team focused and the business owners engaged) would be

- Reduced product design time by 50 percent;
- Reduced order time by 80 percent;
- Increased call center efficiency by 60 percent;
- Cut inquiry response time by up to 90 percent;
- Increased inventory turns by 35 percent; and
- Cut manufacturing cycle time by 40 percent.

Conclusions

In addition to the obvious processes for bug resolution, new feature requests, and special service requests, which were mentioned in earlier parts of this blog series, some other potential "low hanging fruit" deployments for ResponsAbility could be a case management for insurance claims and a variety of processes that involve approvals as a step (e.g., processing of sales orders or handling purchase order requisitions).

Prospective users might want to evaluate this solid, and yet inexpensive and rapidly deployable on-demand workflow or BPM functionality that they can set up and configure to implement standardized business processes in an automated fashion. Users can configure and manage workflow in the ResponsAbility's rich and self-explanatory user interface (UI), while both users and administrators can quickly create complex business rules without needing to have any programming knowledge.

Users can create workflow rules for most of the entities in **WebSource CPQ** (or any other system of record for that matter), including custom entities. By using workflow rules, companies can specify criteria and business logic for how the system should execute the rule. In addition to configuring the workflow trigger event, users will soon be able to insert sophisticated conditions and actions in each rule. Workflow rules follow the Webcom's security model, so that users can configure the rules and security roles for their organizations to restrict user access.