

Enterprise Process Automation— Providing the Gift of Time

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PREMISE

I recently embarked on a project to improve Human Resources processes for a client. My methodology was to interview stakeholders from various points of view, from line-level managers through executives, globally. Following the interviews, I presented my observations, findings, and recommended actions. Toward the conclusion of the discovery phase, I was interviewing a senior executive from the London office; one of the highest ranking women in the financial services industry.

My parting question: “What would bring you the most value?”

She replied: “Well, more hours in the day!”

My initial inclination was to put her on a supersonic jet flying westerly, so she could be constantly gaining time each day. But after considering her statement, it occurred to me that if we could eliminate the work that can be effectively automated, it would have the effect of creating more time, and the added benefit of being able to use that time for tasks more enjoyable for the worker, and more of a value-add for the company. I called the resulting action plan: “*Enterprise Process Automation.*”

OBSERVATIONS & CONCLUSIONS

My observations about this client, and many clients that I serve, was that work is disorganized. Too much time is spent doing administrative tasks. There were too many manual touch points of information. The company had many software applications in house, but they weren’t integrated well. Often, Excel spreadsheets are used to bridge the gaps between point solutions. Thus the information was changed outside of controlled processes, and then uploaded into the next point solution. The solutions, therefore, worked in silos rather than as a well-integrated whole. Yet the end-to-end business processes involved touch points in several systems, so they were screaming for better integration. Procedures weren’t well defined. Often managers didn’t know what system to use to get the information they needed, or how to use that system if they did. Each system, in addition to having a URL starting point, required a userid/password to access. These were often forgotten or misplaced. In desperation, managers would ask their HR generalist to access the information they needed, which meant that HR was bogged down with administrative work and couldn’t concentrate on being a partner to the business.

Employees are also experiencing media overload. Emails are used as the primary means of disseminating information or requesting that an action be performed. Most of the point solutions in the enterprise had an automated workflow component, and each of these prompted for an approval by sending an email. As a result, most managers received hundreds of emails a day. Sending an email to a busy manager is akin to casting a twig into a fast-moving stream from a bridge. The twig is swept away before it can be consi-

dered. Thus emails containing important information, or requesting approvals in an automated process, were buried before they could be acted upon.

Compounding this problem is instant messaging, text messages, and constant phone calls which effectively act as an interruption scheme when a prioritization scheme is needed.

The net result is everybody is working longer hours, less work is getting done, the quality of work suffered as deadlines are in danger of missed, and workers are constantly stressed, which leads to mistakes and low morale.

RECOMMENDATIONS

The recommendation was to implement a process portal. The portal focused on the end-to-end business processes, not the systems that are involved with automating parts of those processes. Thus the portal was to contain links such as: “Compensate my team” or “Promote an employee” rather than naming the compensation system or Human Resources Information System (HRIS) that actually processed those transactions. Single sign-on was to be implemented, which was integral in making the process-orientation seamless. The portal was to include personalization, so that when a user logged in the system knew who they were and what functional privileges they were entitled to. Pagelets on the portal were reserved for important announcements, and targeted based on the person, so that those informative emails wouldn’t get lost. Finally, the portal was to contain an integrated worklist, so that all actions and approvals required of the employee would appear in one place and could be prioritized. The portal, implementation methodology, and underlying technologies comprise Enterprise Process Automation.

ENTERPRISE PROCESS AUTOMATION

Enterprise Process Automation (EPA) is a plan of action whereby existing assets in the company are harnessed to make work easier, allow work to be done faster, and with more accuracy, and more accountability. This is accomplished by using these assets in a more logical way, and focusing on the end-to-end business processes rather than the systems required to accomplish each part of a task. The design imperatives inherent in EPA are:

- **Flow-through processing:** Information is only entered once. Reentry of information is not permitted. Once information has been entered and validated, it will flow through to each asset requiring that information automatically.
- **Minimize mouse clicks:** Each task is accomplished using a minimum number of steps. No extraneous mouse clicks are permitted.
- **Information remains in controlled processes:** All steps in each process occur in controlled processes: information does not leave a form where it is part of a centralized system. For instance there are no downloads to Excel spreadsheets for processing; only reporting.
- **Interfaces are automatic:** Intervention by IT is not required to initiate interfaces between systems. Whether an interface is real-time, near real-time, or scheduled is a design decision. However interfaces occur when they need to occur in order to accomplish the end-to-end business process.

- **Complete audit trail:** All transformations of information, including but not limited to transaction initiations and all approvals, are stored in a system which can be reported on when needed.
- **Emails are used only for notifications:** Approvals are not accomplished by emails, but by controlled workflow processes. This provides the persistence necessary to ensure that the approval is acted upon.
- **Existing assets are leveraged to the greatest extent possible:** EPA is a methodology, not a software product. A company should use software assets that currently exist in the enterprise where possible. The objective is to use existing software better, not create extensive new software initiatives. However, there are instances where a necessary software tool is missing and must be obtained.
- **Manage worker relationships:** An organization is like an organism in that it is constantly changing. Workflow recipients and business rules require a comprehensive and up-to-date understanding of all of the worker relationships in an organization. The section on People Relationship Management will discuss this in more detail.

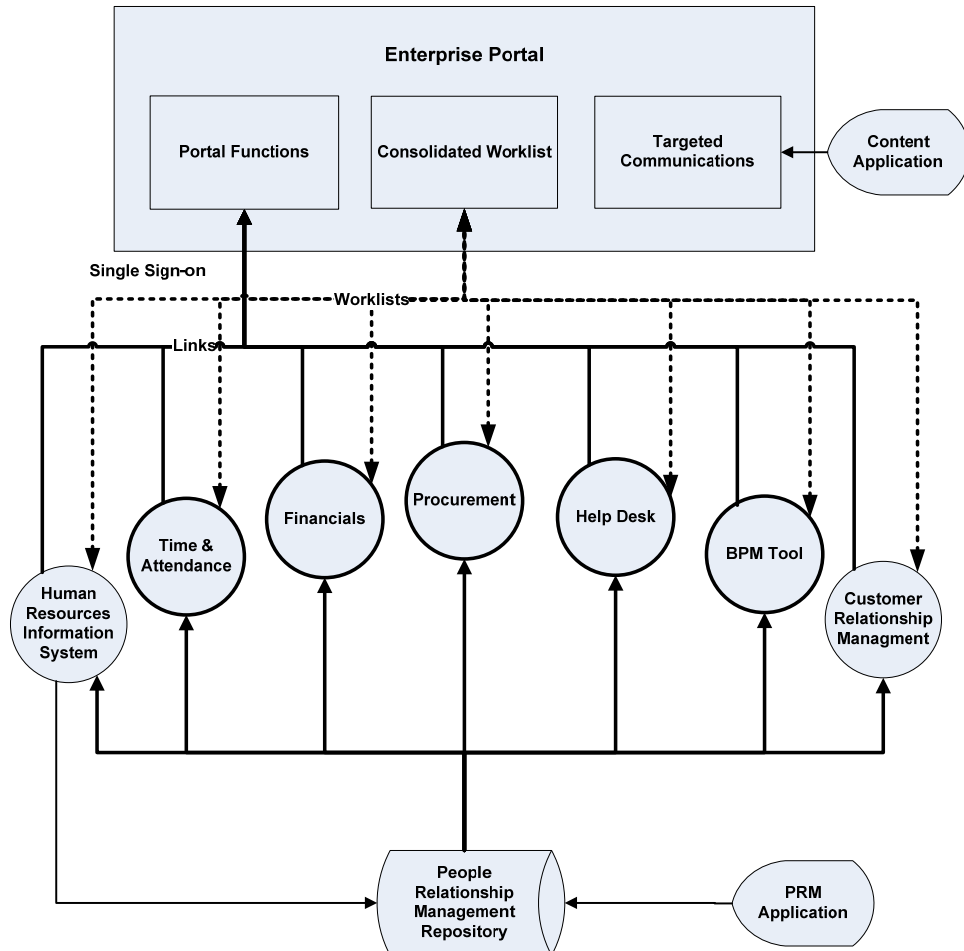


Fig. 1: Enterprise Process Automation architecture

BENEFITS

Since EPA promised the “Gift of Time,” it is appropriate to enumerate the time-saving opportunities and other advantages:

- Tasks using workflow complete faster
- Work is managed better on a consolidated worklist
- Time saved locating the place to get the needed information and hunting for passwords
- Time saved searching for the email that you need to complete a task
- Consolidated and complete audit trail of all decisions
- Enhanced data quality due to flow-through processing

COMPONENTS OF ENTERPRISE PROCESS AUTOMATION

The necessary components of Enterprise Process Automation are as follows:

The Portal

A portal is a Web page that contains a link to each “business process” that a user performs. The portal should be “process-oriented” so that the user needn’t be aware of the software behind the link that’s processing the request.

Single Sign-On

Single sign-on is technology whereby the login credentials are passed to each software application, so that the user needn’t remember the logon id and password of each software product. Not only does this allow seamless access to system functions, but it actually *enhances* security because the passwords for multiple systems are not scrawled on scraps of paper and left around the office.

Point solution application software

This is all of the application software used in the enterprise. This includes, but is not limited to: Enterprise Resource Planning, Human Capital, Payroll, Financials, Workforce Management, Talent Management, Help Desk, Customer Relationship Management, etc. There are many best-of-breed solutions on the market for any conceivable application, and each usually contains its own workflow engine, whereby transactions are routed to appropriate parties throughout the organization. Many have their own portals. Thus, each point solution views itself as the “Center of the Universe” in that it should be the controlling point for all activities in the organization. This ethnocentric approach rarely serves the best interests of the corporation. The problem is that business processes span across the “gaps” between what the point solutions provide. The gaps are bridged by knitting together the services involved in a process with workflow.

It is clear, therefore, that the “universe” has no center (just like the time-space universe). Enterprise Process Integration can be viewed as the unifying element in the corporate “universe.”

Automated workflow

As stated earlier, each application point solution has its own workflow engine. Some are more robust than others, but each serves the needs of its own business problem. Typically, workflow is used for approvals of a transaction, although it can be used for collaboration on a process. Workflow is often initiated by an email. The problem with emails is that we receive too many of them to be effective. Emails are not prioritized, so we don’t know

which are important and which are part of the “noise” that engulfs us during the work day. Therefore, there is no way to control a process initiated by an email. The other way workflow items are organized is on a worklist. In a worklist, items can be prioritized based on due dates. Aging algorithms can ensure that the workflow item is acted on in a timely manner. Thus the process can be controlled in ways that it couldn’t when initiated by emails alone. The problem with the worklist is that it exists in each point solution, so the user needs to know to access that application to check his worklist. When a user accesses several systems each day, this adds to the burden incumbent on the user to get their work done. Often, emails are used in conjunction with worklists to cover both bases. Emails are useful, however, as notifications, but not to be relied upon to control events.

“Umbrella” workflow

Although each silo has its own workflow engine, sometimes it’s important to have an “umbrella workflow” engine – so that the touch points that fall in the gaps between the silos are covered. In order to do this, one must choose the most robust workflow engine available. Most point solutions have workflow engines that are specifically geared toward the process served by the application. ERP software tends to have fairly robust workflow engines. BPM tools generally have the most flexibility.

Consolidated worklist

A portal presents the user with a process-oriented view of his work. In this view, the user needn’t be concerned with the system behind the link servicing parts of the business process. In like fashion, the portal should have a consolidated worklist, which contains items from all of the applications that have a workflow component. Thus the consolidated worklist acts as an electronic “to do” list, containing all items requiring the user’s attention. This can then be prioritized to maximize use of a busy executive’s time.

Service Oriented Architecture interfaces

A service-oriented architecture is a general term for the use of integration technologies based on widely-accepted standards. Thus, architectures can be designed so that functions within system are accessed as “services” rather than as an entire system. This very much lends itself to the portal approach espoused in this paper. Each business process presented on the portal can access services from within the point solutions that provide a set of functions involved in the business process.

People Relationship Management

People Relationship Management (PRM) is a class of software that maintains the relationships between assets in an organization (I say “assets” rather than “people” because they don’t have to be human assets), and stores them in a central repository. Think of it as “Swiss Army Knife” software, a tool that can be applied to a myriad of problems. Since workflow connects people in automated processes, it’s critical to identify the right people. Enterprise software (EPR, HR, etc.) only stores one company hierarchy which must be used in all business contexts. This is clearly not aligned with the business processes. For instance, the person who would approve a promotion may not be the same person who would approve a purchase or sign off on an audit. Thus, when automating these diverse applications, implementers often modify the corporate structure to fit their application. So the “master” copy is stored within the point solution, and not in a system-of-record repository,

which is sensitive to changes in the workforce. Even if the workforce changes are manageable, the solution wouldn't scale to the enterprise level. Processes that are automated on a limited scale often identify the individual actors in a process, rather than abstract out to their role. For instance, new hires are routed to Cheryl, the recruitment manager, for final approval. If the company subsequently acquires a company overseas, who has a recruitment office in each country, the system needs to know who the recruitment manager is in each country. Using PRM, the automated solution could be applied to all offices immediately, thereby assisting in streamlining the merger process.

Without PRM, the possibility of broken business processes exists, if the correct recipient of a workflow item cannot be identified due to movement within the organization. Without the ability to assign business rules to groups of employees, an application needs to be implemented to handle each individual case. For example, a company can have different sales commission plans based on location, and different equity grants based on salary grade. In order to automate this, one would need to segregate groups of employees based on salary grade for the equity grants, and location for the salespeople. PRM would handle both situations without any custom code.

THE PORTAL

Evolution of portals

In the early days of the Web, portals were merely a collection of disassociated websites. As portals evolved, they took on a consistent look and feel, added personalization and search capability, and implemented single sign-on to many of the applications behind them. Thus, the portal knew the user logged in, their access rights, and their preferences. For instance, if a user signed on to the portal, it may display the Employee Self-Service transactions available to her, relevant stock quotes, and the weather in her home town. Still, the portal remained folder-dominated, meaning that she needs to know what she wants to work on, and how to navigate to the appropriate link. Current portals are more process-oriented, in that they are able to integrate the back-end applications to automate the end-to-end processes.

As they continue to evolve into more intelligent assistants, future portals will have the ability to anticipate the actions of the user by learning her work habits.

Personalization

A portal should have a degree of personalization. This means that when a user logs into the portal, the portal knows who she is, what her interests are, and what she's authorized to do. The portal should display links to all functions authorized. It may contain a prioritization scheme, whereby more commonly used functions float to the top of the list. Regardless, the links should have a *process* orientation rather than a *function* orientation, which means that the user shouldn't have to search among layers of menus to find the next function in the process. For example, a process can be: "I'm having a baby," which may comprise the following functions:

- Apply for FMLA
- Apply for State Disability
- Check company maternity and baby bonding leave policy
- Update my employment status
- Change my medical insurance coverage

- Change my dependents and beneficiaries
- Reassign my tasks to others
- Have my correspondence forwarded

A person who is in the late stages of pregnancy cannot be expected to know all of the options and steps involved in the process. The portal should guide them through all of the steps, posting worklist items for the steps that can't be concluded in the initial transaction.

Many portal products separate personalization from security, which means that the portal can display a link, but when the user takes that link he is informed that he doesn't have the proper authorization to perform the function. This is a suboptimal practice, which can be mitigated by using People Relationship Management to synchronize security with personalization.

Using single sign-on and deep links, the user is secluded from the system fulfilling the step in the business process. This can be useful as the company migrates from legacy systems, in that the link to the user remains the same even though the underlying system is changing as needed.

One of the challenges is that point solution software sometimes does not provide the deep links into the target sub-process, just a link to the solution's home page. Vendors should be apprised of the EPA strategy and encouraged to provide deep links, or ways to expose services through SOA-based methods. If not available, organizations should provide a link to the home page of the application.

Targeted communication

In today's global companies, enhancing communication is one of the greatest challenges and opportunities to convey a sense of common purpose to associates separated by great distances.

Remember how emails are swept away like a twig in a fast moving stream? Well, many of those emails contain important announcements that should not be ignored. A portal should have the ability to display targeted information to the user. Think of it as "emails with stickiness." For instance, if an employee is in the United States and benefits open enrollment is from November 1–15, there can be an announcement to that effect on the portal. However, a UK employee needn't see that announcement because it doesn't apply to him. Similarly, information pertinent to a specific business unit, job function, or even project team can be displayed as appropriate. This requires that a person administer the content for each interest area. It is important to identify the person with ownership of the portal content for the interest area, and secure his cooperation.

Consolidated worklist

The ideal state is to have a consolidated worklist because it becomes an electronic to-do list for all tasks required of a worker. This eliminates the interruption factor: when you are working on one thing and are interrupted in order to address a higher-priority item. This renders for naught any attempt at organizing the work efficiently. In the perfect world, all business process would be automated through workflow, and all workflow items would be able to be integrated so that they can be controlled on a consolidated worklist. Then, business rules can be applied to the worklist so it can be prioritized to maximize the worker's attention.

However, we know that the world is not perfect. Vendors are less likely to expose workflow items as Web services as they are more common interface items. Therefore integration of workflow items into a consolidated worklist may be difficult. Integration can occur at the data level, rather than the process-level, but that requires an intimate knowledge of the data model. In the worst-case scenario, a process can monitor the company's email server, and compare "from" address to a table that can identify the item as one that should appear on the worker's consolidated worklist.

Integration with the consolidated worklist is even more complicated than that. The first problem is inclusion of all of the necessary items. The second problem is their removal. There are basically three options as far as this is concerned:

- **Remove the worklist item as soon as the link is taken.** This ensures that the item is removed, but does not ensure that the item is "worked." You can include a link on the approval function to re-add the item to the worklist if the work on it isn't concluded.
- **Deep integration with the point solution.** This would involve a two-way Web services integration with the point solution, whereby the software would send a message to the portal to remove a worklist item once it is worked.
- **Allow the user to remove items when "worked."** This involves providing a way for the user to explicitly indicate when an item is worked.

Portal Architecture

There are many options for a portal. The major ERP software suites include a portal product. Middleware vendors provide portal products which are usually based on the emerging BPML standard. If you were to opt for this platform, BPML might be a choice for the "umbrella-workflow."

However, something as simple as a Web page with some code behind it can serve the purpose quickly and easily. An important consideration, however, is that regardless of the approach, the PRM is essential to categorize workers and to provide dynamic personalization and security.

CULTURAL CONSIDERATIONS

As with any change, the cultural challenges are often greater than the technical ones. Moving toward an automated enterprise means embracing the self-service methodology, where managers are empowered with ownership of their information. However, not all managers see it that way. Sometimes, managers are used to having administrators or their HR reps process transactions for them. They don't necessarily see automation as helpful to them, because it requires more action than was previously required. It is necessary to get buy-in from all stakeholders if the new methods are to be adopted. This is best accomplished by inclusion of the stakeholders at all stages of the discovery and implementation process.

EXECUTIVE SPONSORSHIP

The most important aspect in easing the cultural adoption curve is to obtain executive sponsorship up front. Enterprise Process Automation is the realization of a strategy through the tactics espoused in this paper. It should be a C-level executive who decides to enact such a strategy. Having a clear

mandate from the CEO's office will do wonders to mitigate resistance to adoption.

MEASURING SUCCESS

It is important to measure and document the results of the project, in order to validate, make adjustments, and create a business case for progressing further down the road. Collect and publish the metrics identified in earlier phases. For those benefits that are not quantifiable, distribute post-implementation surveys to the stakeholders. This will serve to reinforce buy-in and gain important insights as to how to serve the business even better in subsequent phases.

MATURING WITH THE PROCESS

As more business processes are added to the portal, and workflow items added to the consolidated worklist, the convergence of work processes and information will reach a tipping point, and the portal will rapidly gain in importance and evolve into a hub of information and activity. The result will be an ecosystem of services available through integration technologies, and linked by workflow to humans, who make the nuanced judgments. Lifting the administrative burdens from the process will enable workers to focus on optimizing their decision-making. Thus, workers become more “human” because there is an increasing focus on the tasks for which humans are required. This will result in maximal use of resources for the company and maximal job satisfaction because the barriers to productivity are removed.

Once the pain points are mitigated, we can concentrate on ways to optimize talent by applying advanced analysis. An example is organizing tasks to maximize attention levels.

Companies typically evaluate software products based on the cost savings and risk mitigation that can result from them. However, the use of EPA with PRM offers an opportunity to change the way we manage. *An organization is a group of people who work together to produce value.* Business Process Management software has focused on the processes, but the process cannot be separated from the participants. Better understanding of the way people interrelate in an organization can drive a radical shift in the way relationship-based assets are managed; and provide illumination into the way humans interact.

CONCLUSION

The techniques espoused here are by no means a “magic wand” which will cause all problems in the enterprise to disappear. Try as you might, magic just won't work. Despite notable controversy, reengineering business processes is still more art than science. And like an artist, one should try to perceive the negative space in a business process—the aspects that should be there but aren't, and the aspects that are there but shouldn't be; and seek to make that perception a reality.

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