

## PSC White Paper:

# Workflow -- The Next Frontier in Automation

Imagine sitting in a history class in the year 2075. The professor hands out a syllabus that covers the Ancient times, the Medieval times, the Renaissance, the Industrial Revolution, and the times we now live in -- The Information Age. However historians label the half-century that began about 25 years ago and that will extend for 25 years in the future, it is, nevertheless, a time of great technological change, a time that is having an even greater effect on the way we think about business, a time of moving from function to process, a time for rethinking how we will execute our workflow.

Because of the key technology advances in the early part of the 20<sup>th</sup> century, the Information Age could also be called the Silicon Times. It started with our ability to harness electricity and transform materials into the building blocks that ultimately produced the silicon wafer. That powerful little silicon chip, which led to the creation of the likes of INTEL, NEC and ADM, has truly revolutionized our world. Semiconductors have become pervasive in our society, bringing intelligence to every day items -- the necessities to the modern society of the 20<sup>th</sup> and 21<sup>st</sup> centuries. Semiconductor chips have found their way into commonly used items from phones and cars and toys, to audio video equipment and household appliances, to the sophisticated equipment that controls production, to measurement devices and global navigation.

It is not news today to say that the silicon chip has turned industry and business upside down. The significant transformation the economy has faced in the last two decades has been largely driven by the advent of the silicon chip. Giants of the industrial revolution have come and gone as new business models leveraging computing and information technology have surfaced. Apple, Microsoft, Motorola have become household names. Advances in software and hardware development have brought a new level of personal productivity to individual workers as computers and software have become readily available to the masses. Significant change has occurred in the office workplace. Personal productivity improvements show a swing in activity from clerical staff to technology staff, from support staff to self-serve administrative tools, from stacks of paper to stacks of electronic documents (e-mails, word documents, electronic spreadsheets, and electronic presentations.) The computing trend has promised and continues to deliver increases in productivity and reduction in time. People are doing things quicker, better, and working smarter... or are they?

### But is it Smarter?

Late 20<sup>th</sup> century technology investments focused on enterprise business process improvements and delivery systems that dealt with common industry transactions such as Order Processing, Inventory Management, Receiving, Purchasing, Shipping, Billing, and Financials Management. Although these initiatives resulted in

formulation of a new class of best practices among industry groups, they did not cover all the processes in an organization. Those that were left out, the *residual* functions and processes, soon become the claim of personal computing. We replaced mundane tasks with the PC. Today we use word processing, spreadsheets, personal databases, etc. In an effort to work together, we send e-mail everywhere, share information electronically, and collaborate through instant messaging. Our Internet and Web-based applications allow us to cross business and organizational boundaries, to share and exchange information as we have never done before.

Technology in this realm has accelerated our manual processes to light speed. People are working quicker, if not at a more frantic pace. Faster, however is not necessarily smarter, and this is the problem. We have engaged technology, but we have also created chaos. We now have access to all the information we need, but we don't know how to manage it.

While enterprise systems have improved core processes, the personal productivity tools may have taken us in a different direction. Instead of making us more productive, we may have widened the gap between core processes and their day-to-day business execution. Although no great revelation, we know individual workers and organizations already share both structured and unstructured information at a brisker pace. However, this emerging trend has yet to take advantage of the structured business process and creative technology solutions that are now available. If we are to successfully automate the missing 20% (or the residual processes) that enterprise software is not able to tackle, we need to move more systematically into an area of workflow and sophisticated business collaboration.

As we sit at the start of the 2<sup>nd</sup> millennium, we see business workflow as the next frontier of information technology improvement. Certainly, collaboration will embrace web technologies that bridge across organizations and business silos, but it is workflow that enables people to share information in methodical and organized fashion that approximates the way they work. The technology will bring together a broad array of solutions from teaming environments to instant messaging to point solutions built around existing systems, but it is the body of thought and integration with the way the business should really work that gives workflow its name.

### What is Workflow?

Workflow is a term loosely used to cover a variety of activities from integration tools and techniques across systems, to point solutions that provide stepwise and serial approval of work. The most compelling and attractive example of workflow is in the automation of repetitive tasks that require more than one person or groups to complete a transaction, execute business processes that cut across

organizational units, or do work that is transparent to the systems, data, or entities affected by that process or transaction.

The workflow challenge is to tackle manual (including semi-automated; e.g. spreadsheets) business and organizational activities that are repetitive and are touched by several organizational layers. Such activities are ripe for process improvement. Activities that, in the past, were too costly or complex to automate, now can be tackled with current technologies that allow rapid development of workflow solutions and integration of those activities with existing systems. This will result in removing paper from business processes, streamlining and standardizing activities, speeding up reaction time and reducing elapsed time, creating accessible repositories of information, and reducing the cost structure to manage transactions that operate across multiple business systems and organizations.

Examples of areas ripe for workflow:

- Employee first day and last day processing,
- Employee vacation requests, time sheet submission, expense report submission and payment
- Marketing programs and campaign management, promotion launches, Web content management, product catalogue and campaign management
- Product live-cycle management from development and product launch, engineering change notices, bills of material, and item master management
- Purchasing requisitioning, quoting, bidding and procurement management
- Call center ticket management, issue tracking and request management
- Business Relationship management for all trading partners; customers, vendors, distributors and suppliers
- Asset movement and tracking, project tracking, personnel assignment, movement and tracking
- Training recording and tracking, accident & safety recording and tracking

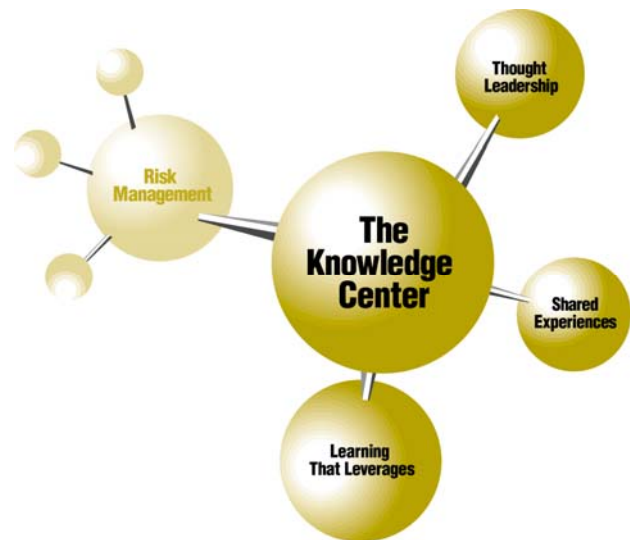
The list goes on, a multitude of manual processes remain to be automated quickly and cost effectively. Wherever a stack of paper exists and two or more people are involved, you have a workflow business process improvement opportunity. Of course, "the proof is in the pudding." As workflow applications mushroom, will we create other problems? If workflow is not thought out as part of a corporate-wide architecture, the answer will have to be yes. In the same way that e-mail, voice mail, palm pilots overwhelm us as quiet but demanding task masters, a plethora of workflow solutions that are constructed as singular entities can add more chaos and further bog down productivity. We are already starting to see this emerging chaos with the increase in point solutions that require individuals to go to multiple screens or multiple systems to get their work done.

The trick is to look closely at how the overall organization is structured, build work environments for common work flow tasks, provide event notification, and build solutions that are ergonomically supportive of the way personnel, administrators, supervisors and managers work on a daily basis. This can be easily done by combining common processes across different activities in common environments. While users can help with creating the design, turning that design into reality must be left to the experts. This is the realm of the software and business process architects.

So there you have it. Work Flow is the next provocative trend in information technology development. It is upon us. The tools and expertise to deliver solutions that automate and streamline those residual manual and repetitive tasks are readily available. Organizations in the mid-market that embrace this trend in business process improvement will quickly see cost benefits, and improvements in business productivity. As much as computerization, enterprise transaction & resource planning systems, and recent personal computing trends have provided step changes in productivity, workflow has yet to make its mark. It is workflow's turn. Hopefully, if all goes well, historians will likely look back at workflow as a significant element of the Silicon Times.

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**It's all in the way we listen!**