The Process of Working with People:
Person-to-Person Business Process Management

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Christel Devlin of Action Technologies summarizes the state of person-to-person process management with this analogy, "Imagine you go to the airport to catch a flight. As you check baggage a tag is printed that will automatically route your bag to the right terminal, the right plane, and the right baggage carousel, without your ever having to say a word. That's the level of automation we've achieved for system-to-system processes—it's all pretty fast, matching is done nicely, and human intervention is rarely needed. Now imagine you proceed on to the next step, which is to check in, collect your boarding pass, and get on the plane. What if there were no arrival and departure boards? What if there was no central location for information on delayed flights? What if each and every person had to go to a different location to get his or her unique departure details? If a flight were cancelled, how would you find out about it before you get to the gate? What if you had to go back again to the check in to find out the new departure time and gate number? What if the line was huge? It would be a nightmare. Meanwhile, your bag is already on a flight. That's the level of automation the IT industry has achieved so far for person-to-person processes in the majority of firms today."

Why are person-to-person processes so dismal given the free availability of workflow technology? Are the existing methods for including people in computer-based processes insufficient? While it is easy for computers to track messages between systems, it is far less easy for them to track how people think and act. If we want tools to provide executive dashboards for person-to-person processes that mirror an airport's central arrivals and departures board, we will need to capture the subtlety of human interactions, motivations and intentions in our computer systems.

In the Gartner Magic Quadrant for Pure-Play BPM Q204, Jim Sinur states that, "The system-to-system (S2S) business process management (BPM) market has seen a great deal of successful activity in the past year, especially among the integration-centric BPM vendors. These providers are strong at managing the technology-platform centric portion of the business process and have pushed the market forward." Recognizing the key role people play in business, he adds that, "All of the indicators point to 'hot' growth in the human-to-human (H2H) sector of BPM for the near future."

For too long, the computer industry has ignored how computer systems fit into the wider business process context. All too often business people have been reduced to robotic data entry clerks. Take the example of a sales and marketing manager recently exposed to an ERP application. His corporation insisted he use it to report and track sales figures. This is what he said about the new system he now had to use: "It sucks. It's a bunch of screens. I'm being asked to do dumb typing into a computerized filing cabinet. It's worse than the email processes, spreadsheets and databases my global team developed ourselves and have used successfully for the last five years. We cannot work with this ERP stuff. It does not help me to work with others. I get no sense of the process of which I'm now expected to be a part. I cannot mould the system to the way we work here and it certainly won't help my team understand the needs of our customers or our ability to include them in the sales

process. What we've been given is basically a back office system of records, but I'm not a back-office clerk. In using it I'm helping the company report figures consistently. That's about all there is to it. I hate it. I can barely stand to use it. How our IT folks think this is a step forward beats me. It's a distraction. There must be a better way to link the tools and databases I'm already using." Instinctively, this colleague, who had never seen a process-based system, identified the need for process technologies.

ERP developers and other IT technicians have been far more comfortable designing system-oriented processes, rather than designing processes for people and the work they actually carry out, that is, work in processes and work with processes. What many mainstream IT vendors have missed is the opportunity to apply technology to the person-to-person process itself. But what about workflow, doesn't it assist people in getting their work done? While workflow is the most common solution for person-to-person processes, it is more oriented toward including people in system-to-system processes than it is at mediating interactions between people. Workflow is decades old. While workflow has proved useful in call centers and other environments where repetitive work must be automated to drive consistency and efficiency, such as insurance claims processing, it hardly seems sufficient to capture the dynamic human interactions in everyday business. A new solution is long overdue.

Inherent in workflow technology is the concept of a "task list." This idea for how people should interact with computer systems is, at best, a poor proxy for how people interact in practice. If technology is to be used to gain visibility into the real work of corporations to achieve process innovation and improvements, we are going to need more than statistics that rate employees' completion of items in a work stack.

How many times have companies received requests via email from their customers where it's obvious the senders have assumed the companies will do what they ask without regard to the implications? Too often, the sender assumes the recipient has the capabilities or resources to perform the requested task. Too often, the sender assumes the recipient can achieve the task within a set time. Too often, the sender assumes the recipient is in complete control of all the resources upon which they would be dependent while performing the task. While an email message may contain English language statements such as "can you," "will you," and "please," the computer systems that transport the email messages know nothing about the content and intentions behind the messages. What this means is that the senders can only assume the work will be done. Without person to person process management, companies are not able to provide their customers with information to monitor and follow up on unanswered emails, nor to deal with the flows of endless response emails that may need to be sent until the work required has been unambiguously defined and agreed, prior to it being performed. As we all know, the ad-hoc processes of electronic mail are not managed and can be abused, leading to email overload for all parties involved in resolving even the most straightforward issues. And all this is before any work gets done and people start asking, via email, about the status.

Reasonable requests for work to be done are subject to negotiations. There is a to and fro passing of messages that, eventually, results in an outcome. The human negotiation processes are needed to garner the appropriate time and resources as well as resolve constraints and other factors. All of these activities are necessary parts of human work. Sometimes, in the course of these interactions, the parties concerned will decide the work cannot be achieved or needs to be achieved by non-standard means. Compare this rich interaction to what happens in a typical workflow environment. Like an unexpected email, work is pushed onto a work stack with the

expectation it will be done. While this may be fine for repetitive tasks distributed to caseworkers with well-defined roles, the unconstrained use of email is testament that this method of tracking is inappropriate for much of what happens in a modern organization.

The need for something more structured than email and less prescriptive than workflow can be understood by considering that the resource negotiation phase of work is only the start of the person-to-person process. After work is agreed, it has to be performed. This is not as simple as checking off tasks on a list. Numerous other people are likely to be involved, and each is potentially able to disrupt the process by failing to meet timescales, or the process may be delayed by factors outside of their own control. The performance of agreed work could easily require the creation and execution of new processes among team members, each of which represent additional loops in the end-to-end process. At each stage, those requesting work and those performing work need to agree that work items have been satisfactorily completed. This sign off may also be subject to further interactions and negotiations since the work results may involve compromises.

Over the years, workflow engines have been extended to bypass the complexity inherent in human interaction. For example, a workflow management interface will often provide the means for a work item, stuck somewhere in a complex workflow, to be re-allocated and subsequently tracked. It is also common to see features for the escalation of work that has not been completed within time limits. Work managers use this workflow feature to intervene or re-allocate tasks. While these facilities have become an accepted part of what a businessperson should expect from a workflow platform, different vendors have incorporated these exception-handling features in different ways. The features are not part of the logic of how workflow works, but rather, add-ons to the workflow model. This has led to considerable differences between workflow products with no clear definition of what constitutes the very definition of workflow technology. Hence, businesses find choosing a workflow product very difficult. The decision is nearly always a compromise. Rather like selecting among packaged business applications, the IT procurement organization has the unenviable task of finding a "best fit." But a single best fit is not always possible, and it's common for companies to end up with multiple workflow engines. One department finds a workflow solution that meets its needs, but another department will swear that they cannot possibly use the same solution, and often for good reasons. To make matters worse, nearly every modern, pre-packaged, off-the-shelf, enterprise software application today comes bundled with its own, usually primitive, workflow engine. Trying to create a managed end-to-end process out of this patchwork quilt of workflow solutions and packaged applications is nigh on impossible. Rarely, if ever, do workflow vendors implement standard interfaces between their products, and even where they do the scope of the interface usually does not extend to the special features the vendors have added over the years to cope with the dynamic aspect of person-to-person processes. Indeed, workflow vendors compete on the features they add to cope with exceptions and special cases.

Exceptions are the norm. They are nothing more than patterns of human behavior that fall outside of what the workflow technologists imagined when they created their workflow engines. As a result, business users don't get an end-to-end view of any one business process, or a single point of access for managing related sets of processes. Recognizing the limitations of the uncontrolled use of multiple workflow solutions, it's not uncommon for the CIO office to mandate a single "corporate standard" workflow solution. Yet this inevitably limits the use of workflow in the

enterprise. It seems that, with workflow, business users *cannot* have their cake and eat it, too.

The acknowledgement of exceptions within workflow solutions is revealing. Perhaps the way people work should not be considered an exception that falls outside of the normal processing of workflow engines? Perhaps negotiations and commitments are the normal way people work together? Perhaps real work does not fit the workflow task-list mentality?

Toward a better person-to-person solution

Other limitations in workflow engines have led to a wide array of extensions to workflow products. Recognizing that people do indeed need to collaborate during work, workflow vendors have, over the years, added collaboration facilities. Yet while workflow solutions continue to evolve, these tacked-on capabilities hardly allow the real work processes to be managed any better than uncontrolled use of electronic mail. Collaboration features that are not part of the core engine logic fall outside of any formal ability to improve process. The fact is, no matter how many collaboration tools are added, typical workflow solutions remain mechanistic in nature. While they can effectively automate prescriptive person-to-person task flows, individuals in those processes often feel like cogs in a wheel managing a list of tasks. Rarely if ever do they report being in charge of the process and its improvement.

Not knowing that better solutions exist, it is not uncommon for IT departments to apply workflow solutions to processes for which they were not designed. And it is easy to imagine situations where, had workflow been applied, the ability of people to work together could have been degraded rather than enhanced. Indeed, there is a market for workflow consultants who help users select technologies that won't jar with the process to be automated.

For these and other reasons it's now time to re-examine other forms of computer science that can help businesses build effective person-to-person process management. Such a re-examination will no doubt lead directly to the landmark work of computer scientists Terry Winograd at Stanford and Fernando Flores at Berkeley.

Beyond case flow, towards intention flow

Winograd and Flores studied how computers fit into human society. In their 1986 book, *Understanding Computers and Cognition: A New Foundation for Design,* they observed that a person who sits down at a word processor is not just creating a document, but is writing a letter or a memo or a book. There is a complex social network in which these activities make sense. Electronic text entry, they observed, "includes institutions (such as post of offices and publishing companies), equipment (including word processors and computer networks, but also all of the older technologies with which they coexist), practices (such as buying books and reading the daily mail), and conventions (such as the legal status of written documents)." IN this groundbreaking work, Winograd and Flores had correctly observed that the usefulness of a computer system lies in how it fits into and changes the social networks upon which it depends. This insight enabled them to develop a conceptual design model for computer systems that took into account how human users could be expected to interact with them. They pointed out that, "Many systems designed by computer professionals are intended to facilitate the activity of an individual working alone. Although such tools (including word processors, filing systems, program

creation aids, etc.) are useful, they leave out the essential dimension of collective work."

Wishing to balance theory with practice, Winograd and Flores implemented and experimented with a computer program based on these ideas. Dubbed "The Coordinator," it was one of the first examples of what latter became known as a workgroup computer system. Their objective was to make the human interactions in computer processes transparent—to provide what they called "a ready-to-hand tool that operates in the domain of *conversations for action*." This early groupware productivity tool could capture human intent in processes using just a few basic conversational building blocks such as request/promise, offer/acceptance and report/acknowledgement. These types of statements frequently occur in human conversations that are aimed at reaching goals or delivering results. The ideas drew on theories originally set out by the philosopher J. L. Austin (*How to Do Things with Words,* 1962) and subsequently formalised by his student John R. Searle (*Speech Acts,* 1969).

The first version of Coordinator was a laboratory test bed. When it came out of academia and into the commercial world, companies like Lotus were already creating groupware tools, such as Notes. The company that grew out of Flores and Winograd's work, Action Technologies (www.actiontech.com), did not have the resources to compete with Lotus, and so it took advantage of that ecosystem to develop and sell templates that could improve on Notes applications. Over time, a standalone product emerged which was re-implemented using modern technology. Today, The Coordinator® is a registered trademark of Action Technologies, and the company provides a process execution engine, process design tool and process interaction portal built on these foundations. The product suite is now called ActionWorks® but the name Coordinator remains to this day. It refers to the dashboards that business people use to monitor processes and identify improvement opportunities.

The Business Process Interaction System

Action Technologies Inc. has been part of the "workflow scene" for over twenty years, yet the term "workflow" hardly does justice to the capabilities of their solution.   While Action is able to provide traditional workflows, it is far richer. Sometimes referred to as "one of the best kept secrets in the industry," few understand the fundamental difference between it and other workflow solutions. What resonates with those who examine the solution is that Action has embodied a sound model of how people work together in the logic of its process engine, not as an add-on. By customizing these person-to-person protocol descriptions, the solution can easily be adapted to different work styles and patterns. Rather than overloading traditional workflow with added features, Action's distinct model of person-to-person process management scales smoothly and is applicable to a wide range of problems.

The viability of Action's approach has been validated through successful case studies over the years. Yet industry analysts have found it hard to classify the technology. At various points in their history, Action has been variously called *groupware*, *workflow, collaboration* and today, *business process management.* Yet none of these analyst-dubbed or marketing-led labels capture what the technology actually does. Broad classifications and feature-function comparisons against other products rarely help. Only a look under the hood at the core engine semantics reveals the potential.

BPMI.org has defined the term Business Process Management System (BPMS) to refer to technologies able to execute persistent, transactional, processes expressed in general purpose concurrent process description languages such as Business Process Modeling Language (BPML). The popularity of this idea has led many vendors to align behind the term even if they don't have the prerequisite capabilities. Action Technologies have avoided this simplistic response. Indeed, Action is entirely *complementary* to BPMS products. Action is certainly business management software, but it is not a BPMS as defined by BPMI.org. And within analyst's "pure play" magic quadrants there is such a diversity of technology that they are hardly a starting point for customers seeking a solution. The blobs on the quadrants defined by analysts consisting of challengers, leaders, niche players and visionaries are not equivalents that can be compared against each other as part of a procurement exercise. Rather, in its ability to give access to, control over and insight into the human interactions within end-to-end business processes, a more meaningful classification for Action is that of a Business Process Interaction System (BPIS).

Although Action is entirely viable as a standalone solution it can also be used in conjunction with a BPMS. Computer Sciences Corporation has shown how to use Web Services to integrate the logic of Action's engine with end-to-end processes implemented in languages such as Business Process Modeling Language (BPML) and Business Process Execution Language (BPEL). This opens fascinating possibilities for the embedding of end-to-end person-to-person processes within end-to-end system-to-system processes, and visa versa, to any required depth of embedding and recursion. The ActionWorks process portal can be used as the front end to such integrated processes.

The implementation of an Action application is performed using a single desktop tool, the "Process Builder." The builder provides a complete process and forms design environment. Depending on the complexity of the process to be developed, work with this tool could take as little as a few days or may extend to weeks, even months. Irrespective of the scope of work, at any point during development an executable application can be generated and deployed on the Action server. Thus, it is possible to adopt a design approach that allows business process owners and the IT staff that support them to focus on the business problem to be solved. The process builder is oriented towards end-to-end process thinking, as opposed to IT software development.

The richness of the IT applications generated by this approach is surprising. Even the simplest process model (see Figure 1) generates a useful application that business users can use to prepare, negotiate, perform and review work. They quickly get a sense of how best to organize their interactions so as to work smarter. Based on metrics collected during execution, they gain insights into desirable process improvement. The process interaction portal is automatically structured around roles and fulfils the needs of those working *in* processes and those working *with* processes. Process owners are given oversight rights. They are able to intervene in active processes, create one-off, ad-hoc, processes and perform related project management activities.

For those familiar with workflow design, some aspects of Action's process design approach will be familiar. For example, work is structured around forms and documents. But that's where the similarity ends. The power of the technology lies in its ability to capture and manage person-to-person interactions—not just the documents passed between individuals, but also the *intent* behind the communication.

In system-to-system process management, it is relatively easy to meter processes by observing the exchange of messages between systems. The same technique can be used in workflow systems if documents are treated as messages and people as nodes in the network. Yet there is little point in measuring the point at which a task is put on a task list if the recipient has no intention of performing the task or is unable to do so. Instead, the flow of negotiations and commitments across the process needs to be metered if we are to understand the performance of the process from a human perspective. The explicit or implied speech acts among workers are critical to understanding the processes they are performing.

As previously mentioned, speech act theory has a rich pedigree, both in computer science and linguistics theory. Over 20 years, Action has honed their model of person-to-person communication. In effect, the company has cracked the code of how to model and execute business processes where the emphasis for improvement lies in how people work together, irrespective of what they are working on.

Managing work through understanding human interaction

While it is dangerous to make generalizations, in a traditional workflow management system it is the document, form or case, routed between systems and people, that is the focus of attention. In Action it is the interaction among workers as they process diverse work items, cases and documents that is the focus of attention. Working in the Action portal (or through email or other end-user devices) users prepare work, request things of others, make offers, negotiate, reach agreements, perform follow on activities, declare satisfaction, completion and formally accept results. They are executing processes set out in terms of primitive actions: speech acts such as *declare*, *offer*, *assess*, *assert*, *agree*, *satisfied*, *cancel* and *counter offer*. The Action Process Builder provides an extensive palette of such speech acts. The semantics of each are governed in a structured way by the engine. Processes are constructed by drawing phased loops of interactions between roles and associating with them the subset of speech acts permitted. These loops are then linked via state transitions to form complete processes. During execution, Action's Process Engine governs these nested loops of interaction to ensure that work is structured to meet the needs of its management. The solution encourages the efficient progression of work while at the same time avoids the task-driven prescriptive nature of typical workflow implementations.

Recognizing the need for person-to-person process management

Although Action Technologies has remained in a "niche" category as far as the broader IT industry is concerned, this could be set to change, as Jim Sinur of Gartner has predicted. Unfettered email communication is over-whelming for individuals and impossible to manage. Back office applications provide reliable transactions, yet they do not provide any sense of the processes that drive their use. Workflow is fine for repetitive tasks, but treats people as nodes in the machine. Companies, ever more dependent on electronic communications, are gradually recognizing that process improvement rests upon a deep understanding of how people work together in processes and work together to improve processes. Leveraging email systems and back office applications, Action gives context to this work. The vocabulary of speech acts reflects the way work is really performed as opposed to the way many packaged software developers want people to behave. Think of the Action speech acts as primitives from which any human work process can be built. Although the names of these primitives might not match the language used in a specific business context,

they are the semantic reality beneath commercial transactions and the human collaboration that yields transactional value. Action allows the built-in terms such as *accept* and *counter-offer* to be customized to a specific business vocabulary. In this way, non-technical people can be included in the process of solution design further ensuring a match between business requirements and delivered IT systems.

In a workflow system, throughout is a measure of the progress of cases through a well-defined workflow. Action can do this, but its ability to analyze a process is finer grained. In Action, work is structured around phases such as *preparation*, *agreement* and *performing*, and speech acts such as *request*, *offer* and *accept*. Because of this, performance around the work item can be computed or targeted to encourage and foster desirable work practices. For example, it could be important to a procurement process to understand how quickly people reach agreement prior to procurement activities being initiated. Action provides the means to set a timer on that phase. Bottlenecks are easily identified. Six Sigma strategies can be used to identify processes that have gone out of bounds. It's like having an in-built, active, project manager within the solution. Imagine an active version of Microsoft Project which is not just an off line version of the plan, but a tool to make the plan come to life, in real time.

There are many implications of Action's choice of process design model. One of these is the idea of an end-to-end person-to-person process. In many business processes there are considerable interdependencies among the parties involved. The way people work together can make or break the overall success of a process or project. Unlike email or prescriptive workflow, Action allows the management of every interaction users initiate, no matter how many people are pulled into the process. How many times have you heard someone say, "I sent an email, but didn't hear back." Tracking all the interactions in a process using email is impossible. No one person has visibility of anything other than the content of their own mailbox. It's the same with some workflow solutions. The user's only interaction with the system is their own task list. Yet delays in processes that depend on human decisions usually arise from poorly defined goals and needs. There is a sense in which we need the concept not just of a system-to-system transaction, but also a person-to-person transaction; that is, all of the activities required, across everyone involved, that need to be agreed, performed, evaluated and judged satisfactory before the business transaction is finally closed. Action performs the role of a transaction management system for how people work together. Action tracks work from the intitial request to the point where the customer declares satisfaction. And Action uses appropriate mechanisms to reach the final mile to that customer: email, mobile phone or PDA. Action extends its person-to-person process model over every medium toward users who may not have access to the Coordinator portal on the intranet, extranet or public Internet.

Where there is a need for a greater emphasis on analyzing and executing the plans, negotiations, decisions and commitments that people make, rather than on the outputs of data systems they use, Action's solution should be evaluated. It tracks the history of each interaction set out in the process model, and the resulting data is readily available for analysis, fulfilling the adage of "that which can be measured can be improved."

The value of a speech act based solution for person-to-person process management has been demonstrated by case studies in the area of new product development, customer self service, supply chain, corporate performance management, orders and fulfilment, provisioning of services, marketing processes, high touch sales, contract management, engagement management, vendor relationship management, human

resource outsourcing, legal and compliance processes, budget review and approvals, and capital purchase approvals. Applications for this approach also exist in the domains of logistics, insurance claims processing, IT service delivery process, change management, fast moving consumer goods, help desk and management processes, reflecting the breadth of the solution.

The approach is coming of age. Knowledge workers now represent more than half of today's G5000 workforce and are the largest investment for many organizations. Recognizing that knowledge workers create unique solutions, and that human behavior cannot always be predicted, traditional workflow alone cannot maximise the impact of decision-making and agreement about cross-organizational issues, particularly in areas of critical business planning. Companies are in need of a solution that helps them better manage the process by which decisions are made. This is a critical gap in many of today's business processes and the way in which Action has addressed this significantly improves on unfettered and unmanageable electronic mail, overly prescriptive workflow or rigid data-entry oriented transactional back office systems.

Key decisions for the future of technology in business

In our article "Green Forms and the Genesis of Reengineering,"[1] we told a story about how automation can be a tyrant, but can also set you free. Work isn't just what you do. Work is not a task list. Work is what you process, for your work depends on others. Without a business process interaction system based on speech acts there will always be the danger of turning knowledge workers into call center robots, mere nodes in a predefined workflow. Think carefully about the design of technology which connects customers and partners with your knowledge workers in high value processes. Reassess the customer experience in your workflow-driven call center operations. Not everything needs to be reduced to a touch-tone-automated-call-response-system with ten levels of system selection before you get through to a human being who is then unable to answer your question and unable to connect you to anyone who can. Long lived, persistent, end-to-end business processes consist of system-to-system, person-to-system and person-to-person interactions. These real-world business processes have been, and always will be, human-centred phenomena, and that's why person-to-person process management must be at the heart of 21st century BPM.

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[1] http://www.bptrends.com/