What are Human Processes?

Welcome to a new column for BP Trends. In "Human Processes," I will be looking at the nature of work that involves human beings, explaining why it is critical to manage such activity from a process perspective, and showing how to do it.

Some of you – regular readers of BP Trends, in particular – may already know something of what I have to say on this topic. Others, however, may be asking what such an analysis has to offer. Surely enough has been written about the theory of process management by now – Isn’t it time just to get on with it?

This view appears to be supported by the current efforts of software vendors to rally round the new BPEL4People specification that claims to integrate "patterns for human interactions" with the process execution language BPEL – an integration that the older process execution language XPDL has always claimed, due to its origins in workflow technology. Further, the current process diagramming standard BPMN sets out to provide a universal notation for depiction of all business processes, no matter the type. Is not the matter done and dusted, with the remaining work for process specialists being simply to roll out a combination of such techniques into organizations worldwide?

The truth of the situation is that process handling of human work in the workplace is currently restricted to a certain kind of human work – work that is repetitive and often semi-automated, work in which human involvement is restricted to data entry and low-level decision-making. Much back office work – in the finance department, for example – is of this nature, along with low-level customer-facing activities. Think of a call center, in which operators fill in fields on a screen in response to a caller's problem, and make decisions from a limited range of options – Send an engineer? Offer a replacement? Give a refund?

Such human processes are defined once, then run ad infinitum: The idea is that each instance of a particular process has a choice of routes that is fixed in stone. Changes to the choice of routes may occasionally need to be made, but this is not a trivial matter, generally requiring the IT department to get involved and often requiring a project to be started. Most organizations try to avoid such process definition changes as far as possible. However, it is not always possible to put them off, since if process instances start deviating from the prescribed choice of routes, the running costs escalate very quickly. Such edge cases form the 20% of work that, according to Pareto’s Rule, generates 80% of the costs. Further, in a business world delimited more and more by government regulations, work that drops off the radar in this way represents a serious threat to the organization.
Put like this, it sounds as if human work is nothing but a problem for the enterprise. And, indeed, the kind of work described above is typically a candidate for greater and greater automation as time goes on. Think, for example, of the increasing use of voice menu systems to cut down demands on call center staff – often you never get to speak to a person at all these days, and end up listening to a pre-recorded message or entering numbers via the telephone keypad and being promised a response "as soon as possible." In those cases where people cannot be entirely removed from the picture, their engagement in such a work process still tends to become more and more limited as time goes on.

However, this is not by any means the complete picture. In fact, such mundane human work is very much the tip of the iceberg. By and large, it is a necessary but unwelcome part of organizational activity – usually generating cost rather than revenue. The most interesting type of human work is the kind of work you do, reader – work in which your mental and social skills are engaged to research, evaluate, analyze, make plans, and interact with a variety of colleagues both within and outside your organization in a highly complex manner. This is where humans add their true value to an organization – where they provide the fuel that makes the organization run, in a way that no automated system could ever do.

Here is a quote from IT analyst, and BPM specialist, Michael Dortch, of Robert Frances Group:

I now think there are two classes of processes – task-driven and human-driven. I also now think that task-driven processes define and/or describe how tasks get done, often by IT systems and resources, while human-driven processes define and/or describe how people do things. Both are essential to successful business operations. However, they are very different from one another, and cannot likely be equally effectively addressed by any common set of processes or technologies.
[http://tinyurl.com/2f5ot6]

Why is a BPM expert like Dortch making such a dramatic division? Because all mainstream BPM languages, including graphical notations like BPMN, are based on carrying out steps in a pre-defined sequence – and this is not what happens when humans work together. Even with modelling techniques and software tools rebadged as “human-oriented” or “task-oriented”, approaching high-value human work in this way is misleading and ultimately futile. The success of high-value human work, work that is not mechanistic but truly human-driven, depends on recognizing that humans are at the very centre of the work, as drivers of the process rather than as cogs in the machine. This requires new techniques and tools, based not on task sequences but on goals, responsibilities, and commitments.

As an example of this, see the interesting analysis at [http://tinyurl.com/2ac37f] by the current Chairman of the Technical Committee of the Workflow Management Coalition. Keith Swenson starts with "a very simple process that represents a writer writing an article for a reputable publication, and an editor reviewing that article to make a decision on whether the article is suitable for publication or not". Attempting to represent in BPMN this trivial process, far more basic than any real-world collaborative activity, Swenson ends up with a horrible mess of a diagram, and concludes,

The detailed diagram has lost the representation of the fact that there are actually only two human activities being performed. You can't really see what the people are doing without getting lost in the details of what the system has to do to communicate to the people.
Why did the diagram of such a simple process end up so complicated, without even delivering any value? The reason is that the entire premise of such a notational technique is wrong. Human collaborative work cannot be structured as a sequence of tasks at all, but must be based on higher-level notions. The true structure of human-oriented activity is based not on low-level tasks, but on the identification of individual and shared aims. A process description for high-value human work then moves on to define areas of responsibility, and leads finally to the making, sharing, and fulfillment of commitments. Along the way, process participants must be able not only to maintain the private information they need to do their work, but also to use this information to continually re-engage with each other over complex matters such as assessment of competency and prioritization of deliverables (among many other such matters). To do all this effectively requires structure that you won’t find in a BPMN diagram.

Turning to BPEL4People, this new addition to BPEL claims to support “patterns for human interactions.” However, in terms of Dortch’s division between task-driven and human-driven processes, these are human interactions only in task-driven processes. In other words, what the specification authors mean by “human interactions” are interactions between humans and systems (H2S), not interactions between humans and humans (H2H).

Let’s take an example. Suppose Joe to Jane escalates a document for approval – a typical application for BPEL4People. What happens is this. First, Joe tells the system “this document needs higher approval.” Then, the system works out that Jane should do it, and adds the approval task to her work list. Finally, next time Jane accesses her work list, she sees a new document for approval. There is no direct interaction between Joe and Jane at all. Everything is mediated by work lists, or notification managers, with the logic largely set in stone at the time the processes were originally implemented.

This is an entirely separate issue from dealing with interactions between humans and humans (H2H). Such work is collaborative, innovative, and adaptive – and cannot be supported with a language such as BPEL, no matter how it is extended via add-ons such as BPEL4People.

Let’s take another example. Suppose Joe uncovers a new opportunity with a client. He knows that to realize the opportunity he will need support from others, including Jane. He needs to start a new work process to deal with the opportunity, and this work process will involve a number of people, although at the start the only person Joe knows he will need is Jane. Others will be included as they go along, and, similarly, they will define on-the-fly the various responsibilities, activities, and deliverables of each person. If you know anything at all about BPEL4People, it will be immediately obvious that it could never be used to support such a work process. Rather, H2H interactions are the domain of Human Interaction Management [http://tinyurl.com/2bd5r], aka HIM.

BPEL4People is related to HIM, in that both deal with humans, but the two approaches are complementary rather than competitive. In fact, they are often closely tied together. Let’s take a third example – a system responsible for resolving line faults in a telecommunications network. Most of the faults are handled entirely automatically. Some need minor manual involvement – for instance, to approve an engineer visit. However, a small but significant percentage cannot be resolved in either way. This last type of faults includes the complex problems, those that humans need to work together to solve. Typically, a solution may require several different people to collaborate – call center staff, network specialists, service engineers, exchange staff, and the customer themselves – in order to determine the cause of the fault and find a way to deal with it.

Managing complex problems like this is where much of the money is spent. A large telco may spend tens of millions of dollars per annum on such work; at least, they may if they have not yet adopted HIM techniques and tools. With HIM, it is simple to deliver a highly efficient solution, a solution that not only maximizes the value of the humans involved but that also leverages existing resources within the telco.
In such a solution, standard line faults are handled via conventional workflow, defined using BPMN, BPEL (with or without BPEL4People), XPDL, or any other notation. When it comes to a complex fault, however, a human using the workflow system passes the issue out to a Human Interaction Management System (HIMS) for resolution, choosing as a starting point what seems to be the most suitable template "Story" (i.e., work process). The humans involved in the Story – who may well increase in number during its life – bring the issue to the point at which semi-automated resolution is again possible; they evaluate the problem, agree to a solution, and set it up. Then as much as possible of the remaining work is passed back to the workflow system by invoking a suitable set of Web services to clear the fault.

When the complex faults are handled like this, the work becomes tractable. It can be structured, managed, supported, and improved – just like the mechanistic work required to resolve standard faults. When it comes to the bottom line, less money is spent, less time is taken, and both the telco and their customers are happier.

**Take Away**

Lots of things that happen in organizations simply do not match in any way the underlying "parallel flowchart" paradigm of current mainstream process notations and languages, no matter how these notations and languages are extended in future.

For example, consider the sort of things you personally do at work. The "patterns for human interaction" with which the BPEL4People specification authors are concerned may be useful in integrating some forms of workflow, such as document approvals, into mainstream BPM; it will be valuable for many organizations to handle such patterns using the same BPEL-based technology that they use for fully automated processes. However, these patterns are totally inappropriate for activity that is innovative, collaborative, and adaptive. If you were asked to do your job using a process defined in BPEL4People, you would probably end up resigning out of sheer frustration.

Despite this, some software vendors are currently making attempts to bundle H2H process support into their current workflow or BPM offerings, typically by creating an artificial integration of task sequences with office applications such as Word and Excel. However, this is confusing apples with oranges, since they are attempting to impose on H2H interactions a metaphor that is entirely inappropriate. Humans trying to collaborate find it not only unhelpful but actually abhorrent to view their interactions with each other as a set of pre-defined steps carried out in sequence, and will ignore, work around, or subvert such bastardized pseudo-solutions. We all know there is more than this involved in what we do at work – notions of responsibility, accountability, goal-directed communication, privacy, rework, prioritization, consensus, authority, and a lot more besides.

To deal properly with H2H interactions, you need HIM techniques and a corresponding software tool – the HIMS. The HIMS is not yet another heavyweight system imposed on your creaking enterprise backbone, but rather a lightweight solution that each user can download and install themselves. In practice, the HIMS is a new way of accessing your messages, documents, and office systems that is better than, for example, the Windows desktop or Start menu. Rather than presenting everything as groups of icons, or lists of choices, a HIMS structures everything into your work processes, and offers you what you need, when you need it. Further, since the HIMS is a desktop not a server-side application, it can be used to collaborate across organizational boundaries, with the necessary layers of security provided by default, right down to process instance level.
Further, the true value of an HIMS is that it knows what your goals and responsibilities are, and helps you achieve them. Based on HIM theory, an HIMS is the next step for workplace technology, a new breed of office application – your personal process assistant, described in a recent Information Age report as “set to produce the first fundamental advances in personal productivity since the arrival of the spreadsheet” [http://tinyurl.com/2s7n93].

HIM techniques and tools are not hard to use, since they are nothing but a formalization of common sense – a direct reflection of what really happens when we work with other people. This formalization comes from many years of research and practical experience, which has resulted in well-defined ideas, principles and patterns – ideas, principles, and patterns that genuinely meet organizational and individual needs for control over H2H interactions.

The reference implementation of an HIMS is HumanEdj, free software available for download at http://humanedj.com. Until recently, available versions of this software were in the nature of a proof-of-concept – satisfying the theorists that HIM principles are valid, but lacking a user interface simple and powerful enough for the average office worker. With the new version 3, which may be available for public download by the time you read this, all this will have changed.

HumanEdj 3 includes an entirely new user interface designed from the ground up to meet the needs of a business user, with seamless integration of email, instant messaging, office applications, back-end server processing, and more. It is a simple desktop application that in most cases requires no configuration at all, and should improve your productivity from day one simply by helping you manage your email inbox better. If this article has struck a chord with you, give HumanEdj 3 a try – and if you'd like to let me know what you think, I'll be very interested.

Author


Along with his research and consulting work, Keith is the CTO of Role Modellers Ltd, whose company mission is to develop understanding and support of collaborative human work processes across industry, a field that Keith has pioneered with his work on Human Interaction Management (see http://human-interaction-management.info). Role Modellers' free software, HumanEdj, is the reference implementation of a Human Interaction Management System.

Find out more about Keith and his work at http://keith.harrison-broninski.info.