Coordination, Coordination, Coordination

By Howard Smith and Peter Fingar

In his landmark book, *Process Innovation,* Thomas Davenport defined a process as follows:

> Simply a structured, measured set of activities designed to produce a specified output for a particular customer or market. It implies a strong emphasis upon *how* work is done within an enterprise, in contrast to a product focus's emphasis on *what*. A process is thus a specific ordering of work activities across time and place, with a beginning, an end, and clearly identified inputs and outputs: a structure for action.

This definition, although helpful, hardly begins to explain the true nature of collaborative and transactional business processes. At the very least the word coordination is missing. *A business process is the complete and dynamically coordinated set of collaborative and transactional activities that deliver value to customers.* Processes are characteristically:

- *Large and complex*, involving the end-to-end flow of materials, information and business commitments.
- *Dynamic*, responding to demands from customers and to changing market conditions.
- *Widely distributed and customized across boundaries* within and between businesses, often spanning multiple applications on disparate technology platforms.
- *Long running*—a single instance of a process such as "order to cash" or "develop product" may run for months or even years.
- *Automated*—at least in part. Routine or mundane activities are performed by computers wherever possible, for the sake of speed and reliability.
- *Both "business" and "technical" in nature*—IT processes are a subset of business processes and provide support to larger processes involving both people and machines. End-to-end business processes depend on distributed computing systems that are both transactional and collaborative. Process models may therefore comprise network models, object models, control flows, message flows, business rules, metrics, exceptions, transformations and assignments.
- *Dependent on and supportive of the intelligence and judgment of humans*. People perform tasks that are too unstructured to delegate to a computer or that require personal interaction with customers. People also make sense of the rich information flowing though the value chain, solving problems before they irritate customers and devising strategies to take advantage of new market opportunities.
- *Difficult to make visible*. In many companies business processes have been neither conscious nor explicit. They are undocumented, embedded, ingrained and implicit within the communal history of the organization, or if they are documented, the documentation or definition is maintained independently of the systems that support them.

The three most fundamental characteristics of a business process have little to do with the obvious inputs and outputs of individual work tasks. They are *coordination*, *coordination* and *coordination!* If activities are collections of individual tasks, it is the synchronization and coordination of those activities and tasks that make them business processes. Coordination is a complex subject—a Center for Coordination Science has even been established at the prestigious Sloan School of Management at MIT to study the subject.

Business processes were once thought of as those to be scheduled around people—work that was waiting for a telephone call from a customer, or work that had to be processed at a specific time ("I will expect your call at 10 o'clock"), or work that had to be transferred to a different person because the person who did the first part of the processing got sick or quit before the task was complete. But now, as Charles Plesums of Computer Sciences Corporation (CSC) and the Workflow Management Coalition (WfMC) points out:

> The development and use of workflow technology has moved from simply supporting the routing of work between people to routing work horizontally between resources. Here the resource may be a person, but may also be a system or even a machine. Routing is also vertical (controlling steps that will be performed at each point in the journey) such as when programs will be invoked by the person, or actually invoking the program. And as data is being moved between processes, there is typically integration with the processing systems—which pushes workflow into the enterprise application integration arena.

In addition, the simplest workflow processes offer the least strategic advantages. So what if Ford "reengineered" its three-way matching problem in the accounts payable department? Coordinating business processes is neither as simple nor as linear as portrayed in the tidy world of traditional task management. Business is constantly changing, messy, unordered and chaotic, and work activities and tasks have to be processed in parallel. Coordination requires the spawning and asynchronous execution of nested tasks and parallel activities in order to capture the richness of complex, real-world business processes.

And it is not just tasks that occur in parallel, but decision-making, distributed computation and the movement of information within the company and across the value chain. But many companies have been indoctrinated with the restrictive perspective of the business reengineering movement, in which activities and tasks are to be understood in terms of linear flows, glossing over their true complexity. This way of thinking must be transcended if business processes are to embody the far more complex realities of coordination.

Earlier thinking about processes lacked an underlying "science of process" for implementing its insights. Today, process calculus provides the foundation needed to cope with the true nature of business processes and the underlying problems of coordination.

This column is dedicated to those at work every day building the company of the future, the process-managed enterprise. We look forward to your feedback that will help shape this discussion. Like the third wave of BPM itself, this column will be built not just to last, but also to adapt to your needs and interests. Write to us at authors@bpm3.com

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