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Fujitsu's Process Discovery Technology

I'm often asked about where BPMS is today, and where it is likely to be tomorrow. I've generally argued that BPMS is still just getting started. Most of today's BPMS applications are really workflow or EAI applications that could have been done in the late 90's. The tools may make it easier to create Internet-based applications, but the fact is that most of the applications were developed by IT with minimal involvement on the part of business managers and with little expectation that business managers would manage their processes using the application.

There's nothing wrong with good applications created by IT developers, of course, but it isn't what I hope for from a more mature BPMS technology. Like Smith and Fingar in *Business Process Management*, I hope for the day when BPMS brings business managers and IT together resulting in applications that are increasingly under the day-to-day control of the business manager. I want to see business managers watching data from processes, as they are executed, and making changes in rules or flow sequences to update the processes as the business environment changes.

To make this a likely scenario, the interfaces for BPMS products need to be improved and new tools need to be introduced to help managers understand their processes. During the past year, BPMS vendors have been buying up process modeling and BI vendors, and I see both of these types of acquisitions as hopeful signs that BPMS vendors will soon provide better interfaces for business managers.

This past month, Fujitsu introduced a new technology that provides an exciting glimpse of another approach that I think could make BPMS much more useful to both IT developers and business managers. Fujitsu terms the new technology automated process discovery and it is now being piloted as a service in North America.

In essence, automated process discovery captures all the process information going to and from databases. Obviously, this only works with processes that generate data, but most processes do these days. Consider the manufacturing process described in Figure 1. Fujitsu's automated process discovery system could analyze historical database metadata and identify all the times instances of the process put information into, or retrieved data from, the databases associated with the major applications used in the process. Using this "event log" data, the tool would work backwards and generalize a picture of the process.

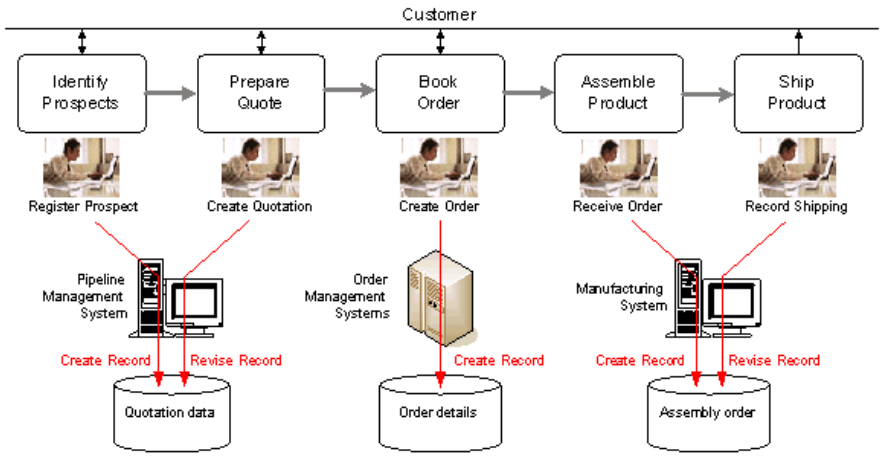

Figure 1. Most processes, as they are executed, generate event logs as they enter and retrieve data from databases.

Imagine that the process shown in Figure 1 had occurred hundreds of times and wasn't a very well-organized process. Using automated process discovery you might generate a picture that looks like the one shown in Figure 2.

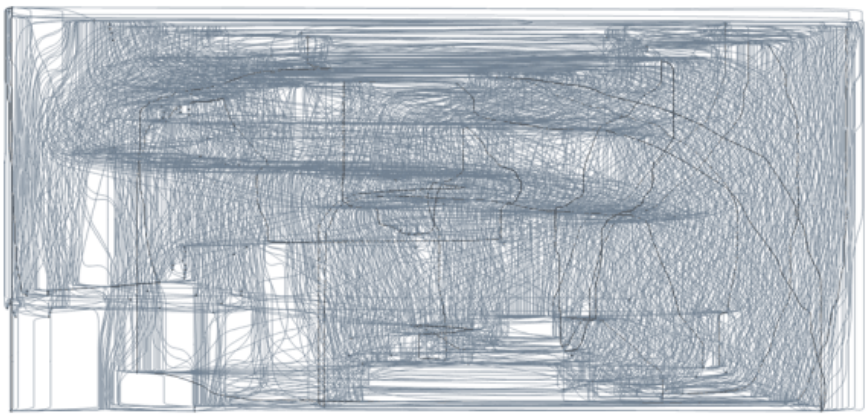

Figure 2. An initial visualization of a process via automated process discovery.

The diagram shown in Figure 2 is an actual process generated from a manufacturing process that produces hard disks. What you see immediately is that this process has lots of feedback loops and lots of exceptions. The automated process discovery tool allows you to refine your analysis. You can, for example, tell the tool that you only want to look at a map of the activities through which at least 50% of the flows go. In this case, you might get a picture like the one shown in Figure 3. Suddenly, the main activities that make up the process

emerge from all the loops and exceptions.

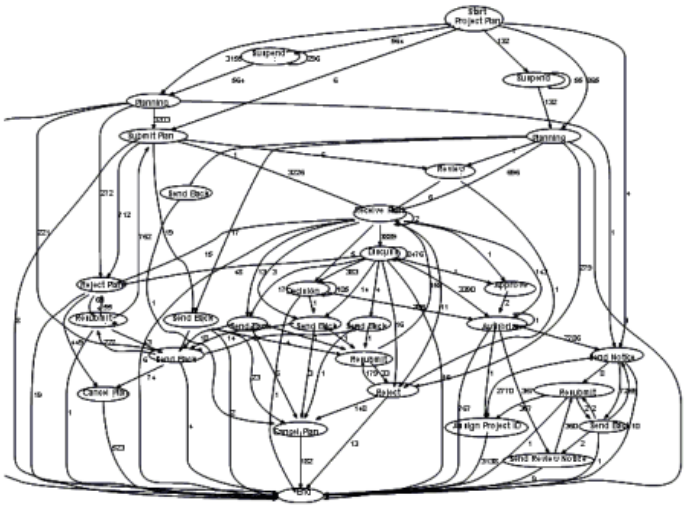

Figure 3. A visualization of a process that only shows the activity sequence that 50% of the processes use.

Now, you can work back and forth, focusing on the flows into or out of any specific activity shown in Figure 3. In this case, you can quickly see that some flows nearly always flow from one activity to another, while other flows generate a hairball of lines to many different activities. This, in turn, allows you to ask why a given activity, as it currently works, generates all the exceptions. You discover activities, for example, that rely on business rules that generate lots of "unacceptable" transactions, which are sent to someone who handles exceptions, who knows the transaction really is acceptable, and sends it back for processing. In a similar way, you can easily identify processes that generate loops because items needed are commonly out of stock and the order must wait in limbo, looping until it can be filled. And, of course, you can determine how much time elapses during and between each activity.

It's easy to see how automated process discovery can be used to help an IT development team that is trying to understand a process. What excites me more, however, is that I can see how automated process discovery will provide business managers with the kind of information they need to make decisions about rules and policies. It isn't IT, by-in-large, that establishes the business rules that generate exceptions, which are, in fact, OK to process, nor is it usually an IT decision that sets an inventory level. These are decisions that business people make, and if this kind of information can be quickly fed back to the appropriate business manager, these decisions can be modified to smooth the functioning of a business process. This, it seems to me, is the real power of BPMS - to empower business managers to monitor their processes and change them on a day-by-day basis to assure that the processes are working as well as possible. This kind of business manager oversight can only occur if BPMS provides the tools necessary to help business managers visualize problems and pinpoint changes that will result in better processes.

I can easily imagine a teaching version of the Fujitsu product that business analysts can use to explore predefined data sets to help them learn about the problems that real processes get bogged down in, and to practice making changes and learning what happens. You can do this kind of thing by creating a process simulation model, of course, but the automated process discovery, which generates the diagrams from existing process data, certainly makes model generation and the analysis work much easier.

I haven't begun to describe all that you can do with Fujitsu's automated process discovery technology. This isn't intended to promote Fujitsu's offerings. The Fujitsu process discovery service is the first package I've seen that can do anything like this, but there may well be other vendors offering similar functionality and if I find out about other variations on this approach, I'll write about it. In the meantime, I urge readers to check out the Fujitsu offering. You can find more information at www.computers.us.fujitsu.com/interstage/process_discovery.

Fujitsu's automated process discovery technology seems, to me, to provide a glimpse into the future of BPMS. This is the kind of technology vendors will need to incorporate into their products if they really want to support the business managers who are responsible for managing processes on a day-by-day basis.

Till next time,

Paul Harmon