

## Workflow in Your Future?

Workflow. You've heard the buzzword, but what exactly does it mean? And why should you care?

According to Bob Morris, you should care because businesses will increasingly look to workflow systems to stay competitive. Morris, the Chief Information Officer for [Dickens Data Systems](#), is very busy these days laying the groundwork for automating many of Dickens' business processes via workflow.

But what exactly "workflow" means can vary significantly—depending on whom you ask or what tool or product suite they are describing. In their book, *Introduction to Groupware, Workflow, and Workgroup Computing*, authors Setrag Khoshafian and Marek Buckiewicz, delineate these typical characteristics of a workflow system: (1) It is computer-supported. (2) It is collaborative (which distinguishes it from personal information managers) and (3) It supports work processing (which distinguishes it from other kinds of groupware). In other words, a workflow system assists in achieving specific business goals by helping to carry out the steps in a clearly defined process.

Historically, workflow has its roots in Document Imaging Systems. The innovation of placing documents online by scanning them also allowed computer networks to handle the processing of the documents by routing them to all the parties in an organization that needed to see them.

Today, a distinction is often noted between such document-routing workflow systems, usually based on email, and workflow systems that process transactions, working from a central database. Which type of workflow system you choose depends on the process you want to automate.

Morris is working on both kinds. He expects to use workflow software, possibly Lotus Notes, to implement document routing for Dickens--for example to automate the processing of expense vouchers. This will allow Dickens' business travelers to submit their expense reports electronically, while still on the road if desired. This also points out a key advantage of workflow--the ability to speed up work by processing some steps in parallel. For example, all of the people who need to review and approve expense reports will be able to do so at the same time, instead of passing a single paper report from hand to hand.

For transaction processing, which is further in the future for Dickens, Morris is looking at three-tier client server database systems that also include some vertical-application functionality. SAP, which is strong in inventory control and accounting applications, is one possibility.

When considering workflow, preliminary analysis of the process is critical. According to Dickens' President Ted Davis, you must define a distinct process if one is not already there. Morris adds that it's crucial to understand the strategic objectives of the business. He recommends looking for situations where workflow can be

implemented with relative ease but would have a big impact, solving a problem that people deal with every day or one that is tedious and time-consuming.

Once the problem is clearly identified, the next step is to diagram the process, showing the tasks as nodes and the flow of data as links. During this stage, you can see if any of the tasks can be done in parallel. This is also where commercial workflow diagramming tools are useful. These tools let you graphically lay out a workflow and assign properties to the nodes and links. Diagramming tools are normally available as components of a development environment or application framework, which may also include a "workflow engine" that handles the actual routing of data. There are a number of such product suites on the market, including IBM FlowMark, DEC LinkWorks, and FileNet's Visual WorkFlo.

Once development is underway, Morris recommends rapid prototyping of the workflow system, with review by a "resident authority" who is an expert in the business process. Development should be iterative, repeating the prototype cycle until you have it right. Morris also cautions that you consider the burden that workflow processing will place on the network infrastructure. This kind of processing is a totally different way of using the network and implies high usage. At Dickens they have installed fiber-optic lines to handle the increased traffic. The network will be TCP/IP-based but with multiple operating systems involved. This is one of the bigger challenges, from a software development point of view.

Multiple platforms, high volume, processes that span several departments of an organization--these issues make workflow automation a particularly interesting and challenging area for developers. But it is also an area of great business opportunity. Says Davis, "Every business needs a workflow system. Anywhere where paper forms are used continuously, workflow would decrease labor and improve quality. This does not mean that all businesses with paper systems should abandon them. In some cases it would not be cost-effective to do so. However, any process that cuts across many different processes and work groups with high volume is an immediate and ripe opportunity for workflow."

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