



Workflow at its simplest is the flow of documents and/or tasks through a work process. More specifically, workflow is the operational aspect of a work procedure: how tasks are structured, who performs them, what their relative order is, how they are synchronized, how information flows to support the tasks and how tasks are being tracked. As the dimension of time is considered in Workflow, Workflow considers "throughput" as a distinct measure. Workflow problems can be modeled and analyzed using graph-based formalisms like Petri nets.

While the concept of workflow is not specific to information technology, support for workflow is an integral part of document management and imaging software.

Scientific and business workflow paradigms

Distinction can be made between "scientific" and "business" workflow paradigms. While the former is mostly concerned with throughput of data through various algorithms, applications and services, the latter concentrates on scheduling task executions, including dependencies which are not necessarily data-driven and may include human agents.

Scientific workflows found wide acceptance in the fields of bioinformatics and cheminformatics in the early 2000s, where they successfully met the need for multiple interconnected tools, handling of multiple data formats and large data quantities. Also, the paradigm of scientific workflows was close to the well-established tradition of Perl scripting in life-science research organizations, so this adoption represented a natural step forward towards a more structured infrastructure setup.

Business workflows are more generic, being able to represent any structuring of tasks, and are equally applicable to task scheduling within a software application server and organizing a paper or electronic document trail within an organization. Their origins date back to the 1970s, when they were purely paper-based, and the principles from that period made the transition to modern IT infrastructure systems.

The key driver to gain benefit from the understanding of the workflow process in a business context is that the throughput of the workstream path is modelled in such a way as to evaluate the efficiency of the flow route through internal silos with a view to increasing discrete control of uniquely identified business attributes and rules and reducing potential low efficiency drivers. Evaluation of resources, both physical and human is essential to evaluate handoff points and potential to create smoother transitions between tasks.

As a way of bridging the gap between the two, significant effort is being put into defining **workflow patterns** that can be used to compare and contrast different workflow engines across both of these domains.

In general, workflow techniques are appropriate only for work in which human involvement is limited to key data entry and decision points. For innovative, adaptive, collaborative human work the techniques of Human Interaction Management are required.