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## Business process model reasoning: from workflow to case management

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### Abstract

Existing limitations and problems in the current life-cycle of software applications is expected to encourage new development paradigms. New technological trends, aimed at responding to current needs, such as flexibility, dynamics, scalability and creativity will drive the envisaged changes. This article describes the various types of business processes, ranging from structured workflows to semi-structured flexible business processes, and methods to model each type of business process. Development of business process models based on the knowledge economy, changing corporate strategy and organization design, and agile enterprise paradigm requires BPMS technology to support weakly structured business activities and emerging ad-hoc tasks. Increasingly, organizations are expanding the use of BPM beyond their initial focus on structured processes into more challenging, cross-boundary processes that include more unstructured components. Case management technology allows the modeling of cases in which a business goal is achieved by taking decisions in the context of documents and other content objects. Case management is considered dynamic because it focuses on unstructured and ad-hoc processes. It is likewise a continuing process that involves people, information, processes, and technical tools. Furthermore, it is adaptive and adaptable because it can be used by non-technical users and is versatile in its applications in different situations. With the use of case management, circuitous business processes, fragmented communication, repetitive operations, missing documents, and long approval times can be permanently abolished.

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## 1. Introduction

The term “business process” has multiple meanings and definitions. Presumably, it was originally used in the Structured Analysis and Design Technique (SADT) in the 1970s, which included functional system modeling. The SADT procedure was applied under the name IDEF (Integrated Definition Modeling Methodology) by thousands of specialists in different organizations. Derivative models such as IDEF0, IDEF3, and IDEF5 are still widespread. For instance, IDEF3 is extensively used in all modern languages of business process modeling, including UML, BPML, EPC, etc. In the 1990s companies were encouraged to think in terms of processes instead of functions and procedures. A process is a set of tasks or activities to be undertaken which:

- has deliverables to external or internal customers,
- responds to events that take place (triggers),
- can involve several organizational units (which could be outsourced),
- creates value.

Currently, the graphical modeling of business processes, automatic generation of executable codes, and using them to construct applications is one of the most active areas of development and competition among different BPMS vendors. The number of companies and knowledge workers enterprises using graphic modeling is increasing. Moreover, even the principles of constructing such models are neither standardized nor universally accepted, though practically all major software vendors are highly active in their development. It is challenging to offer a generally accepted standard of BPMS modeling and use that can support dynamic business requirements. Hence, a large variety of competing specifications are presently under development.

In addition, it should be noted that all the previous methodologies were created from the viewpoint of a consultant, either in-house or third-party. However, a consultant is not involved in the activities of the company whose business he/she is going to improve, and he/she does not know the psychology of its employees and managers or the undercurrents of relationships within the team and with the outside world. This results in an abstract model of the company’s processes, which will then be introduced without these specifics and sometimes even without incorporating all the wishes of the employees and even of the management. As a solution, modern methodologies offer approaches oriented towards giving the initiative to users in the construction of business processes and then using a system involving these user-defined processes. Thus far, this approach is just a trend. Yet, there is an active discussion about such brand new approaches, whose cornerstone is to make it possible for the users to engage in constructing their own business processes.

As numerous discussions of the actual implementations of process approaches show, a significant proportion of such implementations not only produce no results for the company, but also remain as just a way of improving the company’s image. For example, a company may announce on its website it is certified to a certain standard (for example, in Total Quality Management) and has implemented a certain methodology. However, actual processes are frequently run in a completely different and often traditional way, with minimal dependence on what methodology or what BPMS was implemented. Sometimes the reason for this is the fact that during the survey and implementation, the company, its environment and often its employees, have undergone significant changes, which necessitates new surveys and implementation. In modern BPMS, the solution to this flexible and dynamic environment is in methods and modules of continuous improvement of processes.

## 2. Motivation of research

The challenge of how organizations can successfully deal with unpredictable, dynamic, and constantly changing environments has been a prevailing topic in both industry and academia for the past few decades. This has led to terms such as «Enterprise 2.0», adaptability, flexibility, «agile enterprise», etc. In the knowledge economy concept, Enterprise 2.0 or KM 2.0 business processes have acquired novel properties.

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