
Workflow Prototyping

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Workflow Prototyping is an innovative approach of analyzing and optimizing business processes. In this approach, we deliberately dispense with the representation of complex facts like it is often done with BPMN (White and Miers, 2008). Instead, we use a workflow system to generate an executable prototype in a very short time. Our experience shows that this method is superior to the mere modeling of processes when eliciting requirements together with subject matter experts.

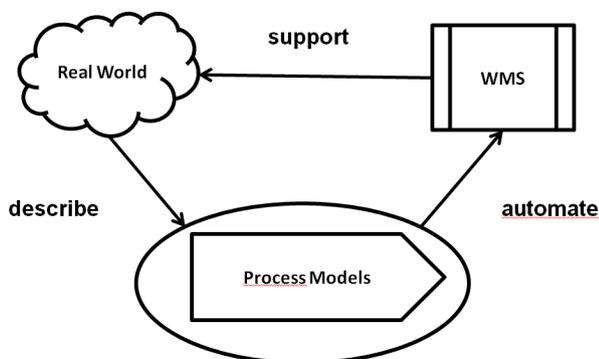


Figure 1: Closed circle (Aalst et al., 2009)

Process Automation

Every process optimization starts with the modeling of business processes. If one limits oneself to modeling, there is a high risk that process models become obsolete very quickly. This is one of the reasons for taking the next step: process automation. We then get a closed circle as depicted in fig. 1. The automation with Workflow Management Systems (WMS) has the following advantages:

Efficiency Automated processes run faster. The knowledge on the processes can be concentrated within the organization.

Conformance The adherence to the standard process is guaranteed by the WMS.

Up-to-dateness Since the circle is closed (cf. fig. 1), process models will be changed when necessary.

Using this approach, continuous process improvement becomes a reality (Miers, 2006).

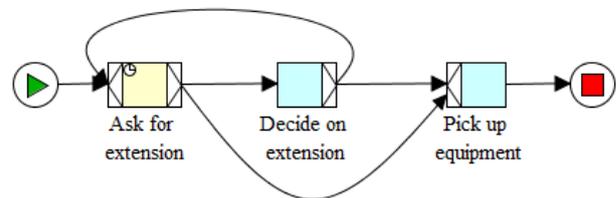


Figure 2: A YAWL Workflow (Hense and Malz, 2015)

Workflow Prototyping with YAWL

YAWL is an open-source WMS that is being developed since 2003 (Hofstede et al., 2010). In the YAWL editor, the control flow (cf. fig. 2), the data, and the organization are specified. Based on this information, an executable workflow is generated. At this stage, the resulting workflow has no connection to the existing IT infrastructure. However, the effort for creating it is minimal. In past projects, we have managed to do up to three iterations within a single user workshop. Subject matter experts can immediately "play" with their automated processes. It is this timeliness that is the strength of our approach.

After a short time it becomes clear if the chosen process can be automated, how the control flow is structured, and which external IT systems have to be



Figure 3: Project phases: Workflow Prototyping

connected. On this basis, the effort for an implementation and the integration of the workflow into the existing IT infrastructure can be estimated. Rheni's process model is depicted in fig. 3.

Process selection A process or a set of processes is chosen based on structure, individuality, and potential for optimization.

Prototype construction Rheni constructs the prototype based on documents and workshops with subject matter experts.

Effort estimation The results of the last phase are the basis for a precise estimation of the effort for the next steps. The customer takes a decision here.

Workflow integration In this phase, the workflow management system is integrated into a web-based application and connected to other IT systems. The integration of YAWL into the open-source portal Liferay is described in a German article (Hense, 2017).

A similar method has been applied in the domain of e-government (Belo et al., 2014).

The Company Rheni

Rheni GmbH is a consulting and information technology services company founded by Andreas Hense in 2006 on the business campus of Bonn-Rhein-Sieg University. Rheni has excellent access to knowledge in economics and information science. Rheni is situated on the Rhine in the economically thriving Cologne-Bonn area. Rheni combines long-standing experience in the broad field of business information systems with the verve and the innovative spirit of excellent young employees. Rheni's vertical range of production covers fundamental issues in IT-management as well as software-architecture, software development and service operation. The direct contact to applied research and the excellent infrastructure of Bonn-Rhein-Sieg University both guarantee Rheni's competitiveness. Among Rheni's customers are large service providers in the financial and public sector.

Andreas Hense has founded a competence center for process automation at Bonn-Rhein-Sieg University (Hense, 2012) and has organized the first international YAWL-Symposium (Freytag et al., 2013).

Rheni has used this methodology in projects concerning human resources management and operative planning.

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