

MATURE

Adaptive process management Joining process model with everyday work routine

Agility has emerged as an important common characteristic of successful businesses. Organisations of any size benefit from quick response to volatile markets and rapid changing user requirements. Conventional business process modelling and execution approaches have found themselves overstretched in such situations due to the lack of flexibility and the amount of overhead required for predefined process models.

THE APPROACH

Supporting knowledge workers in sharing process-related knowledge and refining processes

The approach is based on the insight that traditional "top-down" business process modelling approaches are too rigid and inflexible to capture the actual way processes are executed while pure "bottom-up" approaches may easily lose the focus and the alignment with organisational goals. Therefore, business process models are made agile and open by a joint hybrid approach.

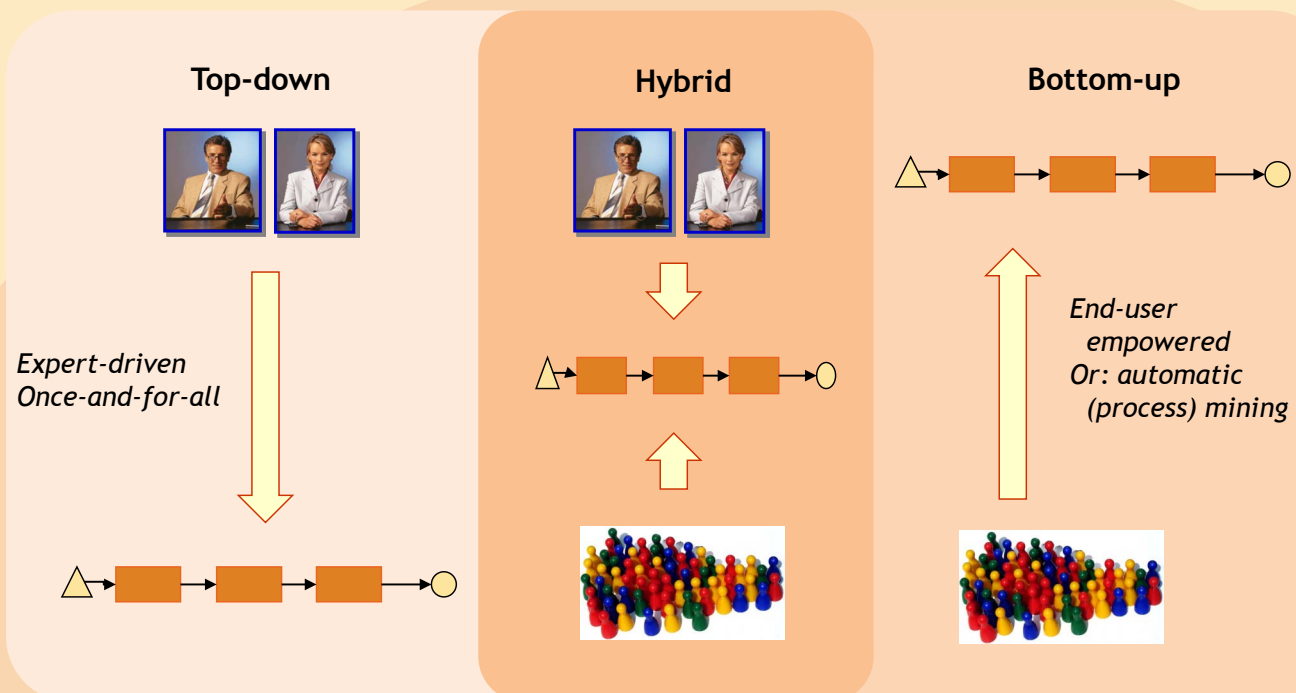
In order to achieve this vision, the strict distinction between build time and run time operations are soft-

tened. Process activities are presented to a user in a way that allows for individual adaptations. Any changes or enhancements to the process activities are documented and monitored. The advantage is two-fold: i) process-related valuable resources and experiences are proactively presented to the others in the right context; ii) when sufficient adaptation information are accumulated, we can decide whether or not to tune process models against the reality of actual process executions.

FOUNDATION

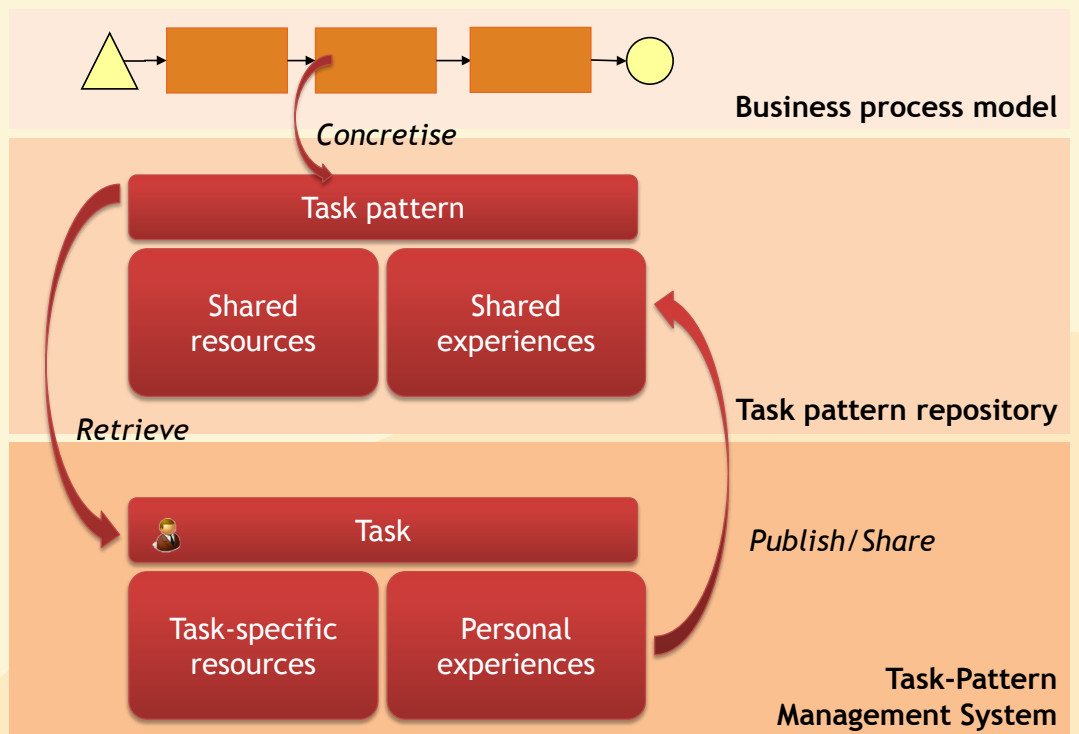
Continuous tuning and adapting business process models

Continuous tuning and adaptation of business process models is facilitated through monitoring and analysing task patterns. We leverage the activities of a process model to attach pertinent knowledge and experience to a process, via a one-to-one relationship between task patterns and activities. That is for each activity, the corresponding task pattern collects all the information that is necessary for users to work on a concrete instance of the activity, e.g. attached resources, comments on an is-



sue, or problems and solutions. When the process is actually executed, existing task patterns (e.g. P) will be retrieved from a pattern repository. The system helps users to populate P by recommending candidate resources to be used when executing a task. Upon finishing, the user can share her task adaptation with others by publishing it back to the task pattern repository.

The initial pattern should be thought of as a seed that triggers the process of attaching experience to a work context. These initial patterns are meant to grow larger while we learn more about the activities and mature over time adapting to the actual way in which the process is executed in practice. Maturing of task pattern indeed reflects back to evolve the process models according to the needs in practice. This is done by analysing adaptations made by individual users and stored in the task pattern repository. In addition the system based selection of knowledge intensive activities will be mined to answer questions such as "how often has one activity been chosen?"; "has this selection been appropriate?"; etc.



FACTS

Features

- Flexible automatic task assignment
- End user involvement in process modelling and evolution of process-related artefacts
- Process/task-centred knowledge structuring and knowledge sharing
- Adaptive process modelling through process mining and usage monitoring

Technology

The front-end of Demonstrator 4 (D4) is provided through a semantic desktop application featuring resource gathering and recommendation. Task patterns are modelled and stored in the Semantic Media Wiki. Task-related resources are collected in an RDF repository. The D4 back end is supported by ontology-based business process models constructed in a semantic modelling environment, e.g. ATHENE, which, when executing, are translated into a process execution language, e.g. BPEL or XPD, so as to work with workflow engines.

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