Knowledge Intensive Explorative Business Processes: Towards Smarter Services.

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Guest Speaker—

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KEYNOTE ABSTRACT

According to the Business Process Management (BPM) Context Framework [2], we distinguish between two goals when implementing a BPM project namely exploitative BPM and explorative BPM.

• Exploitation-oriented BPM : depicts exploitative BPM capabilities linked to exploitative analysis capabilities related to processes assessment through identification and quantification of process problems and exploitative execution capabilities related to automation of Business Processes [8]. It is orientated towards internal process optimization and standardization, deals with the inefficiencies of the functional hierarchical organization and not specifically geared towards achieving customer benefits, and most often focused on achieving more efficient operations [11]. Moreover, exploitation is described as an inside-out, reactive, problem-driven process management [9].

• Exploration-oriented BPM : is opportunity-driven and follows an outside-in approach [6]. It is described as being proactive in a way that it is driven by outside opportunities enabled by emerging technologies such as social media, big data, or Internet of Things in order to translate such new opportunities into entire new process experiences which requires a shift in thinking from 'pain points' to 'opportunity points' [9]. Moreover, explorative BPM is about crafting process visions that are so compelling and transformational that they motivate customers involved to explore how to make a desired future state [8].

The ways in which customers are changing pushes compagnies to launch business innovation and digital transformation [1] through the design of new capabilities, business models and processes in order to adapt to this paradigm shift and to catch digital opportunities.

In [10], Van der Aalst mentions "today's main innovations are intelligently exploiting the sudden availability of event data''. Moreover, Van den Bergh, in [11] states ''Social media and big data analysis enable organisations to get significantly closer to turning the customer's real-time process into their business process''. As a result, new ways to respond effectively to customer needs are taking root through the use of digitally available customer information, through digital technological capabilities, to deliver new, smarter services [12]. Also referred to as proactive services which are offered to customers in an individual mean according to customers' need and are closely connected to digital possibilities [7].

From this point of view, the precious amount of knowledge available at real time induces digital opportunities translated into variable and dynamic Business Process instances, which considerably increases the need for appropriate business process modelling approaches which are very flexible, controlled. by activating process activity data and where the sequence of actions depends on the specifics of the situation to deal with unpredictable circumstances to satisfy the current context.

Consequently, the new capabilities of BPM require flexible and dynamic technical solutions which lead to a trend towards engineering approaches aimed at designing more dynamic architectures. In this regard, although static or conventional software product line architectures (SPLs) do not provide mechanisms for runtime adaptation to different context conditions. Special attention has been given to an emergent paradigm, the so called Dynamic SPL (DSPL) [3] which extends the concept of traditional SPL (Software Product Line) by generating system variants at runtime and dynamically supporting their reconfiguration.

We propose a strategic process model supporting an approach [4, 5] which integrates DSPL concepts, along with the entire related dynamic properties, to the whole BPM lifecycle in order to dynamically adapt processes according to different context conditions in an individual environment. The proposed modelling methodology aims at identifying and formalizing the contextual knowledge relevant to customers life events in order to support companies to proactively conceptualize individualized and smart services. The approach supports variability for Business Process modelling namely by means of Extend Business Process Feature Model. This latter constitutes a rich knowledge resource.

KEY WORDS

Business Process Management, Customer centric context aware BPM, Dynamic Business Process, Dynamic Service Product Line, Software Product Lines, Knowledge intensive Business case, Decision model.

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