

Project Kaleidoscope: Research on Process Views



Applies to:

BPM, SAP Research, Australian Research Council

Summary

Funded by Australian Research Council, SAP Research and Swinburne University of Technology have been working towards a new collaborative BPM solution in a project known as Kaleidoscope. Current BPM solutions restrict the way data is shared between businesses – offering limited support for process visualization. To solve this problem, researchers have developed a comprehensive framework known as FlexView that gives firms full flexibility when it comes to sharing business processes. The joint efforts of SAP Research and Swinburne University have made collaborative BPM a whole lot more feasible.

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Author Bio



Dr Marek Kowalkiewicz is a Research Program Manager at SAP Research where he heads the User Experience Research Program. Marek received MSc and PhD (Summa Cum Laude) degrees in Information Systems from Poznan University of Economics in 2002 and 2006 respectively. He has worked with a number of universities, including University of Queensland in Australia, as well as with a number of research and development organizations, including Microsoft Research Asia. His main areas of interest include user experience, information retrieval and filtering, web information extraction, web engineering, enterprise services, service oriented architecture and business process management. He has published five book chapters and over forty research papers in journals and proceedings of international conferences. Currently, Marek works for SAP Research in Brisbane, Australia.

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Introduction

With business processes no longer being carried out by a single company, there is demand for more flexible, holistic BPM solutions. Existing BPM solutions restrict the way data is shared between businesses as they offer limited support for process visualization. Firms either have complete access to their partners' processes, or very limited access to these processes – holding back collaboration efforts. To solve this problem, researchers from Swinburne University of Technology and SAP Research have found a way to give firms full flexibility when it comes to sharing business processes. A comprehensive prototype for this purpose, named FlexView, is discussed in this article.

Overview of Project 'Kaleidoscope'

Funded by Australian Research Council, SAP Research and Swinburne University of Technology have been working towards a new collaborative BPM solution in a project known as Kaleidoscope. The project started in July 2007 and is due to finish in 2010. Researchers have developed a comprehensive framework known as FlexView that allows firms to define and switch between different views of a business process. Researchers have named the project 'Kaleidoscope', because like a tube of mirrors which creates different images as it is turned, each entity involved in the process sees a different view. Parties involved in the process have access to information that they need to complete their task – which keeps private information hidden.

Process View Introduction and Examples

The concept 'process view' denotes a partial representation of a business process. A process view can hide irrelevant or private information from other organizations – and reduce the complexity of a process by showing a more abstract/concise view. Different process views are needed due to several reasons, including:

- **Authority Control.** E.g. Staff / managers
- **Multiple Level Representation.** Zoom-in / zoom-out
- **Display Screen Adaptation.** E.g. PC screens / hand-held display devices
- **Diverse Relationships.** Retailer vs customer / Supplier vs customer

Motivating Example

Different process views are needed when different users are involved in a process. Figure 1 shows a problem solving process in the form of a BPMN diagram.

In this example, a process architect is responsible for checking and administrating the low-level process details. A business analyst, however, may not have the same concern on process details as the process architect. Instead, he may prefer to see a more concise view of the process. Figure 2 shows a more abstract view of the process, where certain tasks (i.e. "Receive Email RE Problem" and "Send Email Confirmation" are hidden.

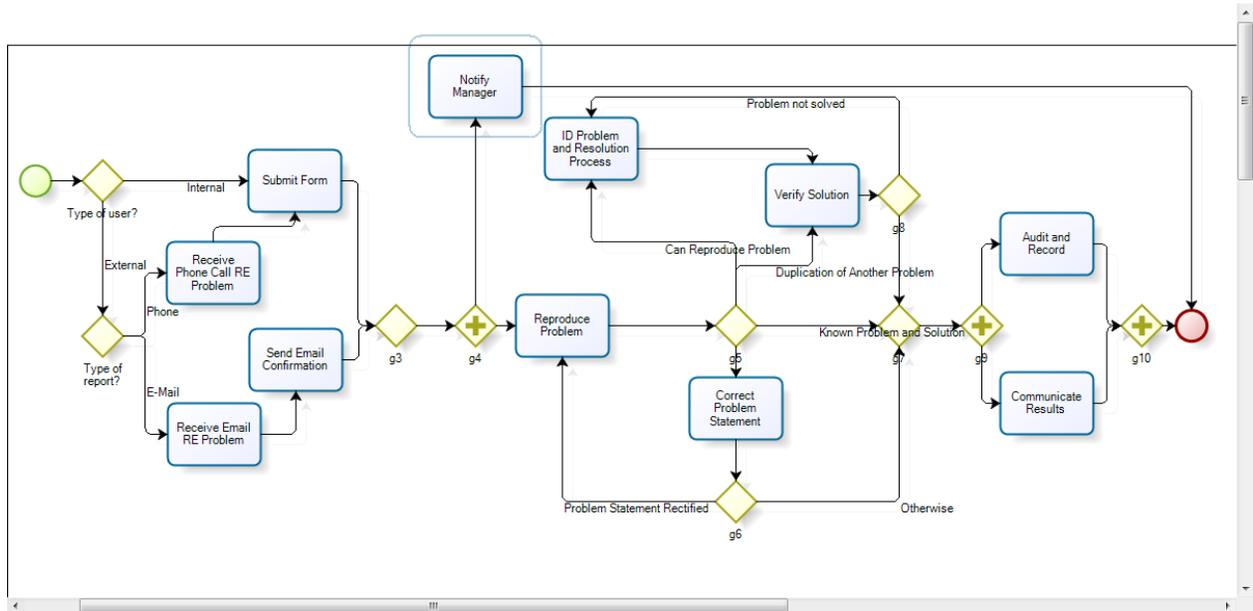


Figure 1. A BPMN process diagram for a process architect responsible for checking administrating low-level process details.

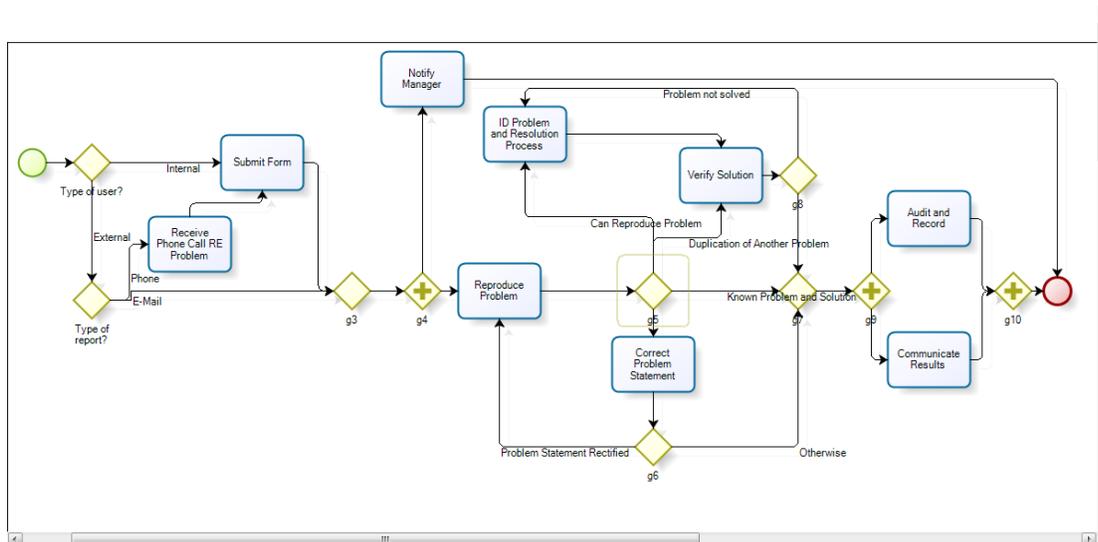


Figure 2. A BPMN process diagram for a process architect. In this diagram, “Receive Email RE Problem” and “Send Email Confirmation” tasks have been hidden to provide the process architect with a more abstract view.

The process view above is obtained by hiding two tasks and reorganizing the related links. To well-support this process view abstraction, block-oriented condensation and unrestricted condensation functions are implemented with the FlexView prototype. In addition, the process view abstraction is regulated with a series of structural consistency rules. A specific view definition language (VDL) is established to describe the view definition, and an XML-based language, process view definition language (PVDL), is defined to facilitate the process view transformation.

Process View Framework: FlexView

FlexView allows firms to define the visibility of their local processes and hide private information from partners. The framework has been implemented with FlexViewBPEL and FlexViewBPMN as proof-of-concepts.

The process model consists of aggregation and hiding operations, as well as a set of structural consistency rules. Aggregation operations allow a firm to provide a more abstract process view, whilst the hiding operations simply hide an activity or a set of activities in a process model.

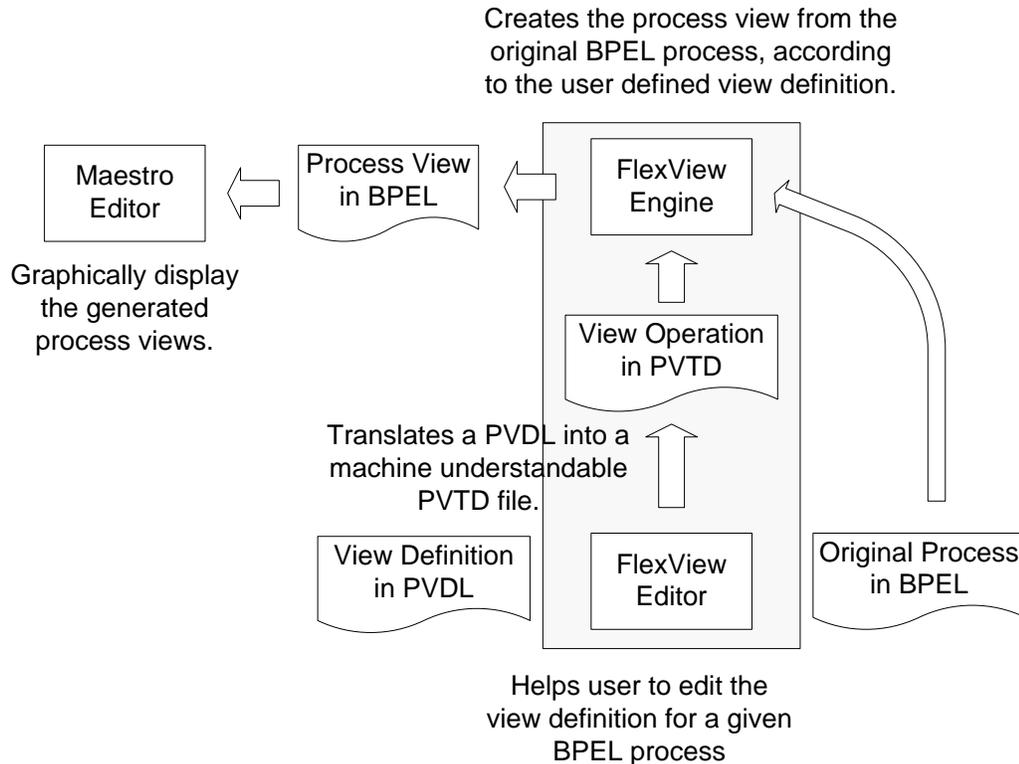


Figure 3. FlexView framework incorporated into WS-BPEL language. The diagram for BPMN is similar.

The above figure shows how process views are generated as an output of the system. Initially, the system loads the original process file. Next, users specify which elements in the process will be aggregated. Finally, the process view is then generated as an output of the system.

Future Plans

Overall, the joint efforts of SAP Research and Swinburne University are making collaborative BPM a whole lot more feasible. Researchers are currently working with the SAP NetWeaver BPM development organization - and hope that the technology will one day become part of an SAP solution.

Related Content

For more information please contact Marek Kowalkiewicz (marek.kowalkiewicz@sap.com).

In addition, visit these SDN documents and web pages.

[Slipstream – Live Dashboarding for Business Process Management](#)

[SAP BPM and Composition on SDN](#)

[ThingFinder + MS Outlook = happier enterprise information workers](#)

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