

Business Processes to Touch: Engaging Domain Experts in Process Modelling

Udo Kannengiesser¹ and Stefan Oppl²

¹Metasonic GmbH, Münchner Str. 29 – Hettenshausen, 85276 Pfaffenhofen, Germany
udo.kannengiesser@metasonic.de

²Johannes Kepler Universität Linz, Institut für Wirtschaftsinformatik –
Communications Engineering, Altenbergerstraße 69, 4040 Linz, Austria
stefan.oppl@jku.at

Abstract. This demo paper presents an interactive tabletop interface with tangible building blocks to engage business domain experts in process modelling. This interface, called Metasonic Touch, is a commercial product based on results of the European research project IANES (Interactive Acquisition, Negotiation and Enactment of Subject-Oriented Business Process Knowledge). BPM conference attendees will be able to use Metasonic Touch and experience the ease and playfulness with which it allows collaboratively modelling, understanding and discussing a process. The target audience includes BPM researchers and practitioners interested in agile and stakeholder-oriented approaches to process modelling.

Keywords. Subject-oriented business process modelling, knowledge elicitation, tabletop interfaces

1 Significance to the BPM Field

1.1 Innovations

Business process modelling is generally most effective when it can draw on the domain knowledge of those directly involved in the process. This can be achieved in various ways. Many BPM projects use process modelling experts that perform one-on-one interviews with the domain experts or facilitate a series of modelling sessions in which several domain experts come together to negotiate a common view of the global process model. In both cases, it is the process modelling experts who ultimately produce the model based on their interpretation of the domain experts' views. One disadvantage of this approach is that the modelling expert becomes a filter and bottleneck for the capture of process knowledge from the stakeholders.

The tool presented in this demo departs from this traditional way of process modelling. It aims to improve stakeholder involvement by lowering the barrier for domain experts without formal training in process modelling. It is based on a combination of two innovative approaches:

1. *Tangible tabletop interface*: Processes are modelled by arranging physical building blocks on a horizontal tabletop that are then recognised as modelling elements. Multiple stakeholders can concurrently add or remove building blocks or make other changes in the process model. Modelling processes in this way becomes a tangible and truly collaborative experience. A similar experience has been observed using the “tangible business process modelling” (TBPM) approach [1]. However, unlike the non-electronic method of TBPM, the tabletop interface allows the immediate creation of a computational process model. This is realised using visual recognition software integrated in the tabletop device. While this effect may also be achieved using gesture-based multi-touch devices [2], the use of physical building blocks is likely to enhance user experience and “grasp” of the process model.
2. *Subject-oriented BPM*: The S-BPM approach [3] is used as a modelling notation. It separates processes into multiple viewpoints, each of which describes the behaviour of a different process participant (or “subject”). A single overall process model emerges from the interconnection of the partial viewpoints by messages. This clear separation of concerns together with the very simple notation of S-BPM allows novice modellers to readily model their work procedures from their own, “subjective” perspective. They can usually do this after only a few minutes of training. In addition, the decentralised nature of S-BPM models helps coping with the space limitations of the tabletop, as the individual subjects can be modelled independently once all messages to be exchanged with other subjects are defined.

The tool is an outcome of the European research project IANES (Interactive Acquisition, Negotiation and Enactment of Subject-Oriented Business Process Knowledge). The tabletop modelling approach as well as first prototypes of the tool have been presented at various conferences [4, 5, 6, 7]. However, BPM 2015 is the first venue where a stable, commercial version of the tool will be demonstrated. Marketed as “Metasonic Touch”, it is now fully integrated in the product range of the BPM vendor Metasonic GmbH (www.metasonic.de/en).

1.2 Features

Overview. Metasonic Touch uses a standard 55-inch MultiTaction display (www.multitaction.com) that is horizontally embedded in an 820mm-high custom frame as shown in Fig. 1. It is equipped with mouse and keyboard, and can be used as a conventional computer. Additionally, the display can recognize human gestures and objects with visual markers. The objects used for Metasonic Touch are called “modelling bricks”.

The software of Metasonic Touch has an export/import interface with which process models can be exchanged with Metasonic’s design repository. This allows concurrent modelling of the same process with multiple, physically distributed front-ends including multiple tabletop devices. The process models can also be directly deployed on Metasonic’s runtime environment to allow their instant validation and execution.



Fig. 1. Overall view of Metasonic Touch

Modelling Bricks. Metasonic Touch uses six types of modelling bricks, including three bricks representing S-BPM process elements (see [3] for details), and three bricks representing tools for modelling, as shown in Table 1. Every brick has on its bottom side a unique visual marker that can be recognized by the cameras built in the display.

Table 1. The modelling bricks of Metasonic Touch

Process elements	Description	Tools	Description
	Function state: Performing an action		Scroll tool: To switch between different subjects (process actors)
	Send state: Sending a message		Selection tool: To select process elements in order to rename them
	Receive state: Receiving a message		Eraser: To delete process elements

Modelling Workspace. The modelling workspace is divided into different areas, shown in Fig. 2:

- Behaviour of the active subject (called “active employee” in Fig. 2): is the area in the centre of the workspace where the behaviour of a selected subject is modelled using the three process elements described in Table 1. Process elements can be named by editing the text entry field on the top of the workspace. Transitions between two process elements are created by briefly pushing the corresponding bricks together as shown in Fig. 3.
- Trays: are the areas on the left- and right-hand sides of the workspace that represent the other subjects participating in the process. Every tray contains the messages exchanged with the corresponding subject and that need to be integrated in the behaviour of the active subject.

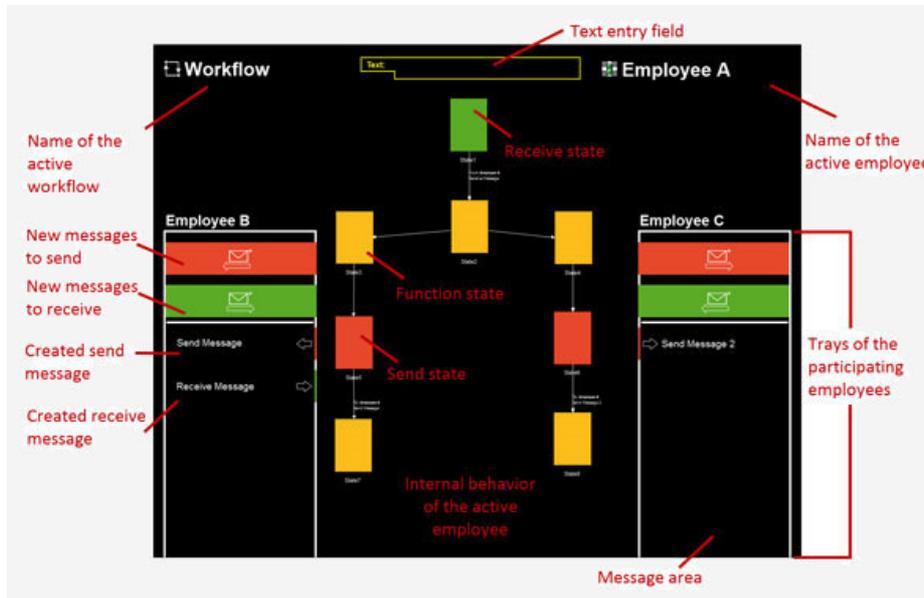


Fig. 2. The modelling workspace of Metasonic Touch



Fig. 3. Creating a transition between two states (modelling steps shown from left to right, red arrows indicate direction of movement of red brick)

1.3 Customer Experiences

Metasonic Touch has been perceived as very useful for performing and learning about process modelling, as shown by customers' statements. Christoph Stummer, consultant and process expert at Detecon International GmbH, states that "Metasonic Touch is well suited for getting everyone involved in a business process to understand the S-BPM method. It is an ideal means for getting people's attention and making process actors assume the role of the subjects in the process. The tangible modelling bricks

on the table make it easy to grasp the approach. They allow users to playfully experience this new, first-person perspective on process modelling.” Lothar Hübner, director of company organization at Fiducia IT AG, believes that “Metasonic Touch lowers the barrier for staff from the business departments to define their requirements. The very simple notation with only five symbols is very well complemented by Metasonic Touch towards gamification, additionally increasing acceptance of this approach.”

2 Maturity and Future Work

From its beginnings as a research prototype, Metasonic Touch has matured into a stable product that is fully integrated in the Metasonic Suite. It has been sold to around 30 customers to date. There is a wealth of information about Metasonic Touch available on the Metasonic website:

General information: <https://www.metasonic.de/en/touch>

Video: <https://www.metasonic.de/en/video/metasonic-touch>

Fact sheet:

https://www.metasonic.de/files/documents/1414421124/FS_10_2014_Metasonic-Touch_EN.pdf

Metasonic Touch is also used as an evaluation platform in further research, examining methodological approaches for collaborative business process elicitation from and by non-expert modellers. Initial results have been published in [6] and [8].

Acknowledgments. The research leading to these results has received funding from the European Commission within the Marie Curie Industry and Academia Partnerships & Pathways (IAPP) programme under grant agreement n° 286083 (IANES).

3 References

1. Grosskopf A., Edelman J. and Weske M. (2010) Tangible business process modeling – methodology and experiment design, BPM 2009 Workshops, Springer, Berlin, pp. 489-500.
2. Kolb J., Rudner B. and Reichert M. (2013) Gesture-based process modeling using multi-touch devices, International Journal of Information System Modeling and Design, 4(4), pp. 48-69.
3. Fleischmann A., Schmidt W., Stary C., Obermeier S. and Börger E. (2012) Subject-Oriented Business Process Management, Springer, Berlin.
4. Oppl S. (2011) Subject-oriented elicitation of distributed business-process knowledge, S-BPM ONE 2011, Springer, Berlin, pp. 16-33.
5. Wachholder D. and Oppl S. (2012) Stakeholder-driven collaborative modeling of subject-oriented business processes, S-BPM ONE 2012, Springer, Berlin, pp. 145-162.
6. Oppl S. (2013) Towards role-distributed collaborative business process elicitation, Workshop on Models and their Role in Collaboration, CEUR WS 1037, pp. 33-40.
7. Oppl S. and Rothschild T. (2014) Separation of concerns in model elicitation – role-based actor-driven business process modelling, S-BPM ONE 2014, Springer, Berlin, pp. 3-20.
8. Oppl S. and Stary C. (2014) Facilitating shared understanding of work situations using a tangible tabletop interface, Behaviour & Information Technology, 33(6), pp. 619-635.