

New common software FOR SEAMLESS COMMERCE

STORY BY David Adams

WHEN JULIE, who runs an inner-city homewares store, electronically places an order for the latest model coffee machine, what may seem a simple transaction is actually part of a complex network of interactions between several businesses, including the manufacturer, parts suppliers and shipping companies.

This growing 'connectedness' between businesses has led to a rising demand for new software systems that enable better integration of routine processes, such as inventory checks, orders and sales, between businesses without the need to operate different and unconnected computer programs.

Yet, to date, these systems have been limited in the way they share data between businesses, with systems either allowing each company full access to the other's systems or placing such tight restrictions upon access that cooperation is unduly hampered.

Now, a research collaboration between Swinburne University of Technology and global business software company SAP is close to developing a software platform that overcomes this, providing businesses with a customisable interface where they can determine the level of access given to another company.

Dr Marek Kowalkiewicz, a Brisbane-based senior researcher at SAP, says that currently an organisation either exposes its full processes to each company involved in a collaboration (for instance, suppliers exposing their processes to their customer) or it only exposes 'communication points' – links where messages are exchanged.

"We wanted to investigate all states in between, giving full flexibility to organisations that want to share their processes with others and that want to differentiate the level of detail shared," he says.

Professor Chengfei Liu, a program leader in the Web and Data Technology Research Program at Swinburne's Centre for Complex Software Systems and Services, says it is important that any solution that facilitates business process management (BPM) across more than one organisation must also be flexible enough to allow organisations to move in and out of the collaborative process

without the need for a major system restructure. It also needs to address data privacy and security concerns.

"Those kinds of issues are serious and haven't been addressed by previous BPM systems," Professor Liu says. "So, in our work we have proposed a workflow model (BPM system) that gives the organisation a view of the whole collaborative business process, but also allows each organisation to see the collaborative business process from a different view."

The researchers – who also include Dr Xiaohui Zhao, a postdoctoral fellow at Swinburne, Professor Yun Yang and PhD students Sira Yongchareon and Shangfeng Hu – have dubbed the project 'Kaleidoscope' because, like the tube of mirrors which creates different views as it is turned, the system will give a different view of a business process depending on who is accessing it.

As a simple example, Company A supplies parts to Company B. Both want access to supply chain information but, understandably, want to keep other company information private, so open access is not an option. What the researchers are hoping to do is enable each company to have the access needed to fulfil their role while, at the same time, ensuring other data is kept secure and private.

The project has already led to the creation of two prototype software solutions, known as FlexView4BPEL and FlexView4BPMN, which Professor Liu says should be suitable for use within large-scale enterprises as well

as small and medium-sized businesses.

While the three-year project was officially launched in April 2007, work had already started following discussions between Professor Liu and SAP vice-president Dr Karsten Schultz, who has completed a PhD on the subject. The idea for the project also received support from SAP Research Centre director Dr Wasim Sadiq and Dr Marek Kowalkiewicz, a senior researcher at SAP.

SAP released its first BPM solution a few years ago. It now has a strong research presence and actively participates in efforts to ensure standardisation, so that any software created can 'plug in' to other existing systems.

Dr Kowalkiewicz says SAP aims to be a leading vendor in the BPM field and opted to work with Swinburne because of its past experiences with the university and the university's expertise in the area. "The Swinburne researchers involved in the project are among the top researchers in that area in the world."

SAP is already looking at incorporating new features into its solutions based on the work done so far. "However it will still take some time and the cooperation of our Swinburne colleagues will be crucial," Dr Kowalkiewicz says. ■



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