Pervasive collaboration for modern business

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(PhysOrg.com) -- Highly dispersed and mobile teams are the definition of modern business, but organising them is a hard problem. Now European researchers have developed a service bundle that could make virtual team organisation a snap.

Virtual, nomadic and ad-hoc teams are the foundries of modern business, an essential infrastructure that gets the real work done. These teams are highly dispersed, dynamic and adaptive, but organising them is a hard problem.

Your closest teammate could be ten time zones away and the team leader constantly on the road and out of reach. Some of the team are on siesta, others should be sleeping, while the head office is just waking up.

Organising even the simple processes of modern business - say a face-to-face meeting - becomes a huge problem in this scenario.

Team members also use a vast range of devices, so getting them quickly and efficiently is not as easy as it should be. Meeting organisers still have to go through several rounds of invitations until they find a date that works for the largest number of teammates.

But iterative processes like this are one thing that computers do very well. There is just one problem; up to now, they have had no understanding of context. Where people are, what they are doing, how they can be reached.

That may soon be a thing of the past, thanks to the work of the EU-funded inContext project.

"We are a research project, so we were not trying to make a context-aware application; rather we set out to develop the mechanisms and algorithms so that other people could make their applications context aware," explains Schahram Dustdar, coordinator of the inContext project.

Vast services, and unique

"We developed a service-oriented architecture, called 'pervasive collaboration service architecture' (PCSA), that can be plugged into other scenarios and applications," says Dustdar.

Others have developed context-aware applications in the past, but inContext has pushed the boat out in many ways.

Firstly, it is designed as a service, so it will be there for anybody to use. Secondly, it will be integrated into the projects of partners like Microsoft and Hewlett-Packard. Thirdly, it is inspired by autonomic computing.

This last feature is important, because it means that the PCSA can learn to identify specific types of emerging team interaction, based on a deep analysis of previous interactions, so it can set up the most efficient system for managing the team as it develops.

"What is particularly unique about this project is that it focuses on the work of the team as a whole, and manages collaboration from that perspective; whereas efforts in the past have focused on the individual," suggests Dustdar.

Nomadic, virtual, nimble

The project has developed a vast number of services dealing with SMS, email, calendar, instant messaging, documents, scheduling, presence, location, context (what people are doing) and many, many others. Even better, new elements can be added to this bundle of services as needs emerge, so the system can adapt over time.

This bundle aims to support three types of team: nomadic, virtual and nimble.

Nimble teams form ad-hoc around a specific problem. "Imagine with a tsunami, for example, you would have the Red Cross, logistics and other experts who come together to solve a specific, emerging problem," notes Dustdar.

Nomadic teams are typically salesforces, while virtual teams are long-term, dispersed teams organised around a specific goal. "A research project is a good example of this," Dustdar explains.

The work is now done, and in small-scale user scenario tests among inContext's industrial partners, the system has performed well. It has also been well received by the scientific community and generated over 50 high-quality science publications and formed the subject matter for many workshops.

The team was also active in standards efforts at the W3C and other bodies, and now the results will be incorporated into the products of the project's industrial partners.

"But I think it has the potential for wider commercial application, and I hope it will achieve its potential," concludes Dustdar.

The inContext project received funding from the ICT strand of the Sixth Framework Programme for research.

InContext project: www.in-context.eu/

Provided by ICT Results