Small companies add value by sharing commercial information

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(PhysOrg.com) -- Small companies prepared to share commercially sensitive information can add value and develop new services for their customers, using a distributed track-and-trace software solution.

Small companies will be able to track-and-trace the movement of their materials and products from their suppliers through to their final customers, using a new open source and free solution.

One of the characteristics that makes the TraSer track-and-trace solution different is that the product location information is not owned or controlled by a central authority. Instead, the companies along the supply chain share their data in the interests of all.

TraSer will adapt easily to larger customers' supply chain management or enterprise planning systems. And it enables companies to make rapid changes to their supply networks while maintaining high security levels.

Most supply network systems designed to track products - such as the EPCGlobal ONS/EPCIS system being championed by major retailers and product manufacturers around the world - are centralised to some degree. ONS/EPCIS has a central lookup service that must be contacted by someone looking for information on a product with a unique identifier. The lookup service returns a service address for the unique identifier where further information on the product can be found.

There are advantages to the ONS/EPCIS approach. If the product

changes ownership the details at the central lookup service can be changed to direct enquirers to the address of the new owner's services for that product. But there are also major disadvantages. If the central lookup service can't be accessed for whatever reason, services relating to the product can't be accessed.

End of the line for central lookup services?

By combining a product ID with a company web address, TraSer creates a unique product identifier that does not depend on registration at a centralised supervisory authority. Each company remains responsible for the maintenance of their own product data and any links to product-related services. By dispensing with the need for a central lookup service, the network is less vulnerable to malfunction or abuse.

Services for any item must remain accessible at the same address for the entire life span of the identifier. Where there is a change of ownership, the new owner would usually issue a new identifier.

"TraSer is designed as an entry-level solution platform," says Dr Elisabeth Ilie-Zudor, coordinator of the TraSer project, and a researcher at the Computer and Automation Research Institute of the Hungarian Academy of Sciences. TraSer involved researchers in Hungary, Romania, the Netherlands and Finland from both academia and business.

"We strove to keep it as simple as possible in operation. Still, it remains vital to understand what is actually done in a track-and-trace network to make it work."

The owner of any TraSer server can set access rights to data on an item-by-item, partner-by-partner basis. The TraSer platform uses web services for server-to-server and client-to-server communication. A WS-Security standard communication channel is used to sign and encrypt the contents

of the messages, using a public-key communication approach.

A TraSer network has a core of interconnected company servers, surrounded by an 'envelope' of clients. Those clients may gather information from bar codes, RFID tags or other carriers of a product's unique identifier. Whatever client is used, the interface between client and server is uniform. Therefore, TraSer can adapt to a wide range of input types.

In the same way, TraSer can adapt to other IT components such as customers' enterprise resource planning (ERP) or supply chain management systems. In TraSer pilots, client-adaptors were developed for some of the existing ERP and peripheral middleware systems.

"Developing adapters for all major ERP examples was not within the scope of the project," according to Ilie-Zudor. "However, we have closely examined all issues of adapter design and implementation that may surface in a business application and we have provided guidelines that users can rely on for a systematic adaptation approach."

"Once users attain an adequate 'picture of the world' and become able to relate their own business scenarios with the possibilities and principles of TraSer, implementing an initial solution is fairly easy," says Ilie-Zudor.

Commercialisation potential

During the TraSer project, the consortium members led a number of pilots - ranging from a closed-circuit asset-tracking system to the flow of materials along a supply chain. They also ran a special pilot tracking the distribution of electronic documents for a collaborative design project.

"The TraSer platform remains in use at some of the piloting companies," adds Ilie-Zudor. "One of the consortium members also offers TraSer as a

tracking component in its enterprise IT solution.

“And one IT company outside the consortium has examined and tested the TraSer platform and explored how it can be coupled with its own tracking network solution.”

Few small companies have track-and-trace capabilities at the moment. There is growing pressure for transparency along supply chains because of the greater certainty that gives customers. However, widespread use of systems like TraSer will require a change in mindset among SMEs, according to Ilie-Zudor.

“There is a general wariness about sharing information related to production and delivery. But companies need to view shared data as an investment where the creation of a better picture for everyone leads to a payback in cost reductions, better working methods and greater coordination.”

More information: TraSer project
Video: vimeo.com/7326102

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