Old supply chains are being transformed into faster and more reliable modern supply chains thanks to investment in information technologies. The EU, for its part, has earmarked almost EUR 2 million from the EU's Seventh Framework Programme (FP7) to foster this change. The scale of consumer demand - and the need for accurate forecasting and fast response to demand - was the starting point of the ADVANCE ('Advanced predictive-analysis-based decision-support engine for logistics') project which is designing a software program specifically to fulfil these needs.

The technologies available through the Internet, combined with continued advances in logistics software development, have given supply chain management an enormous boost - far greater than those who first promulgated the supply chain could have anticipated. The scale of solutions has increased while the volume of transactions has grown at a staggering rate.

Still, logistics managers have long been after a technology solution that would offer a secure system for scheduling and planning, one that would provide maximum benefit to multi-carrier, multi-mode, and multi-leg shipments within an overriding business process system.

This system would necessarily handle domestic and international transactions within a logistic trading community. The Internet could act as the means of communication between traders and customers. Logistic managers have wanted such a system to deliver both historical and real-time information in a cost-effective manner, to as far a geographic range as possible. Enter the ADVANCE project that will offer such a software-enabled solution. The project kicked off in September of this year.

The ADVANCE system will move users away from arduous rule-of-thumb solutions towards an integrated solution than can span Europe in terms of access and support. Decision support will be based on historical and real-time information, use of connectivity tools, and data that has a company's own criteria built in as a critical advantage.

'This system will create a decision-support engine capable of analysing a massive volume of data for companies who can typically accumulate over 1 billion new items of data each year,' says Dr Christopher Buckingham of Aston University in the UK, an ADVANCE partner. 'This data is generated every minute of every day by thousands of pallets travelling on hundreds of trailers for more than 1 million customers scattered across hundreds of thousands of postcodes'.

Dr Aniko Ekart, also from Aston University, says: 'The patterns and dependencies that exist in the data can only be meaningfully processed by intelligent data mining approaches. [The ADVANCE] system will provide a dual perspective on transport requirements combining instant analysis to guide short-term decisions about lorry deployment as well as longer-term plans for managing the network behaviour as a whole'.

Pan-European e-Logistics coming of age

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Drs Buckingham and Ekart are working on this project with a team of engineers from the Computer and Automation Research Institute of the Hungarian Academy of Sciences (Hungary), which is the ADVANCE project coordinator, and the University of Groningen (Netherlands).

The proof of the pudding is in the eating and the ADVANCE partners plan to test the emerging system on the distribution network of leading European logistics companies Palletways (UK) and Technology Transfer Systems (Italy). The intention is to show how theories and tools developed during the project can make the transport system more efficient for logistics companies and at the same time reduce their carbon footprint.

**Countries**

Hungary, Italy, Netherlands

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