

INTHES - EDI Integration in the Health Sector

INTHES is an intersectoral project, funded within the framework of the TEDIS (Trade Electronic Data Interchange Systems) program of the Commission of the European Communities. With the INTHES project, the consortium will demonstrate how EDI facilitates innovative organisational strategies for the distribution and procurement logistics of diagnostics products and what the benefits and consequences of these strategies are.

Quite a number of EDI applications within the area of the distribution of pharmaceuticals exist already, the distribution of reagents for diagnostics (e.g. for

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haematological analysis), however, require a different approach: reagents for which there are no third-party substitutes have a limited shelf life and there are only a few production sites throughout Europe. The customers, namely hospitals and laboratories, rely on continuous delivery on demand. While outsourcing of logistics is an initial step to improve Europe-wide delivery of small quantities within 24 hours and to lower the logistics costs at the same time, a very close communication link is required between the three parties - supplier - logistics company - customer - in order to gain the requisite lead time to initialise the distribution (and production) processes.

Part 1: Design and Implementation of Pilot Project

The goal of INTHES is to develop a (prototypical) solution for the procurement/distribution cycle for reagents based on the redesign of existing inter-organisational processes and by using standardised components, such as EAN 128 for product identification and UN/EDIFACT messages. Many EDI projects have focused on the technical implementation, INTHES, however, intends to pursue a business-driven approach and to identify the business and communication needs of the players, before a pilot is set up.

1. Participatory Requirements Analysis: While a number of projects are focused on the procurement of pharmaceuticals, INTHES looks into extending and applying these results to the area of reagents. Instead of just implementing an EDI link between the participants, a thorough analysis of the distribution and replenishment cycle - including internal processes - has been conducted in order to identify the specific requirements of the message exchange and to enable the participants to better integrate the results of the message exchange into their internal operations, such as inventory control. Based on a solution that is meant to be 'best business practice', steps will be under-

taken to evaluate and further disseminate the findings with other leading industry players. The rationale of this procedure is to start with an organisational analysis in order to identify areas for improvement *before* setting up EDI links. By this means EDI is becoming part of a combined organisational and technical innovation. The potential improvements through EDI are leveraged. This procedure reflects the rising awareness of close links between business process or network redesign and the implementation of EDI as well as the strong embeddedness of EDI in interorganisational arrangements (so-called pragmatics).

2. Distribution Scenarios: While the proposed actions will contribute to a significant simplification of the existing organisational routines, more profound changes in the distribution structure may be necessary to improve the inter-organisational coordination even further and to reduce redundancies in the process. The interests of the participants are, for instance:

- consolidated shipments for the hospitals and laboratories,
- reduced logistics costs for the supplier and the consignee by increasing the scale of the shipments.

Currently, different scenarios are under evaluation that show how these improvements can be achieved and what level of cooperation is mandatory in order to achieve these goals. The following examples show different (and to some degree complementary) options for co-operation:

1. Horizontal partnerships among diagnostics companies in the areas of EDI or barcoding standardisation. The rationale behind this partnership is to develop solutions for electronic linkages between the suppliers and the hospitals that have the potential to become industry-wide solutions.

2. Vertical (outsourcing) partnerships between a diagnostics company and logistics service provider, e.g. in the areas of warehousing and distribution. The rationale for logistics outsourcing from the suppliers point of view is to improve the efficiency of logistics which is regarded as a non-core business function.

3. Horizontal partnership among customers (hospitals/laboratories) in order to improve the bargaining power in relation to the suppliers (procurement alliance) and/or to improve the scale and efficiency of logistical operations.

Part 2: Social and Economic Impact

The TEDIS program has put some emphasis on the scrutiny of the social and economic impact of EDI. In terms of prospective research, some impacts of the pilot system can be anticipated and discussed with the players. Insights gained from previous TEDIS research into the social and economic impacts of EDI in the areas of industrial organisation, competitive behaviour and dissemination will be used to evaluate the changes taking place within parties of the health-service sector. Particular attention will therefore be paid to the following issues:

1. The interests and strategic stakes of the participants

The interests of the different players as well as potential areas of conflict will be examined. The goal is to raise the awareness of conflicting interests and explore if and how they could be balanced.

2. EDI as enabling technology for emerging inter-organisational concepts

The potential of EDI as an enabling technology for inter-organisational concepts, in particular, outsourcing of logistics and distribution and replenishment concepts will be studied in order to raise the awareness among the participants of the organisational potential of EDI. This will include how the quality requirements within the distribution chain can be met and even improved.

3. Impact on the industry: co-operation and competition

The above-mentioned inter-organisational concepts (2) reflect new forms of inter-organisational division of functions and labour. An assessment will be made as to whether the organisational design will improve and/or require closer co-operation among the participants. While, in some applications, EDI tends to contribute to the development of open-markets, in others, existing supplier-buyer relationships will be fostered or new forms of cooperation will emerge. The program will examine how EDI has contributed to industrial restructuring and, in particular, changing levels of competition. While the suppliers of products and services are engaging in closer co-operative relationships with their customers along the supply chain, they will compete on the level of quality and systems solutions instead of competing in terms of every single contract. ■