

All copyrights of this article are held by the author/s

To cite this publication

we suggest to use the APA (American Psychological Association) standard:

[Author's Last Name, Initials, (year), Title of work. Retrieved month, day, year, from source.]

You downloaded this document for free
from the



The NetAcademy is an internet research platform organizing the accumulation, dissemination and review of scientific research and publications world wide.

For any use of this document which is not strictly private, scholarly work, please contact the NetAcademy editors respectively the MCM institute at the below address.

The NetAcademy ®
www.netacademy.org
NA.editors@netacademy.org

The NetAcademy project has been developed at the
Institute for Media and Communications Management MCM
University of St. Gallen
Blumenbergplatz 9
CH-9000 St. Gallen, Switzerland
www.mcm.unisg.ch

Computer Integrated Logistics

in: Electronic Trader, Nr, 3, June 1993

Beat F. Schmid

Logistics is one of the central topics for companies in the 90's. This applies especially to external logistics on procurement and sales markets. In view of the ever more exacting requirements in respect of the availability of products and the high capital costs of logistic infrastructures, more and more companies are relying on outside service providers for part or even their complete external logistics. Increased shipping frequencies, a rising number of specialised service providers as well as the need for up to date status information have led to a considerable growth in the interchange of communications between shippers, shipping agents and carriers. To an increasing extent, banks and insurance companies are being brought into this information cycle.

Problem

The trends referred to call for efficient integrated information and communication systems in the shipment and payment chain. In this connection, substantial investments are today being made in systems of electronic data interchange (EDI) in the shipping industry and banking business. Current solutions are, however, frequently limited to a part or section of the shipping and/or payment chain and, moreover, are too much aligned to existing organisational procedures. The growing need for a pervasive integrated data interchange between all companies and authorities concerned and the demand for new, more flexible forms is met by these solutions only to a limited extent.

Proposal for solution

In order to cope with this complex task, a universal, globally available service is required which covers all relevant areas of the external goods, information and financial logistics. The functionality of this service for the computer-integrated logistics (CIL) can best be illustrated by an analogy with the telephone service. In much the same manner in which two subscribers can communicate on the telephone without having to bother about the details of bringing about the connection and voice transmission, the CIL service will permit information to be exchanged regarding the goods to be shipped and the counter-current flow of payments. Consignors and consignees will thus be in a position to buy an integral logistic service as and when required which covers all necessary shipping, storage, payment, insurance and customs clearance, operations without their having to bother about the hows of providing the service. The core of the CIL service is an "information object" which, logically accompanying the goods, contains all necessary information and can be called and modelled by the service providers concerned in each specific case.

Analogy with CIM

The integration of the service providers in the external logistics is taking place on similar lines as the developments in the field of CIM some 10-15 years ago. Then the information systems of the departments involved in the production of a given product (design, production planning, production, etc) were integrated in a database. A comparable development will take place in the field of logistics within the next few years and form the basis of the realisation of the CIL service.

CIM has materially changed production processes and resulted in time and cost savings for the companies using it. From this angle, logistics are still in their infancy. Considering the fact

that the costs of logistics in companies roughly equal the costs of production, CIL is expected to offer substantial rationalisation and cost saving potentials.

It is intended to draw up the specifications of CIL service which will establish:

- the requirements of users in respect of its functionality as well as
- basic patterns of the architecture to realise the service on a logic level

The architecture will have to be designed in a manner to allow for existing or planned systems. The specifications to be prepared will form the basis of a possible realisation of the CIL service by VANs service providers. In parallel with the preparation of the specifications, the partner companies will be offered assistance in the planning of their own activities in those fields.

The development of the X.400 service in telecommunications provides an example which illustrated the general approach. In this case, too, the basic functionalities and architecture principles were established first and, subsequently, suitable protocols were drawn up and studies undertaken of the physical aspects of its realisation.

Procedure

In achieving the objectives and milestones to be distinguished. To start with, it is necessary within the framework of a state-of-the-art analysis to ascertain, document and evaluate with a view to future requirements present forms of EDI uses in external logistics.

In parallel, a reference model has to be conceived and evolved of the structural and operational organisation. A functional approach, emphasising business functions and abstracting from established patterns of who traditionally provides the service, will ensure the required degree of flexibility.

The reference model and the results of the state-of-the-art analysis will provide the basis for the preparation of the specifications of the CIL service. These will describe the necessary functionality as well as the architectural principles to be applied on a logic level. Proceeding on this basis, it will be possible to evaluate suitable information and communication system architectures to translate the CIL service into practice.

Participation of business partners

The research projects undertaken by CCEM are carried out in the close co-operation with specialists of the partner companies participating, leading companies in Switzerland and Germany sponsor work of CCEM and, thanks to their practical engagement, ensure the practical applicability of the results of the research work. Partner companies benefit in many ways from their co-operations with CCEM, Important useful effects include, for instance, decision support in the case of upcoming new ventures and investments in external logistics, training effects for directly involved members of the companies as well as the possibility of an exchange of ideas detached from day-to-day business. The collaboration with potential operators of the CIL service permits participation in the proposed pilot project and thereby access to valuable know-how and competitive advantages.