

The Organization Gap

The Telecommunications Research Group is an interdisciplinary team located at the University of Bremen. In this team, researchers educated in computer science, business administration, sociology, and law are cooperating on a wide range of topics. One main topic is the technology assessment of telecommunication networks, especially ISDN, with a special emphasis on social effects, in particular, data and consumer protection, technological options and social regulation. The second, more recent main area concerns citizen or community information systems including the evolutionary development of such a system in the city of Bremen. The third area is EDI which will be presented here.

While the importance of telecommunication networks and of technical standards for EDI is stressed very often, the relevance of data keys still does not get

** by Prof. Dr. Herbert Kubicek
University of Bremen*

the recognition it deserves: As a multilateral computer-to-computer exchange of data, EDI needs agreements on the meaning of every single data in any data field of a data exchange format. Technical standards usually do not cover this semantic level of data keys, but they play a key role in the development process.

The Development of Data Keys and Exchange Formats

This is demonstrated by a case study within a research project funded by the Federal Ministry for Research and Technology dealing with the development of the European Article Number (EAN) which today is a key element in the exchange of electronic orders and invoices between retailers and manufacturers of consumer goods. In Germany it took only two years for retailers and manufacturers to reach agreement about the barcode as the physical representation, but it took more than twelve years to agree on the content and structure of the numbering system. Because the department stores were afraid of a new bureaucracy coming up for the distribution of numbers, they succeeded in creating a system without any classification of goods, but with only identifying numbers chosen by the manufacturer. Case studies in supermarket chains showed that there is no satisfactory data management, but each retailer has to take care of up-dating individually. However, compared to other cases, the EAN-case was quite successful. One main reason is the strategy of coorganization between institutions of the retailing business and the manufacturers, in particular, the food industry. Their associations jointly founded the Centrale für Coorganisation in Cologne which administers the EAN, and also develops EDI services based on the EAN, in particular, the SEDAS-Data-Service for the exchange of orders and invoices. It was the assumption of the main actors in both industries

that EDI is only of advantage if it is used by as many firms as possible on both sides and that this can only be achieved, if none of the different types of business gets the advantage over the others. Such a philosophy is still not common. In a second case study dealing with the development of the German EFTPOS-system Electronic Cash, we found that the different institutions of the banking business wanted different kinds of EFTPOS-systems in order to gain competitive advantages, and that over all these conflicts they did not negotiate with the retailing business, although the terminals have to be placed there. So finally the banking sector agreed on a uniform system which is not accepted by the retail trade [1].

The Role of Intermediary Organizations in the Development of EDI

These two case studies led to the recognition of what we have called an organization gap in the development of large-scale EDI-systems [2,3]. In our first generalization we found that industry associations might be of particular importance. However, other case studies and discussions with researchers from other countries now lead us to speak of intermediaries which might be branch associations, regional bodies, but also service providers or consultancy agencies. This issue is at present taken up in cooperation with the Institute for Economics and Technology at the University of Wuppertal and within the framework of an international TEDIS-project. We think that there is not a single best solution. Rather the different stages of the development process on the one hand and the phase of running a system and promoting its diffusion on the other pose different requirements which the different kinds of intermediaries meet differently.

Options for Prepaid Cards

An ongoing research project, funded by the Volkswagen Foundation, investigates the options for anonymous prepaid cards as a means for payment besides or instead of credit and debit cards. In particular for the payment of small amounts, especially with coins, credit and debit cards involve a big administrative over-

head and raise a lot of privacy issues. Therefore, prepaid cards might be an alternative. One of the areas where the different types of cards are in competition is public transport [4]. Technical standardization of a multisector prepaid purse is almost completed. So far, research results again show an organization gap. Banks, especially commercial banks, have only little interest in open prepaid cards. And the transport organizations have no joint body to develop a common system of their own. Although everybody speaks of networks, it is still not recognized that building EDI-networks requires organizational networks. Their development is a complicated process of cooperation for process innovations between organizations which at the same time are in competition on product markets. To explore this issue of coorganization further is not only of theoretical importance, but also crucial for the political promotion of EDI [5]. ■

References

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- [5] This will be shown in a summarizing book, which is almost finished and will be published by the end of this year or the beginning of 1994: Kubicek, H., Seeger, P.: Koorganisation.

** Dr. Herbert Kubicek is a professor for*

computer science at the Department of Mathematics and Computer Science at the University of Bremen, Germany.