EM

Dear Readers,

Many of our discussions with practitioners and theorists brought out the problem of lagging diffusion of Interorganisational Systems (IOS). In spite of the Internet revolution and growing numbers of EDI users, acceptance of IOS has been rather slow, measured by the technology's potentials. Where IOS systems have been implemented, they often have to struggle against the handicap of underutilization - lacking profits, in other words.

Technology itself obviously does not appear to be a limiting factor, although there still exist vast potentials of further development. However, many causes of the diffusion problem are suspected to reside in the complex network of economic, legal, and social constraints. While the legal side was addressed in our last issue, the present issue is dedicated to the socio-economic aspects. Our first author emphasizes the relationship between adopters and sponsors of such systems. The second contribution deals with diffusion theory. The power of large enterprises to drive EDI is shown in a comparative study conducted in the European automotive industry.

Adequate public research programmes are likely to be another important promotor of EDI. We are introducing two new EDI research projects which are part of the European Commission's Trade Electronic Data Interchange Systems Programme (TEDIS).

We hope the present number of EM-Electronic Markets will make interesting reading for you.

Sincerely,

Rainer Alt   Stefan Zbornik

Editors

Electronic Linking of Organisations and the Sponsor-Adopter Gap

Electronic linking of organisations is not always easily achieved. Implementation of inter-organisational systems is inhibited by differences between sponsors and adopters of such systems. Once organisations are aware of and understand these differences, they can work towards overcoming barriers to implementation.

Electronic linking of organisations through inter-organisational systems (IOS) is instinctively attractive. Strategically it is often desirable to create closer

* by Prof. Dr. Angèle L. M. Cavaye
Delft University of Technology

links between value chains of organisations. Potential benefits to participants include lower transaction costs and faster delivery of goods and services. More important perhaps are the intangible benefits in terms of improved service and closer partnerships. In practice, implementation of IOS and the reaping of associated benefits are not easily achieved. Organisations that develop IOS are often surprised that their business partners do not embrace the system immediately and enthusiastically. Systems are not necessarily adopted quickly by intended users and are not always integrated well into user organisations. The corollary of this is that the potential benefits of IOS are not easily or quickly achieved. I suggest that one reason for difficult or slow implementation of IOS by business partners relates to the existence of a sponsor-adopter gap.

Sponsors are those who develop and implement IOS. Sponsors can be firms wanting to link electronically with customers, suppliers or distributors; sponsors can be government organisations aiming to formalise interaction with other organisations; sponsors can also be vendors or network providers creating business out of developing and managing electronic links for others. *Adopters* are the firms and organisations that are the intended users of IOS. At the time when the sponsor introduces the IOS into the market, there are differences between sponsors and potential adopters which inhibit smooth uptake of the IOS by business

partners. These differences relate to sponsor and adopter understanding in terms of use and potential value of the IOS. I refer to these differences as 'the sponsor-adopter gap'. In the following sections I will discuss the sponsor-adopter gap in some detail. Firstly, I will describe what it is, then explain why it is there and lastly suggest what can be done about it.

What is the Sponsor-Adopter Gap?

The concept of a sponsor-adopter gap is based on empirical evidence. In describing the gap I draw on my own research (mostly carried out in New Zealand) and also on research findings from colleagues in USA, Canada, UK and Denmark. The sponsor-adopter gap is summarised and graphically presented in Figure 1 and is described in more detail below. In terms of knowledge about technology, sponsors tend to be ahead of potential adopters. Sponsors tend to be generally aware of technological advance: they scan the environment, keep informed and look for opportunities that could enhance their businesses. Sponsors are familiar with the IOS application in particular, because they have been involved in the development of the system. In contrast, typical adopters are busy running their business and are not always well-informed about all that happens beyond their immediate environment.

A second difference between sponsors and adopters concerns attitude towards the IOS. Sponsors tend to be enthusiastic about the system to such an extent that they expect everyone else to share this enthusiasm. Potential users are comfortable with the status quo and do not particularly wish to change their way of operating. Thirdly, sponsors recognise and understand the potential of the IOS while adopters do not see clearly how the IOS can be of benefit to them.

Sponsors understand that the IOS can enhance their business by improving or changing existing processes and by providing opportunities for new services. Adopters see no real need for change and often can not envisage a different way of running their business.

Also, sponsors and adopters differ in their attitude towards the financial investment required to implement the IOS. Sponsors typically do not engage in any detailed financial justification before developing the IOS. Sponsors go ahead because 'it seems a good idea', because they want to be seen to be innovative in their industry or because they feel obliged to offer a system (for instance, in order to copy competitors). Adopters, on the other hand, weigh up the pros and cons of adopting the system and often use cost benefit analysis to see if investment in the system is justified.

Another factor distinguishing sponsors from adopters concerns their time horizon. Sponsors are aware of potential benefits of their IOS, but realise that these benefits will accrue over time with increasing numbers of users of the system. Sponsors introduce the IOS knowing that it will take time before they can expect to derive significant benefits. Adopters on their part want to obtain clear, immediate benefits from the system. From the adop-

ters' point of view, there is little advantage to be had from adopting a system which is not providing benefits straightaway. If there are no tangible benefits, they will not adopt; if benefits accrue later, then potential adopters will wait and adopt later. Of course, presenting a dichotomous picture of sponsors and adopters simplifies reality. There are many shades of grey between the two extremes pre-

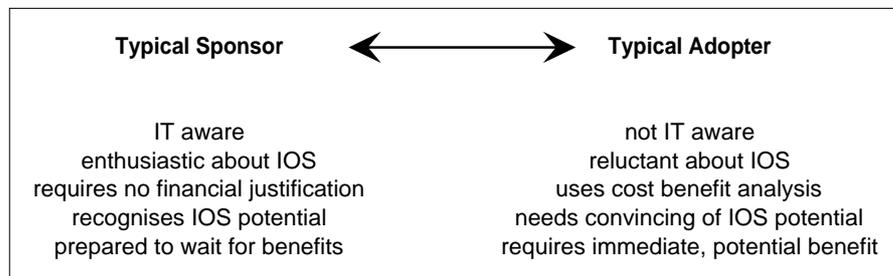| Typical Sponsor	⟷	Typical Adopter
IT aware		not IT aware
enthusiastic about IOS		reluctant about IOS
requires no financial justification		uses cost benefit analysis
recognises IOS potential		needs convincing of IOS potential
prepared to wait for benefits		requires immediate, potential benefit

Figure 1: The Sponsor - Adopter Gap

sented in Figure 1. However, discussion of the issues is facilitated by describing the extremes. The sponsor-adopter gap describes the notion of intrinsic differences between sponsor and adopter at the time of IOS introduction and during IOS implementation. Since these differences inhibit implementation, it is important to understand the underlying reasons for the sponsor-adopter gap and then to look for ways to overcome this gap.

Why is There a Gap?

An IOS can be viewed as a new product, a new service or a new technology; as such, an IOS has the properties of an innovation. The innovation literature provides an explanation for the differences between sponsors and adopters at the time that sponsors introduce their IOS to the market. There are differences in characteristics of IOS sponsors and the pool of IOS adopters. In addition, sponsors and adopters find themselves at different stages of the IOS diffusion process.

Different Characteritics

It is well-known that some people (or organisations) are quick to embrace an innovation, while others are slower. A very small percentage of a population are real innovators; the vast majority are more conservative and require time before accepting an innovative idea or product [1]. The sponsors of IOS tend to be *innovators.* A study of sponsors of IOS in the USA [2] found strong evidence that organisations interested in and developing IOS for use with business partners tend to have entrepreneurial, innovative qualities. In contrast, potential adopters reflect a full population with a whole range of characteristics. In the total pool of business partners and potential adopters there are indeed a few innovative ones, but the majority is more *conservative.* Hence there is a difference between the typical (innovative) sponsor and typical (conservative) adopter in terms of characteristics.

Stages in Diffusion Process

Innovations are not simply adopted; most people (or firms) go through an adoption process. The process consists of a number of stages: from first finding out about an innovation, through an evaluation and trial stage, to the decision to adopt and use and, finally, to the implementation stage [1]. Sponsors of IOS are at the *implementation stage*: they have accepted the idea of the technology, internalised it, have developed a product (the IOS) and are now offering it to the market. At that point in time, potential adopters of IOS are only just finding out about the system and are at the initial *awareness stage.* It takes time for adop-

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ters to move through several stages in order to reach a similar level of understanding as sponsors.

Both differences in characteristics and differences in stage of the diffusion process explain the existence of a sponsor-adopter gap. Sponsors tend to be innovators who, in addition, are at an advanced stage in their understanding of the systems; adopters can be anything from innovators to laggards and, at the same time, are at the first stage of the diffusion process. Once it is clear what are the differences between sponsors and adopters and why those differences are there, it is possible to identify ways to overcome the sponsor-adopter gap.

What Can be Done About the Gap?

The gap between sponsor and adopter can be overcome by efforts from the

themselves. Through careful marketing the sponsor can address the adopters' lack of technological awareness and lack of understanding of the business impact of the IOS. This type of marketing is much more sophisticated than mere 'selling' of the system. Superior marketing includes establishing a dedicated, well-trained sales force, providing continuing support for the IOS, offering help with integration into the adopters' business processes, establishing user groups, responding to requests for modifications of the system.

Adopters: Adopters tend to learn from each other. Peers have similar problems and run similar operations and thus contact among peers is a powerful means of organisational learning. Organisations are more easily convinced by recommendations from peers than by sales talks from sponsors. Communication among poten-

The sponsor-adopter gap exists and can not really be prevented. When not understood, the sponsor-adopter gap can contribute to difficult and delayed implementation of IOS. It is therefore important not only to be aware of the differences between sponsors and adopters, but also to try and overcome them. Sponsors can actively bridge the sponsor-adopter gap by using superior marketing when introducing the IOS to potential adopters. As for adopters, understanding of the IOS and trust of the sponsor is enhanced by interaction among adopters themselves. ∎

References

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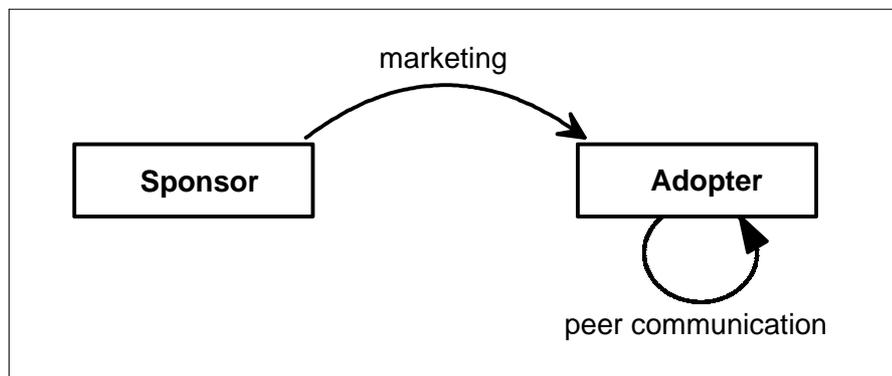
Figure 2: Addressing the Sponsor-Adopter Gap

sponsor and the adopter (Figure 2). The sponsor can actively address the differences and help the adopter understand and learn [3]. Adopter learning is speeded up by contact with other adopters [4].

Sponsors: The sponsor has to be sensitive to the characteristics of adopters and be responsive to the stage in the diffusion process in which adopters find

tial adopters in Chambers of Commerce, in industry groups and in user groups enables exchange of information, promotes understanding of the system and encourages uptake of the IOS. In this way, learning by potential adopters from others is a way of bridging the sponsor-adopter gap and speeds up diffusion of IOS.

* Dr. Angèle Cavaye is Assistant Professor at the Department of Systems Engineering, Delft University of Technology, The Netherlands.

Marketing EDI

Once the critical mass of EDI users is reached, the rate of EDI adoption will speed up. Therefore, the question is how to induce implementations in excess of the critical level. The strategy of cascading critical masses presented here may serve to promote the diffusion of EDI.

The diffusion of EDI, especially in Switzerland and Germany, seems to be nowhere near the predictions. Why is the diffusion of EDI so poor? Is it possible to

** by Detlef Schoder
University of Freiburg i. Br.*

speed up the diffusion process? In response to these questions, we will first characterize a certain class of goods

called network externalities goods (NEGs), under which EDI can be subsumed. NEGs have interesting features relevant to their patterns of diffusion. In a second step, we will present the strategy of *cascading critical masses*.

EDI is a NEG

EDI standards, subsets, and procedures, along with the corresponding hard-

ware, can be classified as network externalities goods. Table 1 shows the important differences between singularity goods and NEGs. The important features of NEGs are the following:

❏ *Product utility* and *network externalities:* The utility of an NEG is constituted by the level of diffusion of complementary goods (indirect network externalities). The utility rises in accordance with the number of users connected to the same network and in accordance with the degree of shared standards and components (direct network externalities).

❏ *Feedback processes:* A special form of feedback is present when individuals