

The Use of B2B Process Standards: A Case Study

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Abstract. Interactions between organisations are becoming more and more frequent. One of the most common approaches is to use standards-based communication for information exchange. Even though much effort in both academia and industry is dedicated to enhance standards and to develop technical solutions for using them, few case studies have been made of how standards are actually being used in practice. Our paper reports on one such case study. The result shows that standards selection is not a straightforward and voluntary process, but is influenced in most cases by external parties. The organisations agree that e-business is an important, and sometimes even necessary, for their future. The business processes will be affected, since the way of working in organisations is believed to change.

1 Introduction

Business processes are key factors in creating competitive advantage, making continuous process improvement imperative. One approach is process integration through standards-based communication. A standard prescribes how to create and exchange documents between organisations, where the document structure and information can be understood and possibly automatically processed. Business-to-business (B2B) standards, in focus in this paper, generally aim at enabling information exchange between organisations. Current work with standards, in academia and in industry, is mostly technical. Few case studies exist. This paper reports on such case study in a geographical region in the south of Sweden. The goal was to investigate how organisations in this region are working with B2B and standards-based solutions. The focus group is described in Chapter 2, while results are described in Chapters 3, 4, and 5, looking at standards selection, business relationships and business processes. Results are summarised in Chapter 6.

2 Focus group

The study covers eight different organisations. Seven of those are large industrial companies, meaning that their revenue is higher than 40 million SEK (just below 4 million USD). Even though several of them operate internationally, they all have local offices in this region. The eighth organisation is a municipality, which has quite advanced B2B interactions. All organisations match our three pre-requisites:

1. The organisation must be involved in electronic trading between companies (B2B). The motivation is that the study is limited to standards used in B2B trading.
2. The persons giving the responses must have a key position in the electronic business of the company. The reason is that the respondents should have direct insight into how the organisation manages its B2B standards usage.
3. The companies should represent a variety of industry branches. This would give the case study breadth, and an initial, general overview of how standards are used. Represented branches are: banking, electrical wholesalers, car manufacturers, agricultural products, and tool wholesalers. All answers were treated anonymously, which is why no company or person names appear in this paper.

3 Standards and standards selection

The one standard used in all the organisations is Edifact, which is based on Electronic Data Interchange (EDI). EDI is intended to be used in transaction-intensive flows. An alternative to EDI is the extensible Markup Language (XML). XML will not be of further interest here, since neither of the organisations in our study used an XML-based standard. The respondents motivated this choice of EDI with having started their standards work before XML existed. When selecting a standard, the choice is most often affected by another organization, such as: *IT supplier* (1 of 8, 12,5%); *Public authority* (1 of 8, 12,5%); and *Co-operation partner* (5 of 8, 62,5%). One organisation only (12,5%) stated that they had *no external influence* in standards selection. One consequence is that organisations rarely get to select the B2B standard with accompanying technology that best suites the organisational needs.

4 Standardised business relationships

Only one organisation uses standards with *customers only* (12,5%). More common is to use it with *suppliers only*, in our study 50% of the respondents. 37,5% of the companies use standards with *both customers and suppliers*. In total, this means that 87,5% of the organisations in our study use standards in their B2B communication with suppliers, and that 50% of them use standards with their customers. All companies in our study are large, and are connected to a number of smaller organisations (most often suppliers). A similar investigation should therefore be made with the smaller companies, to investigate whether large organisations use standards with smaller suppliers, while smaller organisations use them with larger customers.

5 Business process types and process effects

Our study shows that 6 of 8 organisations (75%) believe that standards affect business processes. The other two are still evolving their way of working, and may consider changes to depend on more than standardisation. Either way, business process efficiency is important, and can be determining for whether a company succeeds with

its standards implementation or not [1; 2; 3]. Standards are used in different types of business processes. Our results show the following processes: procurement, order, invoice, and payment, of which order is the most commonly standardised (by 100% of the organisations in our study). Following order, two processes share second place: procurement and invoice. Both are standardised in 7 of 8 (87,5%) organisations. The company that does not standardise invoice motivates it with that implementation required too much time and was too complex. The company that did not standardise procurement did so with the motivation that electronic trading only was performed with customers and not with suppliers. One organisation (12,5%) has standardised its payment process.

It follows from the discussion that standards are used in the most transaction-intensive flows in organisations, which is in line with the intents of EDI. The companies in our study believe that standards are working well, and that they are a necessary part of future developments. The mentioned process effects are: *More effective work routines*, leading to different work assignments, automation of tasks, a chance to focus human resources on the essence of the organisation's work, and a possibility to reduce required resources. *Central administration of business processes*, enabling a partly automated, common, standards-based approach. *More structured business transactions*, since they are organised and managed equally throughout the organisation. *Simplified business transactions*, since organisations more easily can connect processes that have been prepared for it.

6 Advantages and disadvantages

Almost 40% of the respondents claim that one advantages of standards is that it is *easier to incorporate new members* into an existing partner network, as well as into the system that connects them. Furthermore, which was mentioned by 62,5% of the organisations, a standard guarantees that there are *no misunderstandings* during business transactions. Thirdly, automated business processes lead to increased efficiency, which in turn brings *long-term cost reductions*. Partly, this comes from the chance to draw on experiences of others. Standards may *change the way of working* in a positive sense and lead to new role definitions. One example is that traditional sales personnel now work more with problem solving and with expert advisory assignments. Two companies (25%) mentioned the enabling of business system integration while still being able to *keep working with their own system*. The positive aspects coheres to a great extent with what is mentioned in literature. [4] mentions: global connectivity, enabled inter-operation and automation of processes and systems, enabled increase in productivity and reducing of costs, and more efficient use of IT in organisations, which refers to speed in setting up partner networks. Research and industry therefore seem agree on positive aspects.

Regarding disadvantages, several organisations point out that a well-functioning, standards-based e-business system takes *time* to implement, and that it is associated with *high costs*. *Business integration* is not as smooth as desirable or promised, e.g. when organisations require that their suppliers use the same standards as they do. One organisation mentioned that standards often bring complex solutions to solve the needs of many, and that Edifact is *too general* in its form, i.e. it tries to cover too much at a high level. The result is that Edifact includes too many options and variants,

and that organisations often use only part of it. Comparing again with literature, [4] mentions a number of disadvantages: market dominance by one standards developer organisation, failure to account for specific situations, differing schemas or standards variants, poor standards integration, and long development time. Two aspects mentioned by the organisations are thus mentioned in literature: standards generality and variants. One disadvantage [5], is that companies may be forced to manage many different standards, forced upon them by suppliers and/or customers. Even though the organisations in our study did not explicitly mention this as a disadvantage, several of them did discuss standards enforcement and the possible effects thereof.

7 Summary – future visions for standards and e-business

The study aim was to investigate how organisations in a Swedish geographical region are working with B2B and standards. The study was broad, to provide an initial, general overview of standards usage, and to increase the body of knowledge about standards usage. The study has shown that standards selection is not a straightforward process, but that it in most cases is influenced by external parties. Most of the large organisations use standards in relation to their suppliers, while not as frequently with their customers. The kinds of processes that are standards-based are mainly procurement, order and invoice. There are a number of advantages mentioned, as well as disadvantages. While mostly agreeing with literature regarding positive aspects, not all disadvantages mentioned cohere with what is written in literature. This indicates that disadvantages may differ depending on the viewpoint, but that advantages are the same regardless of viewpoint. The focus group agreed that e-business is important, and sometimes necessary, for organisations to consider in the future. Whether or not they are right remains to be seen.

References

1. Fredholm, P. (1999), *Electronic business* (in Swedish), Studentlitteratur, Lund, Sweden
2. O'Sullivan and Whitecar (2000), *Implementing an Industry e-Business Initiative: Getting to RosettaNet*, Intel Technology Journal, 1st quarter, February 3, 2000
3. Davenport, T. (1993), *Process Innovation: Reengineering Work through Information Technology*, 1st Edition, Harvard Business School Press, Boston, Mass.
4. Söderström, E. (2001), "The Role of Standardisation in Inter-Organisational Business Processes", In *The 2001 IEEE Conference on Standardization and Innovation in Information Technology* (SIIT 2001), October 3-6, Boulder, USA, pp.263-271
5. Rotem, D., Olken, F. and Shear, R. (2001), *Coping with standards*, EAI Journal, available at: <http://www.eaijournal.com/Article.asp?ArticleID=447>, as is February 25, 2002.