

## **Business Transactions and Standards**

Towards a system of concepts and methods for early problem identification in standards implementation projects

By Borina Rukanova, PhD thesis, Febodruk BV, Enschede, The Netherlands, ISBN 90-365-2268-4, 262 pages 154, References

Focus of the thesis is on the implementation of domain specific operational standards supporting the automated part of the business communication in the business transaction processes. The issues addressed are: establishing transaction requirements and matching those requirements with standard capabilities.

The system of concepts and methods developed by the Borina Rukanova is based on an extensive literature search on business transactions and on standardisation. More than 150 references are cited and illustrate the amount of work invested in this thesis. This makes the book a very valuable source of the subjects state of the art and should be very useable for the subject of interoperation at large.

The book is organised in five parts followed by an annex reporting on applications of the developed system of concepts and methods. It starts with an elaborate introduction into the research problem addressed, identifying both the to be automated part of business communication as the part of business transactions, which has to be supported by standards as well as life cycle and applicability and content categories of standards. A distinction is also made between technical and inter-organisational interoperability. The latter recognises not only the information flow, but the information field paradigm e.g. the cultural and social context in which the business transactions take place. It thereby recognises that the meaning of information depends on the context in which it is interpreted. The semiotic framework is used to distinguish between the IT infrastructure part with physical world-, empirics- and syntactics-level and the human function part with semantics-, pragmatics- and the social world-level. Emphasis of the thesis is on the human function part.

The work described in the following parts is on the identification of a system of concepts to be used in the analysis of distributed business transactions (part II), methods for analysing business transactions (part III) and case studies (part IV). Part V provides conclusions and identifies further research work.

Part II - Two of the main problems identified are a) the need for multidisciplinary research with the consequence of different professional jargons and b) the breath vs. depth dilemma in the analysis of business transaction. These problems are to be overcome by introducing the concept of view as the base of the system of concepts. The 6 views listed below use existing theories to capture the upper three level of the semiotic framework as well as the business transaction and business communication itself.

- 1) subject matter view: semantic of business communication using ontologies to identify the domain of interest for a specific group of people
- 2) communication act view: pragmatic (intentions) of business communication using language-action perspectives
- 3) business rule view: business rule (governing participants behaviour) of business communication using norm analysis theories
- 4) business process view: activities and resources needed to integrate business communication into the business transaction using business process modelling techniques
- 5) business network view: shared context (identification of the relevant actors) between the partners in the business transaction using individual knowledge from the partners

- 6) focal exchange view: business transaction as an economic exchange (double transfer of ownership) using economic theories

Views 1-3 are to be used for direct analysis of the standards to be implemented, whereas the use of views 4-6 indicate mismatches on the business transaction level rather than on the business communication level

Part III – Identifies methods needed to support the way of a) thinking, b) working and c) controlling. The effort in the thesis is on the way of working based on the views and their relationships leading to types and levels of analysis. Three types of analysis have been defined: a) Fit analysis (Requirements of business transaction and standard), b) Business transaction analysis (requirements and situation of business transaction) and c) Impact of standardisation analysis. The analysis level refers to view-, concept-, entity type- and instance-level.

Part IV – In addition to the examples (mainly from healthcare) used to illustrate the applicability of individual parts of the system of concepts contained in the earlier parts of this thesis, a very detailed case study on the energy liberation project in the Netherlands is described. It employs the complete system and the supporting methods as well. This case study demonstrates the usefulness of the results in a rather complex case with a number of parties involved and leads to the conclusion that potential problems in standard implementation project can be very well identified a priori.

Recommendations for further research work include development of a shared context between business partners, use of the system of concepts for requirements elicitation and for comparison of standards. A thought added by the reviewer is the use of the concepts for describing the capabilities of collaborating entities for a priori interoperability support.

For additional information:

Borina Rukanova, [brukanova@feweb.vu.nl](mailto:brukanova@feweb.vu.nl)