

2010

Relevance through Consortium Research? A Case Study

Boris Otto

University of St. Gallen, boris.otto@tu-dortmund.de

Hubert Österle

University of St. Gallen, hubert.oesterle@unisg.ch

Follow this and additional works at: <http://aisel.aisnet.org/ecis2010>

Recommended Citation

Otto, Boris and Österle, Hubert, "Relevance through Consortium Research? A Case Study" (2010). *ECIS 2010 Proceedings*. 41.
<http://aisel.aisnet.org/ecis2010/41>

This material is brought to you by the European Conference on Information Systems (ECIS) at AIS Electronic Library (AISEL). It has been accepted for inclusion in ECIS 2010 Proceedings by an authorized administrator of AIS Electronic Library (AISEL). For more information, please contact elibrary@aisnet.org.



RELEVANCE THROUGH CONSORTIUM RESEARCH? A CASE STUDY

Journal:	<i>18th European Conference on Information Systems</i>
Manuscript ID:	ECIS2010-0388.R1
Submission Type:	Research-in-Progress Paper
Keyword:	IS research methodologies, Research methods/methodology, Data quality, Design/design science



RELEVANCE THROUGH CONSORTIUM RESEARCH? A CASE STUDY

Otto, Boris, University of St. Gallen, Institute of Information Management,
Müller-Friedberg-Strasse 8, 9000 St. Gallen, CH, boris.otto@unisg.ch

Österle, Hubert, University of St. Gallen, Institute of Information Management,
Müller-Friedberg-Strasse 8, 9000 St. Gallen, CH, hubert.oesterle@unisg.ch

Abstract

The Information Systems (IS) community is discussing the relevance of its research. Design-oriented IS research is considered a promising approach since it combines practical relevance and scientific rigor. Only limited guidance, however, is available for the researcher to gain access to and exchange knowledge from the practitioners' domain. Consortium research addresses this issue. It is research collaboration between academic research institutions and partner companies aiming at jointly developing IS artefacts. Consortium research as a method comprises four phases, namely analysis, design, evaluation, and diffusion. This paper presents a case study on consortium research in the area of Corporate Data Quality Management (CDQM). In doing so, it explains the characteristics of consortium research which facilitate the knowledge transfer between researchers and practitioners. The paper contributes to the debate on research relevance by identifying aspects which - in further research - might be incorporated into existing guidelines for the conduct of design-oriented IS research.

Keywords: Research relevance, Consortium research, Design-oriented IS research, Case Study

1 INTRODUCTION

1.1 Motivation and Problem Statement

At present, there is a debate in the Information Systems (IS) research community on the relevance of research results. The focus topic of last year's International Conference on Information Systems (ICIS) e.g. was "Doing IT Research that Matters". Against this background Design Science Research (DSR) is seen as a promising approach because it aims at developing research artefacts which are of scientific rigour and of practical relevance at the same time (March & Smith 1995, Hevner & March & Park & Ram 2004). In recent years methodological guidance emerged supporting the researcher in the application of DSR principles. The DSR Methodology (DSRM) e.g. proposes six phases reaching from problem identification and motivation over the definition of the objectives of a solution, the design and development of the artefact itself, demonstration and evaluation to the communication of the results (Peppers & Tuunanen & Rothenberger & Chatterjee 2008). On top of such guidelines which span the entire lifecycle of a design-oriented research project, researchers propose methodological foundation also for the different phases in the DSR process, e.g. for artefact evaluation (Frank 2000, Winter 2008). Only limited attention, however, has been paid so far to the initial stages of DSR, namely the problem identification and the specification of the new solution. This is of particular interest because these stages determine the practical relevance of the research results already in the very beginning of the research effort. This phenomenon leaves open questions: How does IS research make sure that knowledge on solutions that work in practice - and also on those that don't - are incorporated in the research activity? How does IS research get access to the knowledge of the practitioners' community? Questions like these gain even more importance in times when IS research is not carried out exclusively at universities and research institutes any longer. Germany-based business software company SAP e.g. employs more than 15,000 staff in research and development (SAP 2009), outnumbering the corresponding staff in German universities and research organisations by far. Apparently, the ecosystem of IS research is under change. Which is the future role of academic IS research? Will it be a role of practical irrelevance or the role of the "entrepreneurial university" (Etzkowitz 2003) (just to name two extreme positions)?

The Institute of Information Management at the University of St. Gallen (IWI-HSG) has been doing consortium research for the last twenty years in the research field of Business Engineering (BE). Consortium research is referred to as a form of collaborative research between researchers and practitioners without exclusive usage rights (Brockhoff 1999). Consortium research facilitates design-oriented IS research and it is characterised by close collaboration between the participants in all DSR phases, by the evaluation of artefacts in a "real-life" context in the partner companies, by a focus on the practical benefit of research results and by the funding of research activities through the partner companies (Österle & Otto 2009). Through its methodological character consortium research provides guidance for doing DSR, especially in initial phases such as problem identification and definition of solutions and objectives.

1.2 Research Question and Approach

Access to and exchange of knowledge from the practitioners' community sets the frame for the work presented in this paper. The research question the paper addresses is: How does consortium research facilitate the knowledge transfer between researchers and practitioners? To investigate this question, the paper uses a case study research approach. A case study is an empirical study investigating a contemporary phenomenon in its real-life context (Yin 2002). The case presented in this paper is taken from a current research project in the field of Corporate Data Quality (CDQ) at IWI-HSG which is in the following referred to as the Competence Center Corporate Data Quality (CC CDQ). It proposes that consortium research as a method consists of certain constituents that stimulate knowledge exchange between research and practice. The case study aims at illustrating the collaboration between researchers and practitioners in the CC CDQ. Therefore, the case study is interpretive and of

explanatory nature (Darke & Shanks & Broadbent 1998, Yin 2002). The source of evidence used is participant observation, which is considered appropriate as the authors took over an active role in the CC CDQ. This form of data collection allows for a viewpoint from the “inside”, however, at the cost of less intersubjectivity compared to alternatives such as pure observation (Yin 2002). The authors of this paper function as interpreters (Stake 1995). They aim at making the contributions of consortium research to the knowledge transfer between research and practice comprehensible to the IS community, hence, delivering input to the current debate on relevant IS research.

2 BACKGROUND

2.1 Organisation of design-oriented research

Organisation is necessary in design-oriented IS research since the latter requires collaboration of different actors, namely academic researchers and practitioners, at least. Organisation, in general, is a system aiming at the conduct of activities and the assignment of roles to those activities (Nordsieck 1968, Grochla 1982). Only little knowledge is available on the organisation of design-oriented IS research. Some examples can be found which deal with user integration during design and development of IS instantiations. Among the most notable ones is the so-called “living lab” (Følstad 2008). In traditional design-oriented disciplines, such as engineering, collaboration of different actors along the value chain is nothing new. Figure 1 shows different organisational forms of knowledge creation.

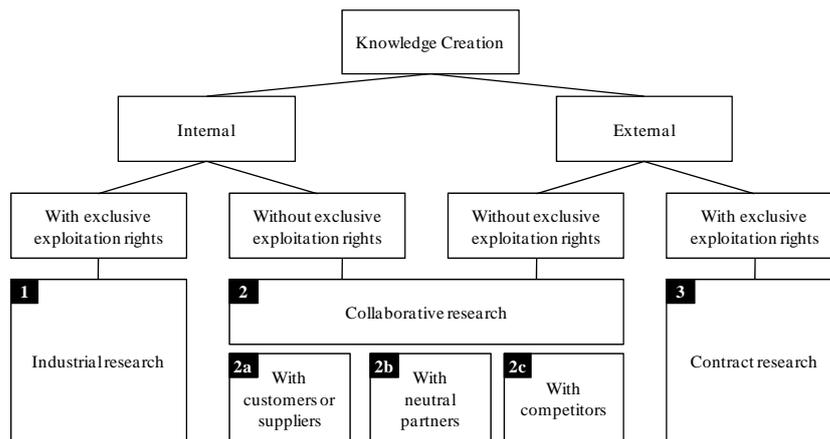


Figure 1: Organisational forms of knowledge creation, adapted from (Brockhoff 1999)

As mentioned above, research activities in the IS domain are not any longer carried out exclusively by academic research organisations, but take place in the practitioner community to a great extent (Starkey & Madan 2001). Moreover, the roles within the research ecosystem are under change. Leydesdorff and Etzkowitz (2001) refer to the “triple helix”, i.e. the transformation of functions of university, industry, and government. Following their line of argumentation, universities may evolve into “quasi firms”, into the role of incubators, and into “knowledge mediators” for the practitioners’ community.

2.2 Access to and exchange of knowledge

Before new knowledge can be created, the existing knowledge base must be analysed, taking into account both the scientific and practical body of knowledge. This analysis also includes knowledge of artefacts which worked and of those which did not. Three dimensions classify forms of knowledge (David & Foray 1994):

- The two “extreme poles” “codified” or “explicit” knowledge versus “tacit” knowledge refer to a complete systematisation of cognitive content on the one side and to knowledge which is not systematised at all and is possessed by individuals only on the other side.
- The terms “privately owned” knowledge and “public” knowledge refer to knowledge as being legal property.
- The “extent of disclosure” ranges from fully restricted access to knowledge to knowledge being completely disclosed.

While contractual agreements deal with the latter two dimensions in collaborative research settings, the conversion of knowledge from explicit to tacit and vice versa is of relevance for the cooperation between academic researchers and practitioners. Four types of conversion and transfer, respectively, can be determined (Rynes & Bartunek & Daft 2001):

- “Socialization” describes the tacit-to-tacit knowledge transfer. An example for that is the transfer of experiences about stakeholder and organisational change management within an organisation through a participatory action research project (Susman & Evered 1978).
- The second type of conversion is “externalization”, i.e. the process of which tacit knowledge is converted to explicit knowledge. An example for that is the evaluation of design artefacts by focus groups and interviews including subsequent explication according to grounded theory principles, e.g. using coding techniques (Corbin & Strauss 1990).
- The explicit-to-explicit knowledge transfer is referred to as “combination”. An example for that is a joint researchers-practitioners project team in which researchers bring in their expertise on reference modelling and practitioners deliver well-documented business processes.
- “Internalization” as the fourth type refers to the conversion of explicit knowledge to tacit knowledge. An example for that is participatory action research and training sessions.

3 CONSORTIUM RESEARCH AS A METHOD FOR COLLABORATIVE RESEARCH

Consortium research as a method aims at the development of artefacts within a collaborative environment. It focuses on research areas where no exclusive exploitation rights are desired by the research partners (cf. forms 2a, 2b, 2c in Figure 1). As a consequence of that, it mainly addresses research topics which are investigated along a value chain or in co-operation with neutral partners, such as industry associations, standards bodies, or software companies.

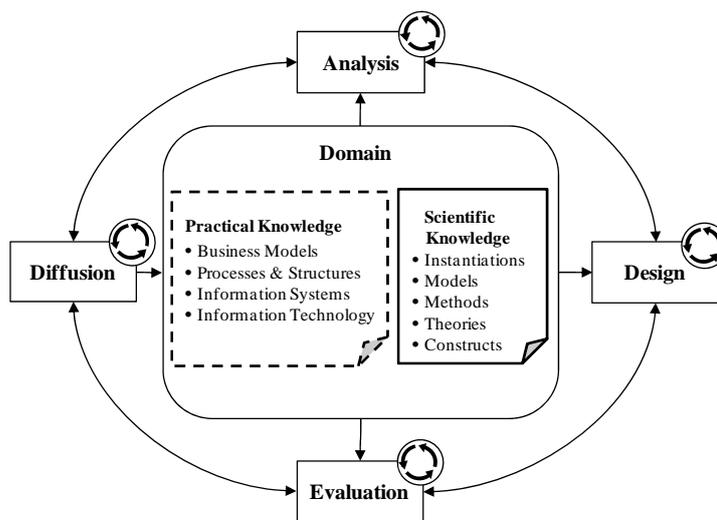


Figure 2. Consortium research method

Consortium refers to research projects in which a number of partner companies together with academic researchers work on a certain research topic under the following conditions:

- Academic researchers and practitioners commonly define research objectives, assess progress of work, and evaluate project results.
- Research partner companies participate in research projects with their own experts and grant university researchers access to their knowledge resources.
- The results of the research are artefacts that offer substantial benefit for the companies participating.
- The companies participating test the artefacts developed in their business settings.
- The companies participating finance the research with resources in form of money and time of experts.
- The research results are made accessible to the public.

Following the principles of Method Engineering (ME), consortium research consists of five components, namely “meta-model”, “phases”, “results”, “techniques”, and “roles” (Olle 1991, Brinkkemper 1996). However, it extends the traditional method notion by the “domain”, i.e. the area in which the method is to be applied and is supposed to yield new insights. The case is presented according to the components of the method with the exception of the meta-model and techniques for space reasons. A detailed description of the consortium research method is available as a working paper (Österle & Otto 2009). Figure 2 gives an overview.

Phase	Activity	Type of knowledge exchange addressed
Analysis	Identify and assess existing artefacts in practice, i.e. solutions/instantiations, models, methods.	Externalisation of what worked and what did not
	Search for potential partner companies, discuss research ideas with subject matter experts	Externalisation through reflection of research gaps/goals against experience of practitioners
	Check relevance of research gaps/goals and develop consortium agreement	Externalisation, enforcing practitioners' judgement regarding the relevance of the planned research
Design	Conduct focus groups (cf. Morgan & Krueger 1993) on design decisions	Socialisation, through the exchange of knowledge, experiences
	Reference modelling (cf. vom Brocke 2007)	Combination, through the incorporation of industry models etc.
	Conduct action research (cf. Susman & Evered 1978) within pilot projects	Socialisation, bilateral regarding both practical and scientific knowledge
Evaluation	Pilot and test artefact in “real-life” environments in the partner companies	Externalisation Internalisation
	Conduct focus groups to evaluate artefacts	Socialisation Externalisation, making judgements from practitioners explicit
Diffusion	Roll out results within the partner companies	Internalisation
	Publish/present results in industry events (both by researchers and practitioners)	Internalisation Socialisation

Table 1. Exchange of knowledge in consortium research

“A research domain is the subject matter under study of a research project” (Nunamaker & Chen & Purdin 1991). Since consortium research is a form of research co-operation between researchers and practitioners it does not separate different knowledge bases in the domain. It assumes that researchers take into account practitioners' knowledge at least as much as they do with regard to scientific knowledge. The former typically is tacit knowledge. It is not generated following scientific methods and is usually not well-documented (which is why the document symbols have dotted lines in Figure 2). However, it is nonetheless valuable as it offers opportunities to verify research results, to allow for looking at a large number of cases, and it is subject to permanent evaluation on highly competitive

markets. The consortium research method covers four phases (analysis, design, evaluation, and diffusion). Table 1 shows the activities with facilitate the exchange of knowledge between practitioners and researchers during the four phases.

4 THE CC CDQ CASE

4.1 Research domain and research setting

The CC CDQ aims at the development of artefacts to foster the quality management of corporate data in large organisations. The quality of corporate data is of relevance to companies due to a number of business requirements. Among them are integrated customer management (often referred to under the metaphor of a “360-degree view”), compliance to legal and regulatory requirements, accurate and efficient reporting based on “one version of the truth”, and company-wide business process harmonization.

The knowledge in the domain is distributed between scientific and practitioners’ sources. The scientific roots for data quality management were laid by a research program at the Massachusetts Institute of Technology (MIT) headed by Richard Wang in the 1990s. His research group worked on ways to measure data quality (Wang & Strong 1996), on the transfer of learning from manufacturing to the “production” of information, and on a framework for Total Data Quality Management (TDQM) (Wang & Lee & Pipino & Strong 1998). The knowledge base was complemented by the work of English (2003) and the research group around Batini and Scannapieco (2006), just to name a few. The research community meets regularly on conferences, such as the International Conference on Information Quality (ICIQ), and special tracks on mainstream conferences, such as the Americas Conference on Information Systems (AMCIS). In addition to that, there is an active practitioners’ community, which can be categorized as follows:

- Private knowledge transfer organisations, such as the “Data Governance Institute” (see <http://www.datagovernance.com/index.html>);
- Vendor driven industry working groups, such as the Working Group Master Data Management (MDM) within the “Deutschsprachige SAP-Anwendergruppe” (German-speaking SAP user group, see <http://www.dsag.de>) or IBM’s data governance council (IBM 2007),
- Industry associations, such as DAMA International, who edits the so-called Data Management Body of Knowledge (DMBOK®);
- Standards bodies, such as ISO, which recently published a technical specification on data quality (ISO, 2008),
- Practitioners’ conferences and symposiums, such as the Information Quality Industry Symposium organised by the MIT,
- Knowledge in user companies, since the management of corporate data in companies has decades of a history.

Despite the fact that CDQM in large organisations is not a new topic, there are various research questions that are still open. Among them are e.g. the question of sustainable establishment of preventive CDQM within an organisation, management of “business semantics” as a prerequisite for unambiguous understanding of data objects across different organisational units, and determination of the business value of good corporate data quality, including e.g. valuation options on the balance sheet (Wilson & Stenson 2008). To take on these questions, the consortium research project was prepared in the course of 2006 before it was formally launched in November that year. It ran until October 2008 and was then extended for another two years. The successor project is currently under way.

4.2 Consortium and role assignment

The consortium consists of eight research partner companies (cf. Table 2), IBM Global Business Services as an affiliated co-organiser of the project and IWI-HSG. All partner companies are large enterprises, their annual revenue in 2007 ranges between 3.7 and 99.4 billion Euros. They employed

between 17,800 and 272,000 staff in 2007. Four partner companies formed the initial consortium, namely Bayer CropScience, Daimler, Deutsche Telekom and ETA, while the others joined at a later point of the project. In all cases, the cooperation in the consortium research project was linked to an inner-company program on the establishment of CDQM on a widespread level.

Research Partner Companies	Industry/Headquarter	Steering Committee Member	Working Group Member	Subject Matter Experts
Bayer CropScience	Chemicals/Germany	Head of Unit "Master Data Service"	Project Manager "Master Data"	10+ from IT, SCM, Planning
Daimler	Automotive/Germany	Manager "Enterprise Content and Performance Management"	External Consultant	5+ from IT, Enterprise Architecture
DB Netz	Public sector/Germany	Head of Unit "Infrastructure Data Management"	Head of Unit "Strategic Infrastructure Data Management" Team member "Strategic Infrastructure Data Management"	15+ from various business units, e.g. "Timetable planning"
Deutsche Telekom	Telecommunications/Germany	Head of "Data Governance"	Project Manager	5+ from corporate MDM team
E.ON	Utilities/Germany	Team Member "Information & Quality Management"	Team Member "Information & Quality Management"	3 from corporate information logistics
ETA	Manufacturing/Switzerland	Head of Unit "Organisation and IT"	Team Member "Organisation & IT"	5+ from IT and business units
ZF Friedrichshafen	Automotive/Germany	Head of Unit "Organisational Consulting IT"	Project Manager "Organisational Consulting IT"	10+ from various corporate functions
Partner 8	Automotive/Germany	Head of Unit within "Corporate Accounting and Organisation"	Team Member within "Corporate Accounting and Organisation"	15+ from various corporate functions

Table 2. Practitioners' roles

The practitioners participating in the consortium were the individuals responsible for the inner-company initiative as well, plus members of their teams. In that function, they represented an "entry point" to the domain knowledge within their company. They established contact to specific subject matter experts of whom special expertise was required in the course of the project. Table 2 shows the practitioners' roles and the average number of specific subject matter experts which contributed to the research process. The academic researcher team consists of one professor, one post-doc researcher, and 4.5 research assistants on the average.

4.3 Phases and activities

The analysis phase started in the second quarter of 2006 with first ideas at IWI-HSG to set up a consortium research project on corporate data management. The idea was motivated by the assumption that corporate master data would become a success factor for the increasing integration of value chains, in particular within the consumer goods industry. The idea was further encouraged by the upcoming of data standards for cross-company business processes in the industry and the emerging of

data pools (Legner & Schemm 2008). The idea was discussed with IBM, who introduced the notion of data quality to the topic and broadened the scope towards a cross-industry, cross-process topic addressing not only the area of business process integration, but also compliance, reporting, and customer management. Following these discussions, an analysis of the scientific body of knowledge (see “Research domain”) and a reflection against existing contributions from the practitioners’ domain was performed, in particular against the results of IBM’s Data Governance Council (IBM 2007). The research outline, as a result of these activities, identified nine potential areas of research in the domain, namely “information requirements of business models”, “controlling systems for corporate data quality”, “organisation”, “processes”, “system support for data management processes”, “data architectures”, “business networking”, “external data services”, and “transformation and change management”.

Besides the work program, the project outline also contained information on the project objectives, namely to develop artefacts of practical value and to facilitate knowledge transfer within the community, the project organisation and the “modus operandi”. The latter defined a series of five annual two-day workshops with the entire consortium to work on topics and report on the progress, and it also included the project costs for the research partners to join the consortium.

From July to November 2006, the project outline was discussed with approximately twenty companies. With ten out of the twenty, an intensive discussion in the form of a workshop took place. In the kick-off workshop in late November 2006, six interested partner companies were participating of which four finally agreed to start the consortium research project. Major results of the kick-off workshop were:

- Consolidation of the number of research areas from nine to eight (“External data services” were subsumed under “Business networking”);
- Detailed list of open questions within the remaining eight areas;
- Mutual agreement to conduct “baseline assessments” with all partners to determine their current situation regarding the eight research areas as well as allow for better understanding between each other; baseline assessments were carried out according to the principles of expert interviewing and focus group techniques.

The analysis phase concluded in February 2007 with the finalization of the project plan, the signing of the contracts, the planning of the pilot projects, and the presentation of the baseline results.

The design phase started in February 2007, the evaluation phase in May 2007, with the evaluation of the first artefacts. Both phases were being conducted until the end of the project in October 2008. In this period the consortium grew from four to eight partners. With two of them, namely DB Netz and ZF Friedrichshafen, the baseline assessment was conducted, so that formally the analysis phase was “re-opened”. Such iterations are deliberately envisaged in the method and are illustrated in Figure 2 as circles in the upper right-hand corner of the phase boxes.

In the course of the design phase and the evaluation phase the following techniques were applied to facilitate the transfer of knowledge within the consortium and between the consortium and external partners:

- 9 two-day workshops with participants from all research partner companies;
- Within the nine workshops, 16 focus group interviews (cf. Morgan & Krueger 1993) on various topics from the areas of research defined;
- 28 “best practice” presentations from representatives from organisations outside the consortium on various topics from the areas of research defined; among these companies were user companies (e.g. BASF, Nestlé, Zurich Financial Services), solution providers (e.g. alfabet, Babylon, D&B, SAP), consulting companies (e.g. Ernst & Young), an industry association (namely DAMA), as well as representatives from other research organisations;
- Evaluation of selected results in focus group interviews during two industry events, namely the “IIR Data Management Kongress” in Cologne in February 2008 (focus group with 20 participants)

and the “DSAG Jahreskongress” in September 2008 in Leipzig (focus group with more than 35 participants from user and consulting companies);

- Pilot projects using action research to define objective and to demonstrate and evaluate artefacts (cf. Iivari & Venable 2009), conducted with seven of the eight research partners. In total, about 70 project meetings were carried out and documented.

Two of the focus groups led to an advancement of the areas of research towards a domain reference model forming the foundation for a maturity model for CDQM (Hüner & Ofner & Otto 2009). The number of design areas was further reduced. By that time it consisted of six design areas, namely “CDQ Strategy”, “CDQ Controlling”, “Organisation for CDQ”, “CDQ Operations”, “Integration Architecture for CDQ”, and “CDQ Applications”.

The diffusion phase started in August 2008 and is still going on. Activities here are, among others:

- Scientific publications: see “Results”;
- Practice publications: selected results were presented at industry events (e.g. SAP Info Days, Industry Symposia on corporate data management) and in user companies interested in joining the consortium;
- Roll-out plans: in order to establish a foundation and common understanding of relevant terms in the domain, a “CDQ Fundamentals” lecture was held in one of the partner companies;
- Teaching material: guest lecture sessions from consortium research partners were incorporated in the “Enterprise Systems” course organized by IWI-HSG.

Apart from that, bilateral meetings to exchange experiences and discuss success factors took place between members of the consortium, e.g. between ZF Friedrichshafen and Partner 8, between Bayer CropScience and DB Netz, and between Deutsche Telekom and DB Netz.

4.4 Results

The overarching objective of the consortium research method is to facilitate the development of artefacts according to the principles of design-oriented IS research.

Partner companies	Data Governance	Maturity Model	Method for data quality metrics	Functional reference architecture for MDM	Metadata management with a semantic wiki	Method for identification of information objects
Bayer CropScience	1/2/4/5		1		1/2/4/5/6	
Daimler						1/2/4
DB Netz	1/2/4/5				1/2	1/2/4
Deutsche Telekom	4		1/2/4			
E.ON	5				1/2	
ETA	1		1/2/4/5			
ZF Friedrichshafen	1/2/4/5	1/2/4/6		1		
Partner 8		1/2/4/5/6				

Table 3. Research activities in the pilot projects

In the course of the project, the CC CDQ delivered the following design artefacts:

- Model for corporate data governance (Weber & Otto & Österle 2009);
- Maturity model for CDQM (Hüner et al. 2009, Ofner & Hüner & Otto 2009);
- Method for identification of business-related data quality metrics (Otto & Hüner & Österle 2009);

- Functional reference architecture for master data management (Otto & Hüner 2009);
- Instantiation of a semantic wiki for metadata management (Hüner & Otto 2009);
- Method for identification of information objects (Schmidt & Otto 2008).

Consortium research fosters the exchange of knowledge between academic researchers and practitioners and allows for multiple iterations of activities in the design and evaluation process (Hevner et al. 2004). Table 3 shows the design-oriented research activities carried out during the development of artefacts in the different research partner companies. The numbers in the cells of the matrix refer to the activities in the design-oriented IS research process proposed by Peffers et al. (2008). In this sense, (1) stands for “Problem identification and motivation”, (2) means “Definition of objectives for a solution”, (3) is “Design and Development”, (4) is “Demonstration”, (5) depicts “Evaluation”, and (6) means “Communication”. For example, Table 3 shows that the reference model for data governance was developed with the input of practical knowledge from six partner companies, with three of them contributing to four research activities.

4.5 Case Discussion

The CC CDQ case demonstrates the general applicability of consortium research to a typical IS research area. In the conduct of the CC CDQ project, however, a number of problems and limitations were encountered. Among them are:

- Personal discontinuity: The CC CDQ ran over a period of two years. During that time, major reorganisations took place (e.g. at Deutsche Telekom), while a couple of minor reassignments of personnel dedicated to the CC CDQ happened at Daimler, DB Netz and ETA. These changes hampered the continuous flow of knowledge and caused changing requirements regarding artefact specification.
- Expectation management: The practitioners involved in the project to some extent demanded short-term results tailored to their specific needs. This sometimes caused conflicts with the scientific requirements regarding rigorously applied methods and generalisable results.
- Disclosure of results: The practitioners in the consortium had to ask for approval to disclose company-specific information to the public domain. Whereas that was typically not a problem on an individuals’ level, it caused delays and publication stops on a corporate level (cf. Guide & Van Wassenhove 2007).
- Project management: Managing the consortium research project required competencies (e.g. relationship management) and resources which usually are not available in academic research environments.
- Data collection: The high number of workshops, interviews, project meetings etc. produced a vast amount of data. Regarding data collection and documentation, effort (e.g. for transcriptions) had to be balanced against utility on a case-wise basis. Not all of the data could be transcribed. Instead, research notes and meeting minutes were documented on a wiki page, following the idea of “research pragmatism” (Strübing 2008).

5 CONCLUSIONS AND OUTLOOK

Consortium research is a method for collaborative research in the IS domain. The case presented in this paper addresses the research question of how consortium research facilitates access to and exchange of knowledge from the practitioners’ community in the design of research artefacts. The case contributes to the current debate of relevant IS research. The paper illustrates the application of the method in the CC CDQ project, which is a current research project in the field of corporate data quality (CDQ) management at IWI-HSG. However, the paper falls short in explaining under which circumstances and conditions consortium research should be chosen over alternative research methods, and in which cases it might not be an appropriate choice. Further limitations lie mainly in the personal involvement of the authors in the case, i.e. the findings might be unduly biased by overly personal interpretation (Darke et al. 1998). This calls for further triangulation, which is planned to be carried

out in different ways. First, other consortium research cases shall be studied to increase the number of data sources. Second, interviews with experts from IS research and practitioners involved in consortium research as a form of methodological triangulation have partially been conducted already and are planned to be analysed and interpreted in a follow-up research activity.

References

- Batini, C. and Scannapieco, M. (2006) *Data Quality. Concepts, Methodologies and Techniques*. Springer, Berlin.
- Brinkkemper, S. (1996) Method Engineering: Engineering of Information Systems Development Methods and Tools. *Information and Software Technology* 38 (4), 275-280.
- Brockhoff, K. (1999) *Forschung und Entwicklung: Planung und Kontrolle*. Oldenbourg, München.
- Corbin, J. and Strauss, A. (1990) Grounded Theory Research: Procedures, Canons and Evaluative Criteria. *Zeitschrift für Soziologie* 19 (6), 418-427.
- Darke, P., Shanks, G. and Broadbent, M. (1998) Successfully completing case study research: combining rigour, relevance and pragmatism. *Information Systems Journal* 8 (4), 273-289.
- David, P. and Foray, D. (1994) Accessing and expanding the science and technology knowledge base. Organisation for Economic Co-operation and Development (OECD), Paris.
- English, L. (2003) Total Information Quality Management – A Complete Methodology for IQ Management. <http://www.information-management.com/issues/20030901/7320-1.html> (2009-05-07).
- Etzkowitz, H. (2003) Research groups as "quasi firms": the invention of the entrepreneurial university. *Research Policy* 32, 109-121.
- Følstad, A. (2008) Living Labs for Innovation and Development of Information and Communication Technology: A Literature Review. *The Electronic Journal for Virtual Organizations and Networks* 10, 99-131.
- Frank, U. (2000) Evaluation von Artefakten in der Wirtschaftsinformatikforschung. In *Evaluation und Evaluationsforschung in der Wirtschaftsinformatik* (Häntschel, I. and Heinrich, L. J., Eds), pp 35-48, Oldenbourg, München.
- Grochla, E. (1982) *Grundlagen der organisatorischen Gestaltung*. Poeschel, Stuttgart.
- Guide, V. D. R. J. and Van Wassenhove, L. N. (2007) Dancing with the Devil: Partnering with Industry but Publishing in Academia. *Decision Sciences* 4 (38), 531-546.
- Hevner, A. R., March, S. T., Park, J. and Ram, S. (2004) Design Science in Information System Research. *MIS Quarterly* 28 (1), 75-105.
- Hüner, K., Ofner, M. and Otto, B. (2009) Towards a Maturity Model for Corporate Data Quality Management. In *2009 ACM Symposium on Applied Computing* (Shin, D., Ed), pp 231-238, Honolulu, Hawaii, USA.
- Hüner, K. and Otto, B. (2009) The Effect of Using a Semantic Wiki for Metadata Management: A Controlled Experiment. In *Proceedings of the 42nd Hawaii International Conference on System Sciences* (Sprague, R. H., Ed), IEEE Computer Society, Waikoloa, Hawaii, USA.
- IBM (2007) The IBM Data Governance Council Maturity Model: Building a roadmap for effective data governance. IBM Corporation, Somers.
- Iivari, J. and Venable, J. (2009) Action Research and Design Science Research – Seemingly similar but decisively dissimilar. In *17th European Conference on Information Systems (ECIS 2009)* (Newell, S. and Whitley, E. and Pouloudi, N. and Wareham, J. and Mathiassen, L., Eds), Verona, Italy.
- Legner, C. and Schemm, J. (2008) Toward the Inter-organizational Product Information Supply Chain – Evidence from the Retail and Consumer Goods Industries. *Journal of the AIS* 9 (3/4), 120-152.
- Leydesdorff, L. and Etzkowitz, H. (2001) The Transformation Of University-industry-government Relations. *Electronic Journal of Sociology* 5 (4).

- March, S. T. and Smith, G. F. (1995) Design and natural science research on information technology. *Decision Support Systems* 15, 251-266.
- Morgan, D. L. and Krueger, R. A. (1993) When to use Focus Groups and why? In *Successful Focus Groups* (Morgan, D. L., Ed), pp 3-19, Sage, Newbury Park.
- Nordsieck, F. (1968) *Betriebsorganisation: Betriebsaufbau und Betriebsablauf*. Poeschel, Stuttgart.
- Nunamaker, J. F., Chen, M. and Purdin, T. D. M. (1991) Systems Development in Information Systems Research. *Journal of Management Information Systems* 7 (3), 89-106.
- Ofner, M., Hüner, K. and Otto, B. (2009) Dealing with Complexity: A Method to Adapt and Implement a Maturity Model for Corporate Data Quality Management. *15th Americas Conference on Information Systems (AMCIS 2009)*, San Francisco, CA, USA.
- Olle, W. T. (1991) *Information Systems Methodologies*. Addison-Wesley, Kent.
- Österle, H. and Otto, B. (2009) A Method For Consortial Research. Institute of Information Management, University of St. Gallen, St. Gallen.
- Otto, B. and Hüner, K. (2009) Functional Reference Architecture for Corporate Master Data Management. Institute of Information Management, University of St. Gallen, St. Gallen.
- Otto, B., Hüner, K. and Österle, H. (2009) Identification of Business Oriented Data Quality Metrics. In *14th International Conference on Information Quality (ICIQ 09)* (Bowen, P. and Elmagarmid, A. K. and Österle, H. and Sattler, K.-U., Eds), pp 122-134, Potsdam, Germany.
- Peffer, K., Tuunanen, T., Rothenberger, M. A. and Chatterjee, S. (2008) A Design Science Research Methodology for Information Systems Research. *Journal of Management Information Systems* 24 (3), 45-77.
- Rynes, S. L., Bartunek, J. M. and Daft, R. L. (2001) Across the Great Divide: Knowledge Creation and Transfer between Practitioners and Academics. *Academy of Management Journal* 44 (2), 340-355.
- SAP (2009) SAP Annual Report 2008. SAP AG, Walldorf.
- Schmidt, A. and Otto, B. (2008) A Method for the Identification and Definition of Information Objects. In *13th International Conference on Information Quality* (Neely, P. and Pipino, L. and Slone, J., Eds), pp 214-228, Cambridge, USA.
- Stake, R. E. (1995) *The Art of Case Study Research*. SAGE, Thousand Oaks.
- Starkey, K. and Madan, P. (2001) Bridging the Relevance Gap: Aligning Stakeholders in the Future of Management Research. *British Journal of Management* 12, S3-S26.
- Strübing, J. (2008) *Grounded Theory: Zur sozialtheoretischen und epistemologischen Fundierung des Verfahrens der empirisch begründeten Theoriebildung*. VS Verlag für Sozialwissenschaften, Wiesbaden.
- Susman, G. I. and Evered, R. D. (1978) An Assessment of the Scientific Merits of Action Research. *Administrative Science Quarterly* 23 (4), 582-603.
- vom Brocke, J. (2007) Design Principles for Reference Modeling: Reusing Information Models by Means of Aggregation, Specialisation, Instantiation, and Analogy. In *Reference Modeling for Business Systems Analysis* (Fettke, P. and Loos, P., Eds), pp 47-75, Idea Group Publishing, Hershey.
- Wang, R. Y., Lee, Y. W., Pipino, L. L. and Strong, D. M. (1998) Manage Your Information as a Product. *Sloan Management Review* 39 (4), 95-105.
- Wang, R. Y. and Strong, D. M. (1996) Beyond Accuracy: What Data Quality Means to Data Consumers. *Journal of Management Information Systems* 12 (4), 5-34.
- Weber, K., Otto, B. and Österle, H. (2009) One Size Does Not Fit All – A Contingency Approach to Data Governance. *ACM Journal of Data and Information Quality* 1 (1), Art. No. 4.
- Wilson, R. M. S. and Stenson, J. A. (2008) Valuation of information assets on the balance sheet: The recognition and approaches to the valuation of intangible assets. *Business Information Review* 25 (3), 167-182.
- Winter, R. (2008) Design Science Research in Europe. *European Journal of Information Systems* 17 (5), 470-475.
- Yin, R. K. (2002) *Case study research: design and methods*. Sage Publications, Thousand Oaks.