Valuable Innovation

Organising innovation for more than material value

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Abstract

In this master thesis an extensive literature research over a longitudinal period of fourteen years reveals a focus on material value in terms of tangible, visible and easy to measure assets. This focus manifests itself in six prominent themes derived out of 95 selected papers published in MIS Quarterly, an established, well-acknowledged and influential journal in the field of information systems research. Publications were selected on relevance with regard to innovation due to the association of information systems with change and development. A broader concept of value is identified and constructed out of two concepts, *immaterial value* and *immaterial values*. Although they only differ by one letter in name, their theoretical underpinning and the implications for information systems research differs widely. By defining *immaterial value* as a measurable result of the interplay of human, structural and customer capital, insights in existing literature with a focus on output are augmented, quantified and decomposed. In contrast, the emphasis on social interaction, mutual understanding and the need for imagination by using metaphors, makes the concept of *immaterial values* applicable to themes with a focus on input variables and conditions. The broader concept of value is applied to contemporary theory and practice. The overall finding is that by applying a broader concept of value, the field of information systems research can be enriched.

Keywords: Value, Values, Innovation, Information Systems Development, Understanding, Capital, Immaterial assets.

Note for speed-readers

This document is optimised for speed-reading, read this document (appendices excluded) within 15 minutes by reading every first sentence of each section and review all tables and figures. This technique will cover approximately 90% of the important notions and findings.

*"Wij zijn als gemeente Amsterdam deel van de samenleving en geen eiland. Als de samenleving zich ontwikkelt tot een informatiesamenleving moet de gemeente niet achterblijven. Dat is belangrijk omdat de gemeente optimaal wil kunnen communiceren met de samenleving, dat wil zeggen zo open en transparant mogelijk**. Ik vind onze informatiesystemen dus vooral van belang omdat ze ons helpen in gesprek te blijven met de samenleving**."*

Job Cohen, burgemeester van Amsterdam (Januari 2009, in een reactie op dit vraagstuk)

"We are part of society and not isolated as government of Amsterdam. If society develops itself into an information society, the government must not stand back. That is important since the government values the capability for optimal communication with society, as open and transparent as possible. ***Therefore I consider our information systems in particular valuable since they help us to maintain a dialogue with the society.***"

Job Cohen, major of Amsterdam (January 2009, in a response to this research challenge)

A word from the author

In a certain sense every word you read in this document has found its way into this document through my hands, the author, Willem L. Middelkoop. However, in this first section of my master thesis I would like to make some totally unscientific personal remarks regarding this thesis. You can easily skip this part and move on to the introduction where I will formally introduce this document.

Writing this thesis has taken me many hours: it is truly the most time-consuming thing I have done in years. From time to time I had a hard time explaining to other people why I invest such an incredible amount of time and energy in a single document. For all they know I already have a degree, namely that of Bachelor of Information and Communication Technology. But as insiders may understand very well, it is not the document itself that makes it worthwhile.

For this thesis I have probably read more pages than for all other study related assignments. This resulted in a tremendous shift in the way I perceive things, understand them and act on them. It has most certainly enriched my way of thinking in more than one way, and in addition, it proved to be fun to be able to quote selected authors of respected publications whenever you need them.

Overall I consider writing “Valuable Innovation” to be of great value to myself, and I honestly hope that this document will be of use for others.

Now it is time to get started,
Willem, March 2009.

Acknowledgements

Special thanks go to Ard Huizing, who made me push limits on both intellectual and logistics grounds resulting in this thesis. Next I would like to thank Mila Ernst and Marijke Oosterbroek for their insights in the case of the Amsterdam Historic Museum and Marlies Nijenhuis-Stelder for checking and editing my English writing. Furthermore, I would like to thank everybody who has shown patience during the time of writing this thesis. Finally, I would like to thank my fellow students and friends, in alphabetical order, Didier van Heemst, Edwin Lodder, Tim de Roode, Brian Sahertian, Gino Sahidi, Jasper de Valk and Niels Verfaille for their insights and boosting morale when situations got thirsty…

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Introduction

For decades the body of literature comprising information systems research in general and information systems development in particular, has been based upon concepts and theory derived from the fields of science concerned with economics and business administration. Antecedents, uses and effects are commonly expressed in measurable, material value, e.g. in terms of costs, profits, time and market share. This makes perfect sense considering the history of information systems, initially mostly used in large enterprises.

This focus on material value is widely used and therefore it makes perfect sense to measure performance of a process in terms of costs and time required to 'get things done'. The results or outcomes of implemented information systems are often expressed in terms of profit or the capability of sustaining competitive advantage by being cost effective. Material value, an umbrella term used to refer to things like costs, profits, time and market share, is highly embedded in the way information systems are described, designed, developed, used, and evaluated, tending to suppress any other way to measure or experience value with regard to information systems.

The primary goal of this thesis is to explore what it would mean if a broader concept of value could be applied to existing themes in literature comprising contemporary information systems research. This master thesis is not aimed at denying or invalidating the body of existing literature; most of the publications contain useful and valuable insights. An important part of this thesis addresses the issue of what a broader concept of value may be and what its theoretical underpinning could be. A particular focus on innovation and information systems development is used to emphasize the nature of information systems in general: it tends to change the way we work, and moreover the way we live.

Over the last decade information systems have evolved beyond the boundaries of enterprises and have become an integral part of our daily lives. The examples are numerous and diverse: social networking websites, online international dating and marketplaces, and even virtual worlds where people can hang out. In addition, public organisations explore the possibilities information systems provide to reach out to people beyond the original reach of any museum, library or city council. Hence, the role information systems have in contemporary society can use a concept of value beyond that of economics and business administration.

1 Theory built upon material value

In the first chapter of this study I will demonstrate the need for this research, by analysing existing literature and attempting to determine what the focus on value is. If we speak of the development and use of information systems, we can build upon a vast body of literature. During the last decades, literature regarding information systems development (ISD) has developed significantly. Contemporary ISD literature forms a theoretical foundation taking into account people, business, computer systems, institutional context and the relations among these. Much attention is devoted to the development and implementation of new information systems. Information systems are developed and implemented for different reasons, including: market expansion, cost reduction, more efficient collaboration and the decentralisation of information and work.

The value of ISD in existing literature is very commonly expressed in terms of material value, directly relating value to more profit, larger market, more efficiency and cost reduction. Little research however explicitly addresses immaterial aspects of ISD, even while it can be argued that information systems affect and influence our daily work and life, beyond terms of material value. Before I can continue to explore what a broader concept of value may be, and what the possible implications are for contemporary IS science, I will discuss what contemporary literature is about and what the possible shortcomings of the focus on material value may be.

Few scholars have raised the important question of whether information systems (IS) are contributing to the creation of a better world (Walsham, 2001). Recent research has revealed that this question is largely ignored by IS researchers whose dominant concern is whether or not the potential material benefits of technology are being realized by its application (Purki, 2007). In this chapter I will attempt to reveal the focus on material value and free the way for an application of a broader concept of value.

1.1 Literature research

It is well established that MIS Quarterly is the number one ranked IS journal (Mangematin & Baden-Fuller, 2008; Rainer & Miller, 2005; Lowry et. al., 2004; Katerattanakul et. al., 2003; Peffers & Tang, 2003; Mylonopoulos & Theoharakis, 2001; Whiteman et. al., 1999; Hardgrave & Walstrom, 1997; Walstrom et. al., 1995). The editorial objective of the MIS Quarterly is the enhancement and communication of knowledge concerning the development of IT-based services, the management of IT resources, and the use, impact, and economics of IT with managerial, organisational, and societal implications. I therefore safely assume that this journal will contain publications that are leading for IS in general and ISD in particular. After selecting a vast number of publications over a longitudinal period, important themes

can be identified by grouping and summarizing each individual publication. The derived themes will be used throughout this study to explore how a broader concept of value may affect current theory. Before moving on to a full discussion of each theme, I will first elaborate on how each publication was selected and grouped into themes.

1.1.1 Longitudinal period of fourteen years

The initial goal of this literature research is to prove that current literature inadequately addresses immaterial aspects of value with regard to ISD. Before defining immaterial aspects of value, comprising a broader concept of value, I will identify how each theme is primarily concerned with material value, an umbrella term that I use to refer to things like profits, costs, time, market share, efficiency etc. By selecting publications in MIS Quarterly from the last fourteen years, it becomes possible to identify prominent themes in IS literature. By discussing these themes, a clear overview of the literature can be created, including its possible shortcomings with respect to immaterial aspects of value. The period of fourteen years was determined after an initial analysis of well-known important events in the IS field. For instance, Microsoft launched Windows 95 in 1995, opening possibilities for application of mass oriented IS applications. Also, at the end of the twentieth century and the beginning of the new millennium, the rise of the World Wide Web and the "dotcom" crisis seriously affected the IS field. In addition, it must also be noted that all titles and abstracts of publications dating from the summer of 1994 are available for free at the website of MIS Quarterly, allowing everybody to verify the selected sample.

1.1.2 Selection criteria

It is necessary to select articles based upon their subject in order to be able to effectively search through the publications. Not every publication in MIS Quarterly is relevant for the relation of ISD and value in general. Articles were selected if one of the following terms was found in either the title or abstract: *innovation, development, change, creativity, interaction, exchange of ideas, ideation, competence* and *learning*. Articles excluded from the selection where meta-science articles, that had a purely theoretical focus and lacked an empirical component. In the next paragraph I will elaborate why these keywords are useful and relevant to innovation in general and ISD in particular.

An innovation is a new idea, which may be a combination of old ideas, a scheme that challenges the present order, a formula or a unique approach which is perceived as new by the individuals involved (Van de Ven, 1986). Innovation is a network building effort that focuses on the creation, adoption and sustained implementation of a set of ideas among people who, through interactions, become sufficiently committed to implement and institutionalize these ideas, or as formulated by Van de Ven (1986) "to transform them into good currency." It is emphasized that it is a severe mistake to treat an

innovation as if it were a well-defined, homogenous thing that could be identified as entering the economy at a precise date – or becoming available at a precise point in time (Kline and Rosenberg, 1986). Most significant innovations go through drastic changes in their lifetimes, changes that may, and often do, totally transform their impact. Thus, what could be perceived as a single innovation is the actual result of a process of innovation, with many iterations and interrelated inventions. With the increasing competitiveness and hostility of organisational environments, it has been suggested that radical organisational change is increasingly necessary for organisational survival, and that IT can be helpful in that respect (Cooper, 2000). Looking at innovation in general, it is suggested that creativity is required in order to enable new ideas to be generated. In particular, creativity can be important in all aspects of IT development, from requirements definitions through program design (Couger, 1996; Cooper 2000). It has long been recognized that learning is an important factor in the successful development of information systems (e.g. see Ciborra and Lanzara 1994, Majchrzak et. al., 2005). Learning in relation to ISD can be seen as the acquisition of new knowledge that causes changes in the requirements that reflect an enhanced understanding of the technology, organisational and work environment in which the system will operate (Majchrzak et. al., 2005). In an organisational context, competences can be defined as the collective knowledge and capabilities that are embedded in the organisation (Lindgren et.al, 2004). They are central determinants of the organisation's competiveness due to their centrality to customer value, their resistance to imitation and their ability to extend to new (business) applications. In the next section I will describe the selected publications matching the discussed keywords in their title or abstract.

1.1.3 Selected Sample

A total of 95 articles published within a period of fourteen years in the MIS Quarterly journal (September 1994 – September 2008) was selected, a full list of selected article titles can be found in Appendix A. The full text versions of the selected articles were downloaded from either JSTOR.org or EBSCOhost.com. Each article was analysed and annotated using a predefined procedure, identifying the problem statement, research question, most important source, most important conclusion and contribution, suggestions for further research and the locus of value. The latter contains interesting insights in how each article defines their unit of analyses as valuable (for instance, outsourcing leads to personnel cost reduction). The software package 'Papers' by Mekentosj.com was used to organize the associated files and create a database, containing the annotations and a ranking that enabled the easy retrieval of the more interesting articles.

1.1.4 Grouping in themes

It is possible to identify prominent themes in the MIS articles after analysing each individual article by reading and annotating it. The themes were clustered using a summarizing associative technique,

reducing the original number of identified subjects into six more general themes. For instance, the original three specific subjects *implementation, adaptation* and *acceptance* were combined into one single theme. It must be emphasised that this categorisation of the selected articles is only meant for overview purposes, a more detailed discussion of each specific subject is likely to lead to the same conclusion.

1.2 Overview of Themes

After analysing the selected publications, prominent themes in the IS literature can be identified. An overview of these themes is presented in table 1.1. A summary of what each theme represents, can be found in this table. The locus of value indicates how the focus on value in material terms manifests itself throughout the theme. The possible shortcomings that result from this focus are summarised in the third column of table 1.1. In the following sections each theme is further discussed.

Prominent Literature Theme	Locus of Value	Possible shortcoming
Business Process Redesign and Alignment: become able to rapidly iterate efforts to seize opportunities.	Sustainable competitive advantage by being quicker and more cost effective.	The effects of the rapidly iterative opportunity seizing efforts on immaterial aspects, such as customers and loyal customers.
Group Support Systems: supportive IS role for group activity.	Advantage of group support by supporting group memory, parallelism and anonymity.	Determine if Group Support Systems, in fact, support groups considering possible advantages and effects beyond material terms.
Implementation and Adoption: understand why IS implementation and adoption is unsuccessful by applying numerous models and perspectives.	Understand why tremendous amounts of resources are wasted in unsuccessful IS implementation and adoption.	Inadequately identifying possible (immaterial) input variables or conditions leading to successful IS implementation and adoption.
Management and Control: Orchestrating ISD that it leads to success.	Achieve competitive advantage by being successful with ISD through letting users participate in the process.	Inadequate understanding of what causes the involvement of users to be beneficial for ISD success.
Knowledge Sharing + Contribution: understand and support knowledge dynamics to foster innovation.	Competitive advantage by being innovative through supporting the knowledge dynamics within an organisation.	Contribution and the dynamics of knowledge cannot fully be addressed in terms of material value, but an alternative is not extensively addressed.
Inter-Organisational Knowledge Sharing: understand the dynamics of knowledge across organisations	Achieve competitive advantage by forming knowledge alliances by combining resources and the	This theme tends to present knowledge alliances as a simple aggregation of individual expertise

	knowledge required to use these resources to develop and commercialize new products and services.	and knowledge, inadequately addressing possible difficulties when this knowledge and expertise is combined.

Table 1.1: Overview of prominent themes in MIS literature and their value

1.2.1 Business Process Redesign and Alignment

The first theme derived from the analysis of fourteen years of MIS Quarterly is Business process Redesign and Alignment. Business Process Redesign (BPR) is about transforming business processes to remain competitive in the ever increasing turbulent business and IT environment. Besides BPR, business process reengineering, change readiness and process alignment are used in publications to refer to this phenomenon. Change-readiness IT capabilities include two important capabilities of a firm. Firstly, building a highly skilled, empowered and energised IS workforce with an entrepreneurial orientation toward leveraging technological knowledge into business applications. Secondly, enhance competitive agility by delivering IT-based products, services, and business applications within short development cycle times (Clark Et. Al., 1997). Many of these IT-based applications are of the first-mover type that could surprise the competition and potentially alter industry practices. Agility, or the ability to detect and seize market opportunities with speed and surprise, is considered to be an imperative for business success as contemporary firms face intense rivalry, globalisation and time-to-market pressures. Agility is vital to the innovation and competitive performance of firms in contemporary business environments (Sambamurthy Et. Al., 2003). Firms are increasingly relying on information technologies, including process, knowledge and communication technologies, to enhance their agility. It is emphasized that information technology investments and capabilities influence firm performance through three significant organisational capabilities (agility, digital options and entrepreneurial opportunity alertness), and strategic processes (capability-building, entrepreneurial action, and co evolutionary adaption). Among other empirical evidence, projects with major payoffs are described, reducing operating expenses by 42 percent, improved cycle times by 100 percent, higher customer satisfaction by 50 percent, quality improvement of 75 percent, saving more than $100 million dollar in an international corporate context (CIGNA Corporation, Caron Et. Al. 1994). It is emphasized that BPR does not occur overnight; it is an ongoing process of improvement, involving multiple trials and iterations. The implication for IS managers is, that momentum of improvement work comes from carefully matching improvement opportunities with existing levels of skills and expertise (Harkness Et. Al., 1996). In order to sustain the competitive advantage achieved through strategic position, firms must create this alignment between their operational activities and structures that complement their strategies. Alignment is important because individual activities in firms can often affect one another in ways that either strengthen or diminish their joint effects. When activities mutually reinforce each other and are consistent with the firm's strategies, competitors cannot easily imitate them. (Porter, 1996; Slaughter Et. Al., 2006). Improvement work should be orchestrated in such a manner that current projects

provide the necessary staging for more complex and higher impact process activity. There is a need for a process vision to integrate improvement work and provide a basis for planning. This is best illustrated by a quote of by Dr. Amar Bose, a professor of engineering and computer science at MIT and founder of BOSE corporation: *"It's not that we're going to "do" total quality, it's just that we're on an endless journey of improvement".*

The *locus of value* in Business Process Redesign and Alignment is the achievement of sustainable competitive advantage by rapidly iterating efforts of seizing opportunities, through organisational agility and process alignment. There is a strong focus on internal organisational analyses and measuring outcomes in competitive advantage by being quicker and more cost effective than competitors; the possible immaterial impact of BPR is ignored.

1.2.2 Group Support Systems

The theme of Group Support Systems (GSS) is the second theme derived out of fourteen years of publications of MIS Quarterly. GSS are systems aimed at supporting collaboration of individuals by making the decision process more efficient and reducing the dependency of time and location. Some articles use the more specific term Group Decision Support System (GDSS), while referring to the same phenomenon. A GSS is defined as an integrated combination of specialized hardware, software and procedures to support group activity. (Zigurs & Kozar, 1994). With regard to decision-making processes, the exchange of information is the key difference between individual and group decision-making - and the key element of group decision-making. The fundamental purpose for using groups to make organisational decisions is to enable a more complete exchange and consideration of information and individual preferences about decision alternatives (Dennis, 1996). In order to reach a group decision, participants engage in three activities simultaneously: information recall (either from memory or notes), information exchange (either giving or receiving information), and information processing (actually using the information: assessing the cognitive and social implications and storing it in memory). Three GSS components affect information exchange and use: parallelism, group memory, and anonymity (also see Nunamaker, et. al. 1991). Firstly, parallelism is the capability of all participants to enter information at the same time. Parallelism from GSS use improves the exchange of information by increasing the amount of both common and unique memory. Secondly, group memory means that all remarks typed into the computer are stored so that participants can refer to them later in the discussion. The third component is anonymity; participants make contributions without attaching their names, which may motivate them to participate differently. Anonymity may reduce the reluctance to contribute information that contradicts the dominant group preference (Dennis, 1996). It was found that GSS groups exchanged more information than non-GSS groups. However, participants in GSS groups were less likely to have actually used the information they exchanged, and it took longer to make decisions (Dennis, 1996). While most GSS research has focussed on single-session studies and

ignored the effect of time on group processes and outcomes, the article of Chidambaram (1996) enlightens GSS from a longitudinal perspective using Social Information Processing (SIP) theory. SIP proposes that the restrictiveness of the computer medium, while hindering relational intimacy initially among unfamiliar participants, will dissipate over time. It is empirically confirmed that humans, being remarkably resourceful, will - given time and despite hurdles - find imaginative ways to transform the GSS structures (anonymity, simultaneity, electronic recording and display, process structuring) to fit all their needs, including socio-emotional ones Chidambaram (1996). There is not a definite conclusion or theory regarding GSS, despite its common reoccurrence in MIS Quarterly. For a given task and group, the relevant performance measure may vary, whether this be real-life organisational tasks or in experimentally controlled situations.

The *locus of value* in Group Support Systems is located at the supportive role to group activity by providing advantage in parallelism, group memory and anonymity. The discussion of whether GSS are, in fact, supporting group activity, and how this might be accomplished, seems to be the leading concern of the authors. Current GSS research is focused on exchange of information, use of information, roles, task and technology. Little attention is paid to immaterial aspect with regard to GSS, including possible difficulties with storing and retrieving knowledge by different group members; it appears that codified, saved, information can be universally understood by everybody.

1.2.3 Implementation and Adoption

The third theme derived from the analysis of publications is a widely discussed one. The theme of Implementation and Adoption is aimed at explaining successful IS implementations, by focussing on the level of IS adoption among users. The presence of computer and information technologies in today's organisations has expanded dramatically. Some estimates indicate that since the 1980s, about 50 percent of all new capital investment in organisations has been in information technology (Westland and Clark, 2000). Yet, for technologies to improve productivity, they must be implemented, accepted and used by employees in organisations (Venkatesh et. al. 2003). There are several types of IS that are discussed with regard to successful implementation, for instance Electronic Data Interchange (EDI) systems, Expert Systems (ES), Enterprise Resource Planning (ERP), Groups Support Systems (GSS) and video teleconferencing (e.g. see Iacavou et. Al. 1995; Teo et. Al. 2003). Explaining user acceptance of new technology is often described as one of the most mature research areas in contemporary IS literature (see also Hu et. al. 1999, Venkatesh et. al. 2003). Numerous models are used to explain IS acceptance, including Theory of Reasoned Action (TRA), Technology Acceptance Model (TAM), Motivational Model (MM), Theory of Planned Behaviour (TPB), Combined TAM and TPB (C-TAM-TPB), Model of PC Utilisation (MPCU), Innovation Diffusion Theory (IDT) and Social Cognitive Theory (SCT); for a full discussion and comparison of these models see Venkatesh et. al. (2003), who emphasise that there is a need for a unified model. The numerous perspectives on the subject, including perspectives

using individual cognitive attributes, role of management, boundary spanning objects and network pressures, reflect the maturity of this theme. For instance, it is emphasized that differences in cognitions (e.g. thoughts, perceptions and constructed understandings) among users, designers and implementers are critical determinants of implementation success (Griffith and Northcraft, 1996). The role of management support has been identified as a critical factor (Sharma and Yetton, 2003). Organisational routines are underpinned by stable patterns of interdependencies that involve exchanges of materials and information that are essential to perform organisational tasks. Patterns of interdependent behaviour pose a barrier to successful implementation of IS innovations. Successful implementation of IS innovations with high embedded levels of task interdependence typically requires significant changes to the existing institutional context. Metastructuration actions taken by managers to institute, support and legitimise the required new institutional context are therefore critical to successful implementation (Sharma and Yetton, 2003). A different perspective on this matter is the sociological approach by focusing on boundary spanning. This approach focuses on the different kinds of power individual agents have to create boundary objects-in-use to improve IS implementation, including economic capital, cultural capital, social capital and symbolic capital. Some agents partially transform their practices in local settings to accommodate the interest of their counterparts. While negotiating the new joint field, these agents become boundary spanners-in-practice who produce and use objects that become locally useful and which acquire a common identity (Levina and Vaast, 2005). In conclusion, the theme of implementation and adoption is vast and diverse, providing multiple valuable perspectives and models.

The *locus of value* in Implementation and Adoption theme is located at understanding why some IS implementations and adoptions are successful while others are not. Instead of defining success, most publications refer to IS implementation failure, which is often illustrated by numerous examples and case studies. Summarising from the publications, IS implementation and adoption success could be defined as being able to integrate an IS into an existing organisational context where users adopt the system into their routines, and ultimately experience the IS benefits. Despite the fact that this theme is widely and thoroughly discussed, little attention is paid to the immaterial aspects with regard to implementation and adoption.

1.2.4 Management and Control

Directly related to the preceding theme, this fourth theme, Management and Control, is about orchestrating ISD in such a manner that it results in success. Built upon the descriptive cases and models, this theme focuses on ways to organize ISD. Several publications discuss methods for controlling and organizing successful ISD. Prototyping, for example, is suggested as a mechanism for improving the effectiveness of analysis and design in loosely structured, high technology development projects, needed in adaptive information systems, which are required to be able to adapt to rapid

changes in turbulent environments (Baskerville and Stage, 1996). Prototyping alleviates many of the practical problems that arise in requirement definition and improves design effectiveness by integrating users directly into the design process. Prototypes provide users with a concrete understanding of the proposed IS. It is emphasized that the use of an effective management approach would facilitate control of prototype development by providing practical mechanisms for defining expectations, assigning resources, signalling pitfalls, and measuring progress (Baskerville and Stage, 1996). The importance of user participation in the system development process has been widely recognized in the literature (e.g. see Ives and Olson, 1984, McKeen et. al. 1994). Prototyping is expected to improve systems quality by: (1) providing a more accurate and complete assessment of user information requirements; (2) providing expertise on the organisation the system is to support, expertise usually unavailable within the ISD group; (3) avoiding development of unacceptable or unimportant features; and (4) improving user understanding of the system. It is assumed to increase user acceptance of IS by: (1) developing realistic expectations about system capabilities; (2) providing an arena for bargaining and conflict resolution about design issues; (3) fostering system ownership by users; (4) decreasing user resistance to change; (5) and committing users to the system. For a in-depth discussing of these benefits see McKeen et. al. 1994. It is strongly stated that the impact of user participation in system usefulness is not a simple bivariate relationship as might be suggested. Apparently, while user participation is in general an important factor, it is certainly not the sole determinant of user satisfaction (McKeen et. al., 1994). Hunton and Beeler (1997) augment the model of user participation and involvement proposed by Hartwick and Barki (1994). This model reflects two antecedent factors: user involvement and attitude. User involvement reflects subjective psychological beliefs regarding the importance and personal relevance of the system to the user. User attitude represents affective or evaluative feelings toward the system. It is suggested that higher levels of user involvement and attitude concerning a proposed system should lead to an increased desire to participate in development activities (Hartwick and Barki, 1994). Research findings indicate that user participation can be effective, particularly when users perceive a noticeable degree of instrumental control over the decision outcome. Firstly, an important antecedent condition leading to a successful participation strategy seems to be the user's desire to participate in the development process. Users involvement is a key factor influencing desired participation. Secondly, even in situations where user involvement is relatively high, low self-efficacy perceptions may inhibit the user's desire to participate in the development activities. Thus, it can be concluded that a successful participation strategy is one that maximizes the user's instrumental control over the proposed system (Hunton and Beeler, 1997). It is argued that new IT knowledge is created at the confluence of business expertise and technical mastery (Nambisan et. al., 1999). Evidence from high tech industries indicates that technology users can be a highly promising source of innovation (e.g. von Hippel 1978, 1986, 1988). There is the notion that users can play a crucial role in initiating IT innovations, especially those that involve the integration of IT with the core business technology of the firm (Nambisan et. al., 1999). This can be elaborated by the theory of organisational knowledge creation by Nonaka and Takeuchi (1995). At the core of their theory is the notion that there is a distinction between tacit knowledge - that is personal, context-

specific, and difficult to articulate and communicate - and explicit knowledge - that can be transmitted from one source to another in a systematic manner and it is relatively objective. The significant business understanding, which exists primarily at the user level, can be assumed context-specific and thus difficult to articulate and communicate. This tacit knowledge must go into system conception. Therefore successful strategic IT innovations often emerge from grassroots-level activities (e.g., end-user hacking, prototyping) in user units, rather than from the application of rational planning models (Ciborra,1991). By virtue of their business insights that may not be available to IT professionals, users have the potential to be significant actors in the innovation initiation process. Overall the theme of Management and Control consists of a vast body of literature with different perspectives and suggestions on how successful ISD should be organized.

The *locus of value* at the Management and Control theme is located at finding the best way to orchestrate ISD to achieve sustained competitive advantage by fostering innovation in a pro-active manner. By paying attention to users, new innovative ideas may be identified and used to gain advantage. This advantage is expressed as a necessity to innovate in order to survive as (commercial) organisation in a turbulent environment, instead of something related to create immaterial value.

1.2.5 Knowledge Sharing and Contribution

The fifth theme derived from the literature analysis is the theme of Knowledge Sharing and Contribution. It provides insights and perspectives on the knowledge dynamics within groups and organisations, used to understand management challenges for successful ISD. The IS group's ability to effectively work with diverse functional groups can be a major factor in both IS and organisational performance (see Henderson, 1990; Keen, 1988). It is emphasized that trust and influence between diverse groups is an important antecedent to achieving cross-functional shared knowledge (Nelson and Cooprider, 1996). Effective shared knowledge can be viewed as a synergy between groups. This synergy is defined as mutual understanding and respect between groups (Nelson and Cooprider, 1996). Shared knowledge is achieved through the mechanisms of mutual trust and influence between these groups. Empirical results show that shared knowledge mediates the relationship between IS performance and trust and influence and that increasing levels of shared knowledge between IS and line groups leads to increased IS performance (Nelson and Cooprider, 1996). Innovation can be described as a knowledge-intensive emergent process (Markus et. al., 2002). Emergent knowledge processes (EKP) are organisational activity patterns that exhibit three characteristics in combination: "deliberations" with no best structure or sequence; highly unpredictable potential users and work context; and information requirements that include general, specific, and tacit knowledge distributed across experts and non-experts. The unpredictable users involved in the EKP is best illustrated by Mintzberg's (1994) description of strategic planning as "big strategies growing from little ideas", in strange places at unexpected times (Markus et. al., 2002). Thus, almost anyone in an organisation (e.g., line managers,

strategic planners, IS specialists) could initiate the EKP (Markus et. al., 2002). EKP require knowledge and expertise in applying the knowledge. In EKP, knowledge is distributed across many different people (Hutchins 1991, Markus et. al. 2002). Because knowledge is distributed, these people require knowledge sharing. The role of technology in knowledge sharing is described by Griffit et. al. (2003) as a supportive role. Technology may provide a means of structuring teamwork, enhance the information available to the team, and/or provide a communication system. Technology may "informate" the work process, creating information where it did not exist before. That is, technology may go beyond mere automation of the task, for example, by providing an information stream about the task and its interrelationships (Griffit et. al., 2003). In the context of electronic networks of practice, Wasko and Faraj (2005) investigated why individuals help strangers, since there is no immediate benefit to the contributor, and free riders are able to acquire the same knowledge as everyone else. Empirical research indicates that people contribute their knowledge when they perceive that it enhances their professional reputations, when they have the experience to share and when they are structurally embedded in the network Wasko and Faraj (2005). Surprisingly, contributions occur without regard to expectations of reciprocity from others or high levels of commitment to the network. Other empirical results reveal that knowledge self-efficacy and enjoyment in helping others significantly impact Electronic Knowledge Repository (EKR) usage by knowledge contributors. An EKR is a key technological component of a knowledge management approach (Grover and Davenport, 2001) concerned with knowledge codification. In this context knowledge management is defined as "a systematic and organisationally specified process for acquiring, organizing, and communicating both tacit and explicit knowledge of employees so that other employees may make use of it to be more effective in their work" (Alavi and Leidner, 1999). Contextual factors moderate the impact of codification effort, reciprocity and organisational reward on EKR usage, respectively. It can be seen that extrinsic benefits (reciprocity and organisational reward) impact EKR usage contingent on particular contextual factors whereas the effect of intrinsic benefits (knowledge self-efficacy and enjoyment in helping others) on EKR usage are not moderated by contextual factors. (Kankanhalli et. al., 2005). The loss of knowledge power and image do not appear to impact EKR usage by knowledge contributors. Kankanhalli et. al. (2005) employ Social Exchange Theory (SET) on this phenomenon. SET assumes the existence of relatively long-term relationships of interest as opposed to one-off exchanges. They emphasize that knowledge contributors are likely to work on the assumption of relatively longer-term relationships of interest. Contextual factors can be derived from social capital theory, where social capital refers to the resources embedded within networks of human relationships. Three aspects of social capital that can define the context for knowledge exchange are trust, norms and identification (Kankanhalli et. al. 2005). Trust, norms, and identification can be considered as social capital since they are organisational resources or assets rooted within social relationships that can improve the efficiency of coordinated actions. Summarizing, the theme of Knowledge Sharing and Contribution emphasizes the need for knowledge sharing among people involved with innovation, including examples of technological components proclaimed to support this.

The *locus of value* of the Knowledge Sharing and Contribution theme is located at managing the organisation in such a manner, that novel ideas can be nurtured into innovations, and that the evolving knowledge dynamics around innovations can be understood and supported. While this description of value does not directly relate to explicit (material) value, most publications *do* describe the necessity for knowledge sharing in terms of competitive advantage by fostering innovation, thereby failing to address immaterial value.

1.2.6 Inter-organisational Knowledge Sharing

The sixth and final prominent theme derived from the literature research is the theme of Inter-organisational Knowledge Sharing. It is aimed at understanding the dynamics of knowledge across organisations and the vital value knowledge has with regard to sustainable competitive advantage and knowledge alliances. The need for continual value innovation is driving supply chains to evolve from a pure transactional focus to leveraging inter-organisational partnerships for sharing information (Malhotra et. al., 2005). Supply chain relationships are going beyond operational efficiency and are being structured to pursue higher-order goals such as understanding new market dynamics, discovering new partnering arrangements to provide greater customer value, and learning from partners to achieve long-term competitiveness (see Eisenhardt and Schoonhoven, 1996; Malhotra et. al., 2005). Inter-organisational relationships have been recognized to provide two distinct potential benefits: short-term operational efficiency and longer-term new knowledge creations. Research has examined inter-organisational relationships as a source of long-term learning in the context of research and development joint ventures, in consortia, and in alliances. Automated IT-based information exchange systems that are being deployed between business partners (e.g. Electronic Data Interchange) are identified as sources of short-term operational efficiency. For a full overview of these inter-organisational systems and their benefits see Malhotra et. al. (2005), who conclude that with changing business environments, value is no longer created within the boundaries of a singe firm, but occurs instead at the nexus of relationships between a variety of parties that contribute to the production function. In contemporary economy, sustained competitive advantage is not found in the physical products or service procedures, but in advancements in the design knowledge that is used to create these products or services (Van de Ven, 2005). There is an increased focus on the integration of knowledge resources and on knowledge creation in the collaboration with partners for longer-term advantage (Majchrzak et. al., 2000). As a result, "running in packs" is often more successful than "going it alone" to develop and commercialize knowledge-intensive technologies. The design knowledge that is used to create products or services often develops in several locations simultaneously and cuts across the boundaries of firms, industries and nations. In this knowledge-intensive society, technology itself is gaining a new meaning. Initially viewed as a physical artefact, the definition of technology is broadening to include the body of knowledge that is embodied in the design or architecture of the artefact (Van de Ven, 2005). Viewing technology as design knowledge focuses attention not only on

outcomes, but also on how this design knowledge emerges. It is emphasized that managing technological innovation in an increasingly knowledge-intensive service economy requires taking a broader, institutional and political view of information technology and knowledge management (Van de Ven, 2005). Technological innovation is fundamentally a collective action process of building an infrastructure that reduces the time, costs, and risks for each participating member. Knowledge-intensive technologies seldom provide sufficient proprietary benefits for sustainable competitive advantage to individual organisations; instead, they provide collective benefits for cooperative advantage. Developing and commercializing these new products and services require resources that are beyond the capabilities of any one firm.

The *locus of value* of the Inter-organisational Knowledge Sharing theme is located at the emphasis on the higher-order goal to achieve competitive advantage by forming organisational knowledge alliances. By combining resources and knowledge, new products and services can be developed and commercialized. While roughly stated that this theme emphasise that multiple organisations can do more than one, this conclusion is expressed in terms of in competitive advantage and commercialisation of new products and services, bluntly ignoring difficulties or advantages related to other (immaterial) aspects.

1.3 Chances of a broader concept of value

In the preceding sections I have discussed six prominent themes derived from fourteen years of MIS Quarterly, the well-established influential journal in the field of information sciences. The prominent themes were derived for the sake of overview and clarity. Again I emphasize that a more detailed discussion of each individual publication or another categorisation, is likely to lead to the same conclusion. That conclusion is that the aspect of value is mostly addressed in material terms, inadequately addressing value in a broader sense. Most, if not all, publications refer to value in material or monetary terms. This conclusion is in agreement with that of Walsham (2001), who raised the important question whether IS are contributing to the creation of a better world. More recently it was found that this question is still ignored largely by IS researchers whose dominant concern is whether the potential benefits of technology are realised. Thus, as a conclusion, it can be established that a broader concept of value is welcome, and may be able to shed new light on these themes of literature.

2 Research Design

In the preceding chapter I set the scene for this research; the analysis of fourteen years of MIS Quarterly revealed six prominent themes of literature. In this chapter I will describe and elaborate how this research is designed, including a problem statement, research model and research questions. The design manual written by Doorewaard & Verschuren (2007) was used to structure this chapter.

This chapter is divided into two main sections, the conceptual design (2.1) and the technical design (2.2). The former consists of the research goal, research model, research questions and a table with key definitions regarding this research. The latter is concerned with how this research can become a success, addressing the research strategy and the research data sources. The goal of this chapter is to provide a clear indication of what this research is about and how the individual components of this research relate to one another.

2.1 Conceptual Design

The conceptual research design has a coordination role for this research. It addresses the research goal, research model, and research questions followed by a table containing key definitions in the following paragraphs.

2.1.1 Research Scope and Goal

Contemporary information systems development (ISD) happens in a variety of contexts, including commercial enterprises, large industries and electronic commerce. In the recent decade more and more new information systems (IS) have been introduced that are different compared to classic enterprise related IS, for instance social networking websites (e.g. Facebook, MySpace, Flickr). These new IS often have different ideals and goals, and are not bound to organisational boundaries. Following their commercial counterparts, non-commercial organisations, including welfare organisations and public organisations, are involved with the development of new IS. The body of literature comprising contemporary ISD theory is vast and diverse. It has developed significantly, addressing different issues and providing many insights related to ISD. The problem with contemporary ISD literature is that it has a focus on material value, expressing antecedents, uses and effects mostly in tangible, measurable concepts like costs, time, profit and commercial advantage. In order to keep up with the development of IS that are not in a classic corporate context, current literature should broaden its concept of value, expressing antecedents, uses and effects in concepts that are not limited to material value.

Therefore, the *goal* of this research is to augment current literature by identifying and describing a broader concept of value including its implications for literature and practice.

2.1.2 Research Model

The research model (figure 2.1) visually reflects how this research is comprised and how each component relates to others. Each box corresponds with a component of this study, relating to others via the relations indicated by the arrows. On top of each box the corresponding chapter of this document can be found. Consider the box on the right side of the model, recommendations for theory and practice. As the model indicates, these recommendations are based upon a comparison between the results from chapter four and chapter five. In chapter four the broader concept of value, which is established in chapter three, is applied to the prominent themes of literature from the first chapter. Chapter five comprises a case study that includes the application of the same broader concept of value. In the next section the research questions will be formulated based upon this research model.

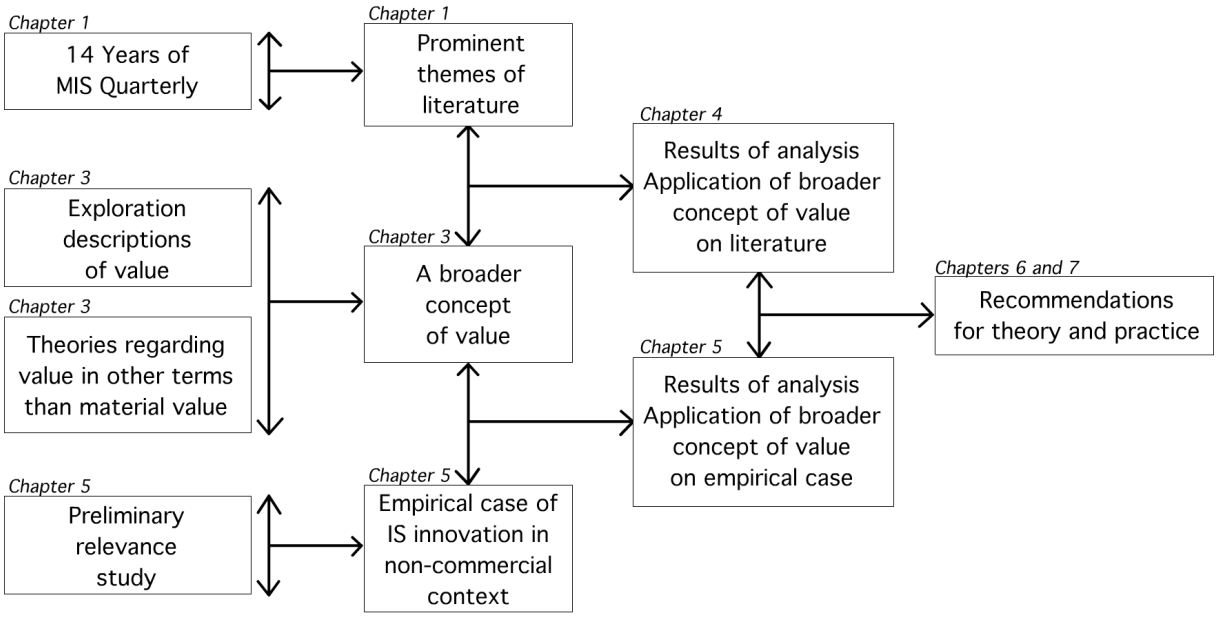

Figure 2.1: Research model conform Doorewaard & Verschuren (2007)

2.1.3 Research Questions

A distinction can be made between the main research question and the supportive research questions. The former is leading for the entire research and is foremost based upon the research scope and goal. The latter are research questions that are derived from the research model presented in the preceding paragraph (figure 2.1). They apply to the horizontal arrows in the model, indicating a necessary answer

in order to move forward. Based upon the research scope and goal, this research is built around the following main research question:

What are the implications for theory and practice if a broader concept of value is applied to contemporary literature of the field of information systems in general and information systems development and innovation in particular?

Supportive research questions help answering the main research question and ultimately will lead to the achievement of the goal that this research has. The supportive research questions are derived from the horizontal arrows in the research model (figure 2.1). There are three stages; each stage indicates the vertical position of the arrows. The first stage involves the initial research, indicating the first 'column' of horizontal arrows. The second stage refers to the application of the broader concept of value, indicated by the middle 'column' of horizontal arrows. Finally, the third stage involves the formulation of the recommendations that will lead to the answer of the main research question.

Supportive research questions stage 1:

- What prominent themes from literature can be derived after analysing contemporary ISD publications?
- What is a broader concept of value?
- What is a relevant case that can be used for the application of a broader concept of value?

Supportive research questions stage 2:

- What are the implications for each literature theme after applying a broader concept of value?
- What can be said about the applicability of a broader concept of value after applying it to a real-life scenario?

Supportive research questions stage 3:

- What recommendations can be formulated after applying a broader concept of value to both literature and practice?

2.1.4 Key Definitions

Throughout this research multiple important terms are used that may not always be self-evident for all readers. For the sake of clarity and the better understanding of this research, table 2.1 contains a list of most important terms that are used in this research. Please note that this table contains a very important distinction that cannot be emphasized enough: although the terms 'immaterial value' and 'immaterial values' appear to be similar, they are quite different. This will be fully addressed in chapters three and four, but it does not harm to consider this from the outset.

Term	Description
Material value	An umbrella term to refer to tangible, economic value, including money, profits and market share.
Broader concept of value	Referring to a description of the concept of value that is not limited to material value, comprised of immaterial value and immaterial values (see chapter 3).
Immaterial value	An umbrella term to refer to intangible, non-economical value, indicating how badly something is desired but based upon other things than material value. This term could be considered the opposite of material value, but it is similar in its purpose (see section 3.2).
Immaterial values	The principles, assumptions, beliefs, culture, that are the basis for understanding and ultimately influential for the actions individuals take (see section 3.3).
Metaphorical Imagination	Forming new understanding by applying alternative metaphors to existing experience; 'experimenting with different worldviews'.
Mutual understanding	Understanding each other beyond using the same literal words by actually comprehending the underlying metaphors that comprise the basis of the conceptual thinking of a person.

Table 2.1: Most important terms regarding this research (in order of appearance)

2.2 Technical Design

The technical design of this study is foremost concerned with the 'how' in respect to the research goal that was described in paragraph (2.1.1). It addresses the research strategy and the required data sources in the following paragraphs.

2.2.1 Research Strategy

The entire research project consists of three major research challenges that are summarized in table 2.2. Per research challenge I have elaborated whether it has a broad or in-depth focus, whether it is qualitative or quantitative and to what extent it is empirically or theoretically based.

Research Challenge	In-depth or wide focus	Qualitative or Quantitative	Theoretical or empirical
Analysis of MIS Quarterly	Wide focus	Qualitative	Theoretical
Constructing a broader concept of value	In-depth	Qualitative	Theoretical
Case study	In-depth	Qualitative	Empirical

Table 2.2: Overview of different research challenges

The *first* major research challenge is the analysis of the fourteen years of MIS Quarterly. Many publications must be analysed, annotated and grouped into prominent themes. The corresponding research strategy conforms to that of a desk research, based upon theory with a wide focus to include

multiple perspectives on the matter. Since the diversity of the topics due to the wide focus, this is analysis has a qualitative character. The *second* challenge is to explore what a broader concept of value is and how this can be underpinned with acknowledged theory. It is a clear example of a qualitative desk research with an in-depth character, since the broader concept of value can only be established when it is based upon a solid foundation. The *third* and final challenge is an in-depth empirical exploration, with a qualitative approach. For this challenge this research uses a case study that is fully described in chapter 5.

2.2.2 Data Sources

The different research challenges that were discussed above require different kinds of data. Per research challenge, table 2.3 provides insights in what kind of data sources are required. A more detailed description of the individual selection methods that were used for the different data sources is included in each corresponding chapter. This section only provides an overview and a brief description of all the data sources used.

Research Challenge	Data source(s)	Access to the data source
Analysis of MIS Quarterly	All titles and abstracts of the publications of fourteen years of MIS Quarterly, and the full text versions of the selected publications.	Titles and abstracts via MIS Quarterly (misq.org) Full text versions via JSTOR.org or EBSCOhost.com.
Constructing a broader concept of value	Randomly selected descriptions of value for an exploration of the term, followed by acknowledged theoretical underpinning.	Diverse randomly selected sources available online for the exploration of the term value, followed by acknowledged books regarding immaterial value and understanding.
Case study	Available (internal) case related documents and in-depth interview sessions with key players.	Internal reference documents and preceding research available augmented with two in-depth interview sessions with Mila Ernst, a key player of the discussed case.

Table 2.3: Overview of data sources per research challenge

The *first* challenge involves the literature study of contemporary ISD theory. Data for this challenge consists of all the titles and abstracts of the publications of MIS Quarterly over the period of fourteen years. After the selection of articles is made, the full text versions of the selected publications are required for further analyses. The *second* research challenge is that of what a broader concept of value may be and what its theoretical underpinning is. This challenge starts with an exploration of different

descriptions of the term value, requiring multiple sources that say something with respect to value, followed by the theoretical underpinning based upon acknowledged books relevant to the subject. The *third* and final research challenge uses data from both available case related documents and in-depth interview sessions with key-players from the described project.

In this chapter I have elaborated on how the entire research is designed and how the individual research components relate to each other. In the preceding chapter I discussed the analyses of contemporary IS literature. The next chapter will continue with the analysis of a broader concept of value.

3 A broader concept of value

After analysing fourteen years of MIS Quarterly and dividing the publications into six prominent themes, it becomes clear that the themes are built around concepts with a focus on *material value*, an umbrella term used to refer to tangible, economic value, including money, profits and market share. Walsham (2001) raised the important question whether information systems are contributing to the creation of a better world. But *a better world* is, to say it gently, a little vague and intangible. What is a better world? Can the value of the world be measured? How does value relate to a better world? Most of all, how can a broader conception of value help improve the publications of MIS Quarterly in specific and Information Systems literature in general?

This chapter aims to address these questions. As an introduction, different perspectives on value are discussed. These randomly selected perspectives on value illustrate that value is often seen and discussed in different ways. As will become clear from these perspectives, a distinction can be made between value and values. Although these terms only differ by one letter, the concepts differ in how they can be described, measured and how they affect society.

3.1 Exploring the term 'value'

As an introduction to a broader understanding of value, not limited to material value, this section discusses different perspectives on value. These perspectives were randomly selected from different sources: both scientific and non-scientific. It must be emphasised that a full in-depth study regarding the perception of value might reveal a more rigor idea of how value is perceived, e.g. by analysing e-economic and social theory. However such a study would require time and efforts beyond the scope of this study, that is focussed to explore what a broader concept of value might mean for contemporary IS theory and practice. The results of the exploration of the term 'value' are summarised in table 3.1. A full list of found perspectives is attached as Appendix B that also includes the original translation in case of a non-English source.

#	Source	Summarized Definition
1	Business Definitions*	In terms of use: the emotional meaning that someone gives to a product or service. In terms of exchange: an estimate of the amount of money that a product or service can make. Value is not the same as price, the latter can differ depending on the situation: a product can be sold for more or less than the actual value.
2	A guide in information management*	Value is an indication for the importance of something; in other words, it indicates how badly someone wants to have something.

3	Policy for Belgian public health, welfare and family*	Value refers to common principles that are considered important within an organisation. Moral values are more or less universal, whereas cultural values differ between organisations and countries. Cultural values within an organisation are closely related to the mission of the organisation.
4	Philosophical Dictionary*	Meaningful ideal or motivation that is leading.
5	Book of Words*	Something that is considered important by a person or group, leading to written or unwritten norms.
6	Dutch Educational Broadcast Organisation (SchoolTV)*	Meaning of a possession or exchange object. Esthetical or personal value of something: importance, weight, priority, number (in mathematics), amount indicated by a meter.
7	Dutch Association of Finance Professionals*	The economic meaning that a physical or virtual object has, mostly expressed in money. The value of an object is not fixed; it depends on the perspective in which it is measured or by the scale being used.
8	Knowledgebase of Statistics*	By observing, a property of an object or by measuring characteristics, the value of a variable can be determined. A variable can hold different values. The collection of all possible values is the range of the scale of the variable. The actual measured or observed value is the outcome.
9	New Oxford American Dictionary	Material or monetary worth of something. Relative worth of something (e.g. bargain). The usefulness in respect of a particular purpose. The relative rank, importance or power. A person's principles or standards of behaviour. The numerical amount denoted by an algebraic term. Consideration to be important or beneficial.
10	Dutch Dictionary (Van Dale)*	Meaning in something, in economic exchange. Meaning in something, in terms of moral, mental and social manner.
11	Philosophy of Values	Inherent and instrumental values are inseparably connected; they are strictly parallel as regards their quantity, quality and other characteristics. Their richness determines the richness of human life. In general, the more values we possess and the higher their qualities and degrees, the richer and happier our lives are to be.
12	The Value of a Rose (Huizing, 2007)	The rose is the object, its economic value is the price, but getting it from that one special person can be priceless. The real value of a rose is in people's interaction, neither in the rose itself nor in its price. It is in the symbolic meaning people imaginatively attach to objects.
13	The Science Of Wealth: A Manual Of Political Economy	When it is an object of man's desire, and can be obtained only by man's efforts. Any thing upon which these two conditions unite will have value; that is, a power in exchange. Value is the exchange power which one commodity or service has in relation to another.
14	Encarta Encyclopaedia	In economics, the worth of a commodity or service measured against other commodities or services. The term generally refers to the total money revenue, or price, for which an item will sell. A distinction can be made between market value as the exchange price of a commodity, and the natural value as the just price. In ethics, value refers to standards or qualities considered worthwhile and desirable.
15	Encyclopædia Britannica	The term “value” originally meant the worth of something, chiefly in the economic sense of exchange value. Later, the meaning of value was extended to wider areas

		of philosophical interest. As theorized, a value is "any object of any interest". A distinction is commonly made between instrumental and intrinsic value—between what is good as a means and what is good as an end. Because “fact” symbolizes objectivity and “value” suggests subjectivity, the relationship of value to fact is of fundamental importance in developing any theory of the objectivity of value and of value judgments.

Table 3.1: Different perspectives on value (indicates a translated source)*

3.1.1 Discussion of Results

In total, 15 different perspectives were selected among various sources, see table 3.1 for a summary and Appendix B for a full overview of the selected perspectives. There are various differences between the perspectives, but there are similarities as well. The oldest perspective is number 13, dating back from 1866, while there are also more recent perspectives, for example number 12, which dates from 2007. Some perspectives were found in well known and acknowledged sources, like the Encyclopædia Britannica, while others are local and less known. There are perspectives from public organisations, like numbers 3 and 6. Some perspectives are can be related to professionals (e.g. numbers 2 and 7), while others are the result of scientific research (numbers 11 and 12).

A distinction can be made between value as an indication of how badly someone wants to have something and values that are considered important in a group. Firstly I will consider *value*. As illustrated by the perspective of “Business Definitions” (#1), value is not the same as price, the latter can differ depending on the situation: a product can be sold for more or less than the actual value. The value of an object (or service) depends on the perspective in which it is measured (#7). In order to be valuable, an object must be desired by someone (#13). Value is an indication for the importance of something; in other words, it indicates how badly someone wants to have something (#2). Value is not purely objective, it is based upon meaning that an individual attaches to something. For instance, it is impossible to quantify a price for the value of a rose given by a special someone (#12). To put it in the words of the Encyclopædia Britannica (#15): because “fact” symbolizes objectivity and “value” suggests subjectivity, the relationship of value to fact is of fundamental importance in developing any theory of the objectivity of value and of value judgments.

Considering *values,* the New Oxford American dictionary describes values as a person’s principles or standards of behaviour (#9). These values are considered important within an organisation; moral values are more or less universal, whereas cultural values differ between organisations and countries (#3). Cultural values within an organisation are closely related to the mission of the organisation. They refer to standards or qualities considered worthwhile (#14). Considered important by a person or group, values lead to written or unwritten norms (#5).

To determine how a broader concept of value can be of any help to IS literature in general and MIS Quarterly in specific, I will go deeper into in both *value* and *values*. Based on the books of Sveiby (1997) and Stewart (1998), I will elaborate on that *value* can be more easily related to economics than *values*. Both authors discuss methods to measure immaterial value, or in the words of Stewart: the new wealth of organisations. Then I will explain in more detail the dynamics of *values*. This can be illustrated in a model to which I refer as the values dynamics model. Based upon recent research, I will focus on the relation between values and material value

3.2 Immaterial Value

Shares in Microsoft changed hands at an average price of $70 during 1995 when their so-called book value was only $7. In other words, for every $1 of recorded value the market saw $9 in additional value for which there was no corresponding record in Microsoft's balance sheet. Sveiby (1997) starts his book by asking what it is about Microsoft that makes it worth ten times the value of its recorded assets. The stock market price of a company is the market's valuation of the shares in the equity. Each share certificate represents a share in the company's equity or book value. When the market price is higher than the book value, conventional stock market theory regards the premium as the market's assessment of future earning potential, a potential that is converted into goodwill if the company is acquired. So there must be something among the company's assets that will yield more than the bank interest in the future. These assets are invisible because they are not accounted for. They are immaterial because they are neither brick nor mortar nor money. Sveiby divides these intangible assets into three parts: employee competence; internal structures: such as patents, concepts and computer systems; and external structures like customer relationships and public image. He talks of worker competence, his definitions embraces factual knowledge, skill, experience, value judgement and social networks.

Stewart (1998)	Sveiby (1997)	Description
Human capital	Professional competence	The individual's knowledge and expertise that contributes to the innovation and renewal of the organisation. The organisation does not own human capital but has the resources, structures and opportunities to cultivate and extract value from human capital.
Structural capital	Internal structure	This is a combination of the technical and organisational infrastructure in documented form, the organisational culture that drives its employees and the corporate image that shapes public perception.
Customer capital	External structure	The relationship with employees, suppliers, faithful customers and cooperative competitors contributes to its wealth.

Table 3.2 Composition of immaterial value out of three key elements according to Sveiby (1997) and Stewart (1998)

Stewart (1998) refers to intangible assets as intellectual capital, which can be compared with Sveiby's immaterial assets (See table 3.2 for a comparison). Intellectual capital can be divided into similar key elements: human capital (Sveiby's professional competence), structural capital (Sveiby's internal structure) and customer capital (Sveiby's external structure). It is essential that all three elements must interact well with one another.

Value resides in the worker and not the technology. According to Sveiby knowledge is not something that can simply be programmed into software and used by anyone. But rather knowledge is deeply embedded in each individual, reflects his or her experience and ability to act and communicate. Sveiby makes a sharp distinction between information and knowledge. Information is meaningless and of low value. It is knowledge that makes sense of information and the best way to impart knowledge is the traditional method of personal transfer. Competence comes from the learning process under guidance of a teacher as in the master/student relationship, person to person. Sveiby bases knowledge within the social context of human interaction so that learning is a continuous process that gives people the capacity to act. Rather than simply defining the difference between information and knowledge, Stewart urges readers to focus on both the semi-permanent body of knowledge (such as a scientist's experience in genetic engineering) and the tools to deliver and distribute this knowledge (such as the scientist's laboratory).

According to Stewart (1998) the immaterial value can be put to use to create wealth. His definition of intellectual capital focuses on the business outcome "create wealth", giving it a pragmatic focus. Since Stewart associates intellectual capital with wealth creation, it has to meet two criteria: it must be proprietary (few people have the same competency) and strategic (it must contribute to the competitive advantage of the organisations that employ them). Some feel that this may be possible in a closed system but, in reality with the exception of selected industries such as the defence industry, intellectual capital can never be kept within an organisation for long. It is transmitted through commercial intelligence, discussion groups on the Internet, professional and alumni networks and conversations.

Measuring the acquisition and use of immaterial value excites great interest and great skepticism. Some argue that adding more measures to the already cluttered financial reports will simply add to the confusion. But, as Stewart argues, it would be a greater mistake not to use measures of immaterial value at all. Undoubtedly measuring immaterial value must be imprecise, but there is a lot of informed guesswork in "hard" numbers too. Enthusiastic experimentation with measurements is the best way to improve them. Both Sveiby and Stewart offer methods to measure immaterial value.

Market-to-book ratio is a quick, easy and reasonable way to measure the immaterial assets of an organisation as a whole. The buyer, not the seller, determines value: Something is worth what someone is willing to pay for it. A company, therefore, is worth what the stock market says: price per share X

total number of shares outstanding = market value, which is what the company as a whole is worth. Book value, which can be found in every annual report, is the equity portion of a company's balance sheet; what is left after all debt has been deducted from it. However market-to-book ratios have some problems. Firstly, the stock market is volatile. Secondly, it does not work when the market value is lower than the book value. Thirdly, companies can (within limits) fiddle with depreciation methods to make the book value appear better or worse than they are. And finally, the result of the calculation produces an amount, which is rather useless (e.g. if an organisation has € 85 million in intangible assets, what does that number mean?). It is better for reliability and usefulness of the difference between market and book value, if it is expressed as a ratio between the two. That way, different outcomes can be compared (e.g. among companies or periods of time). In the next paragraphs I will discuss the individual components comprising immaterial value, as suggested by Sveiby and Stewart, namely, human capital, structural capital and customer capital.

3.2.1 Human Capital

The individual's knowledge and expertise that contribute to the innovation and renewal of the organisation can be seen as human capital. The organisation does not own human capital but has the resources, structures and opportunities to cultivate and extract value from human capital. One way to measure human capital is by focusing on the employees and their attitude, their competences and other qualitative information regarding the role employees take in the organisations. In addition human capital can be measured by focusing on its output, innovation. Ideas are free, they are also an abundant, probably an infinite, resource. As emphasized by Stewart, ideas are also immensely valuable, more valuable than we usually realize. It is not uncommon to think of employees in terms of their pay – their cost, but what is their value? Money talks, but it does not think; machines perform, often better than any human being can, but do not invent. Stewart argues that knowledge is not something that can be easily kept in stock, but it is a capacity to innovate. The relationship between individual learning and an organisation's human capital involves group even more than it does individuals. Stewart refers to the concept of communities of practice that was invented at the Institute for Research on Learning (IRL). Communities of practice can be distinguished from other groups. Firstly, they have history – they develop over time. Secondly, a community of practice has an enterprise, but not an agenda, that is, it forms around a value-adding something-we-are-all-doing. And thirdly, the enterprise involves learning, as a result: over time communities of practice develop customs and culture, or in the words of IRL's Wenger, from an interview with Stewart, "a way of dealing with the world they share". Valuable, hard-to-replace knowledge, the key to competitive advantage, is forged in communities of practice, but they and the human capital they create are no respecters of shareholder value. People can be rented, but not owned.

There are a number of methods to measure human capital in terms of innovation. The simplest way is to measure the percentage of sales attributable to new products or services, and another is to count numbers of new products or of patents. However, as Stewart notes, it is easy to cheat on a simple measure of percentage-of-sales-from-innovation by making trivial changes in an existing product: "Paint it orange, call it new, and bingo, there is innovation." Real innovation should command a premium. Furthermore, the pace of change is so great in some industries that the measure of innovativeness is not whether you are doing a lot of it, but whether you are doing so much so well that you can stay ahead of the industry's fast-falling price curve, as Stewart concludes, "Measure, then, gross margins from new products, and compare them to gross margins from old ones. The former should be substantially higher."

3.2.2 Structural Capital

The internal structure, or *structural capital*, is the flow of knowledge in an organisation: patents, definitions, models, computer systems and administrative processes that support the process of professionals working with customers creating knowledge (Sveiby). It is knowledge that does not go home at night (Stewart). Structural capital belongs to the organisation as a whole. It can be reproduced and shared. Sveiby emphasizes that bigger is not better. It appears that for service organisations, including knowledge organisations, the smaller organisations are more productive. The main reason is that creative people do not prefer to work for large organisations. They will leave or produce below their level. Sveiby's findings confirm this, experienced managers in knowledge organisations acknowledge that smaller organisations are more productive, and indicate that 50 employees is the limit. The emphasized difference between classic industrial organisations and knowledge organisations, thus, is that the latter does not become more efficient as its size increases. In addition to mapping and deepening knowledge, the explicit management of structural capital can increase productivity. Technology is not important, though it seems self-evident that information technology can help manage information: more important is the explicit effort to find useful knowledge, bottle it, and pass it around. Although it is less structured, structural capital can improve the flow of knowledge (Stewart).

To measure structural capital, two kinds of data are required. Firstly, the measures of the accumulated stocks of corporate knowledge; structural capital take many forms and each company's structural capital will be different. Accountants and lawyers have developed many methods to put price tags on patents, processes, trademarks and copyrights, which reaches beyond the scope of this chapter. One way structural capital improves performance is by allowing competence to substitute information for inventory, reducing the amount of capital that is tied up in inventory. Secondly, measures of organisational efficiency, i.e., of the degree to which the company's system augments and enhances the work of its people rather than obstruct them. Bureaucratic drag can be measured with some simple

statistics, Stewart provides some of them, for example: suggestions made versus suggestions implemented and the time-to-market of new products or services.

3.2.3 Customer Capital

The external structure, or *customer capital* is the flow of knowledge with customers and suppliers involving sales, public relations, marketing etc. Sveiby formulates two strategies to deal with the external structure: information strategy and knowledge strategy. An information focused strategy can be recognized by the following traits: limited or no customisation, knowledge sold as derivative, competitive advantage by efficiency and mass volumes; investments in computer technology and people seen as costs. In contrast, a knowledge-focused strategy generates a wider range of immaterial value that provides competitive advantages (Sveiby). Happy customers should exhibit at least one of three measurable characteristics: loyalty (retention rates), increased business (share-of-wallet), and insusceptibility to an organisation's competitor's blandishments (price tolerance) (Stewart). Knowledge is sold as a process and is often very customized. In a knowledge-focused strategy, customers provide immaterial value since they improve the internal structure (structural capital) and improve the employees' competences (human capital) (Sveiby).

Several financial and non-financial approaches are available to measure customer capital, or the external structure. Quality data, information on savings (both parties) from shared processes such as inspection or electronic data interchange, figures on inventories (again for both buyer and seller) and availability (Stewart). Qualitative information can be used to valuate customers' and suppliers' creative contributions, responsiveness, flexibility and the like.

3.3 Immaterial Values

In contrast to immaterial value, as discussed above, immaterial values can be linked to behaviour of individuals or groups. In the initial exploration of perspectives on value (Paragraph 3.1), values were described as principles or standards of behaviour. Immaterial values are considered important, something worthwhile. Some values are more or less universal, while others differ per organisation or culture. When people who are interacting do not share the same culture, knowledge, values and assumptions, mutual understanding can be especially difficult, as emphasized by Lakoff & Johnson (1980). Insight in how immaterial values relate to mutual understanding might prove valuable with regard to the application of any theory, like theories and research results as found in MIS Quarterly.

Even though the idea of mutual understanding sounds obvious and clear, it is rather difficult to explain why people differ in understanding, and moreover how people can accomplish mutual understanding.

What people find important is not solely reliant on their rational objectivist knowledge, but also on their imaginations, intuitions, emotions, values, beliefs, experiences and ambitions (Huizing, 2007). In their classic book, Lakoff & Johnson (1980), propose a theory of the experientialist, aimed at forming an alternative for objectivism and subjectivism. In short, Lakoff & Johnson describe objectivism as the need to understand the *external* world in order to be able to function successfully in it. In contrast, they describe subjectivism as focussed on *internal* aspects of understanding – what the individual finds meaningful and what makes life worth living. The theory of experientialist takes the perspective of man being part of his environment, not as separated from it. It focuses on constant interaction with the physical environment and with other people. It views this interaction with the environment as involving mutual change. One cannot function inside the environment without changing it or being changed by it. Understanding emerges from interaction, from constant negotiation with the environment and other people. Experience is understood metaphorically when one *thing* is expressed in terms of another. Instead of being purely objectively rational, whereas material value is what matters, we are also *imaginatively rational*. From the experientialist perspective, metaphor is a matter of imaginative rationality. It permits an understanding by virtue of imposing gestalts that are structured by natural dimensions of experience (Lakoff & Johnson, 1980). The following sections elaborate on how our conceptual system is based upon metaphors.

3.3.1 Metaphors we live by

Metaphors are persuasive in everyday life, not just in language but also in thought and action. However, metaphors are typically viewed as characteristic of language alone, a device of the poetic imagination. In their classic work, Lakoff & Johnson (1980) emphasize that our ordinary conceptual system, in terms of which we both think and act, is fundamentally metaphorical in nature. They have identified different types of metaphors that will be discussed in the following sections.

Firstly*, structural metaphors* structure the action that we perform in a situation. Consider the ARGUMENT IS WAR metaphor. Our everyday language reflects this metaphor by a variety of expressions, for example: "Your claims are *indefensible*"; "His criticisms were *right on target*"; "You disagree? Okay, *shoot!*". Lakoff & Johnson argue that we do not just talk about an argument in terms of war; we can actually win or lose an argument. The person we are arguing with can be seen as an opponent. One can gain and lose ground, choose strategies and defend his or her position. Although there is, hopefully, no real physical battle, there is a verbal battle, including attacks, defences, counter attacks, winners and losers. Imagine another culture where arguments are structured according to the metaphor ARGUMENT IS DANCE, the participants are seen as performers and the goal is to perform in a balanced and beautiful manner. In such a culture, having an argument with someone would be a totally different experience. The essence of structural metaphors is understanding and experiencing one kind of thing in terms of another.

Secondly, *orientation metaphors* organize a whole system of concepts with respect to another. Lakoff & Johnson refer to them as orientation metaphors since most of them have to do with spatial orientation: up-down, in-out, front-back, on-off, etc. Consider the metaphor HEALTH AND LIFE ARE UP; SICKNESS AND DEATH ARE DOWN. This is reflected by expressions like "He is in *top* shape"; "William *rose* from the death"; "His health is *declining*". Such metaphorical orientations are not arbitrary; they have a basis in our physical and cultural experience. When one is death, it is common to be physically down, just like serious illness forces one to rest in bed. There is an internal systematic to each orientational metaphor, for example, it would be incoherent to say "He *dropped* dead" and "he *fell down* from the dead", the latter is in the wrong orientation when considering that LIFE IS UP. There is an overall external coherence among the various orientational metaphors, thus GOOD IS UP is coherent with specialized orientational metaphors like HAPPY IS UP, STATUS IS UP, CONTROL IS UP. Lakoff & Johnson discuss the observation that our culture's view of what a prototypical member of our culture is like, determines an orientation of concepts within our conceptual system. The prototypical person forms a conceptual reference point, to which other concepts are oriented. This can be elaborated with the notion that people function in an upright position and usually move forward, spend most of their time performing actions, and view themselves as basically good. That creates a basis in our experience to see ourselves more UP than DOWN, FRONT than BACK, GOOD than BAD. The general principle is that the word whose meaning is closer to the prototypical person comes first, making UP-DOWN sounds logical and DOWN-UP strange. The most fundamental values in a culture will be coherent with the metaphorical structure of the most fundamental concepts in the culture. Not all cultures prioritize the UP-DOWN orientation like the Western culture does, there are cultures where balance or centrality is much more important. Lakoff & Johnson therefore conclude that in general the major orientations: up-down, in-out, etc. seem to cut across all cultures, but which concepts are oriented which way and which orientations are most important, varies from culture to culture.

Thirdly, *ontological metaphors* allow us to understand our experience in terms of objects and subjects that enable us to pick out parts of our experience and treat them as discrete entities or substances of a uniform kind. As Lakoff & Johnson elaborate, the orientational metaphors provide a rich basis for understanding concepts in spatial terms; they can only do so much. When things are not clearly discrete or bounded, we still categorize them as such. Such ways of viewing physical phenomena are needed to satisfy certain purposes that we have, like meeting at a street corner. Ontological metaphors serve a variety of purposes and the different kinds of metaphors there are reflect the kinds of purposes served. Consider the worldwide situation on the financial market, where the economies are in crisis. This can be metaphorically seen as an entity via the noun *recession*, reflecting expressions like: "We need to fight the recession", and "The recession is lowering our standard of living". Seeing the recession as an entity enables us to refer to it, identify a particular aspect of it, see it as a cause and perhaps even think that we understand it. Like orientational metaphors, ontological metaphors are often not noticed as being metaphorical, since they are so natural and persuasive in our thought that they are usually

taken for granted. Consider THE MIND IS A MACHINE metaphor, expressions like “We have been working on this issue all day and now *we are out of steam*”; “I am a little *rusty* today” and “He has some *loose wires* in his head”. That last one is a Dutch expression to indicate that someone is acting somewhat uncontrolled or crazy. These metaphors give us a conception of the mind as having an on-off state, productive capacity and a capability to break down, whereas breaking *down* suggest that WORKING IS UP; BROKEN IS DOWN. The reason that ontological metaphors like the MIND IS A MACHINE are an integral part of the model of the mind that we have in this culture, it is the model most of us think and operate in terms of (Lakoff & Johnson).

3.3.2 Understanding by Metaphorical Imagination

Understanding each other can be rather difficult when one does not share the same immaterial values, including assumptions knowledge and culture. Through the negotiation of meaning, such mutual understanding is possible. Metaphorical imagination is a crucial skill in establishing understanding and in communicating the nature of unshared experience. To negotiate meaning, participants must become aware of, and respect both differences in background and when these differences are important. Lakoff & Johnson further elaborate that enough diversity of cultural and personal experience is required to be aware that different perspectives on the world exist and what they might be like. Bending your worldview and adjust the way that you categorize your experience are abilities that are considered to be the essence of metaphorical imagination.

Lakoff & Johnson enforce the Sveiby’s notion that the best way to impart knowledge is personal. Knowledge is based within the social context of human interaction, which is according to Sveiby, a continual process. Lakoff & Johnson elaborate that meaning is almost never communicated according to what they call the CONDUIT metaphor, that is, where one individual transmits a fixed, clear proposition to another by means of expressions in a common language, where both parties have all the relevant common knowledge, assumptions, values, etc. Furthermore, they regard theories based upon this principle as pathetic or even evil, because they omit the crucial things for understanding, and thereby assuming that the fixed message has meaning by itself.

3.3.3 The power to define reality

New understanding of our experience can be given by using metaphorical imagination. Creative and imaginative metaphors can give new meaning to our pasts, to our daily activity, and to what we believe and know. Lakoff & Johnson explain this by several examples, including this one; many of us consider a problem as something that can be represented by the PUZZLE metaphor. Problems are a kind of puzzle that has a correct solution, and once solved, they are solved forever. These metaphor reflects expressions like ‘the pieces coming together’ after finding the ‘missing piece’. It is not uncommon to

see a problem as a puzzle. Now consider the metaphor PROBLEM IS CHEMICAL. In that case the solution of problems could be seen as a large volume of liquid, bubbling and smoking, containing all problems, either dissolved or in the form of precipitates, with catalysts constantly dissolving some problems (for the time being) and precipitating out others. The new insight provided by this metaphor is that problems never disappear utterly and that they cannot be solved once and for all. All problems are always present, however, some may be dissolved and in the solution, and others may be solid. The best approach might be to find a catalyst that makes one problem solve without making another one precipitate out. Since the whole chemical mixture is constantly bubbling and smoking, new and old problems may constantly appear while solving present problems. To live by the metaphor PROBLEM IS CHEMICAL would be to accept it as a fact, and thus defining reality, that no problem ever disappears forever. Seeing the problems like this would make the search for the perfect puzzle solution pointless, instead one should focus on creating and maintaining the most optimal form of the chemical problems, dissolving some, preventing precipitation of others.

It is by no means an easy matter to change the metaphors we live by. First one must recognize the alternative metaphor and its inherent possibilities. Figure 3.1 provides an overview of how metaphors change our conceptual system by constant negotiation of meaning. Awareness of alternative metaphors is the first step, and then one must comprehend his or her experience in terms of the alternative metaphor. Based upon the new perceived reality, the new metaphor enters our conceptual system when we begin to act in terms of it. In turn, this causes our conceptual system to be altered; it affects our current conceptual thinking, providing a basis for further metaphorical imagination.

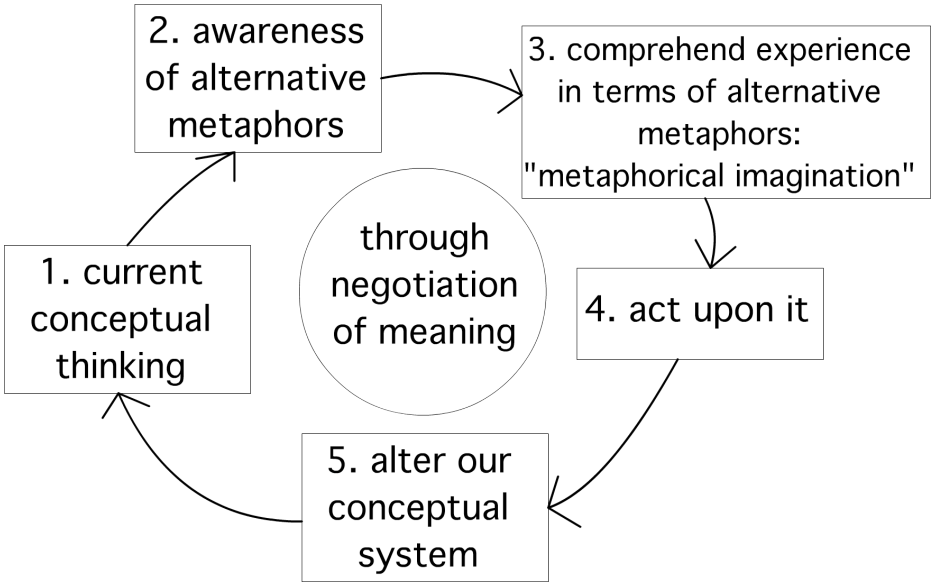

Figure 3.1: New metaphors altering our conceptual system

3.3.4 The dynamics of values

Using the discussed theory of the experientialist by Lakoff & Johnson, the relation between our immaterial values and the actions we make can be explained. Immaterial values include the things we consider meaningful because we understand them by using and choosing metaphors and their inherent characteristics, to structure our daily thinking and doing. It is what we consider important that causes us to understand the world in different ways. The underlying mechanism thus can be elaborated by the negotiation of meaning through constant social interaction. Immaterial values thus influence everything we are and do. As strongly emphasized by Lakoff & Johnson, an objectivistic worldview is limited by its very fundamental assumption that there is such a thing as an external world with objects having meaning by itself. The dynamics of immaterial values, illustrated in figure 3.2, indicate that meaning is not given by an object, but by our understanding of the world, based on what people find important in their lives, which in turn, is not solely reliant on their rational objectivistic knowledge, but also on their immaterial values, including beliefs, goals, culture, ambition intuition, etc. Therefore we are not purely objectively rational, but also imaginatively rational. As Huizing (2007) illustrates, sometimes we want something and 'go for it', we imagine a dream and spend irresponsible amounts of time, money and energy pursuing it.

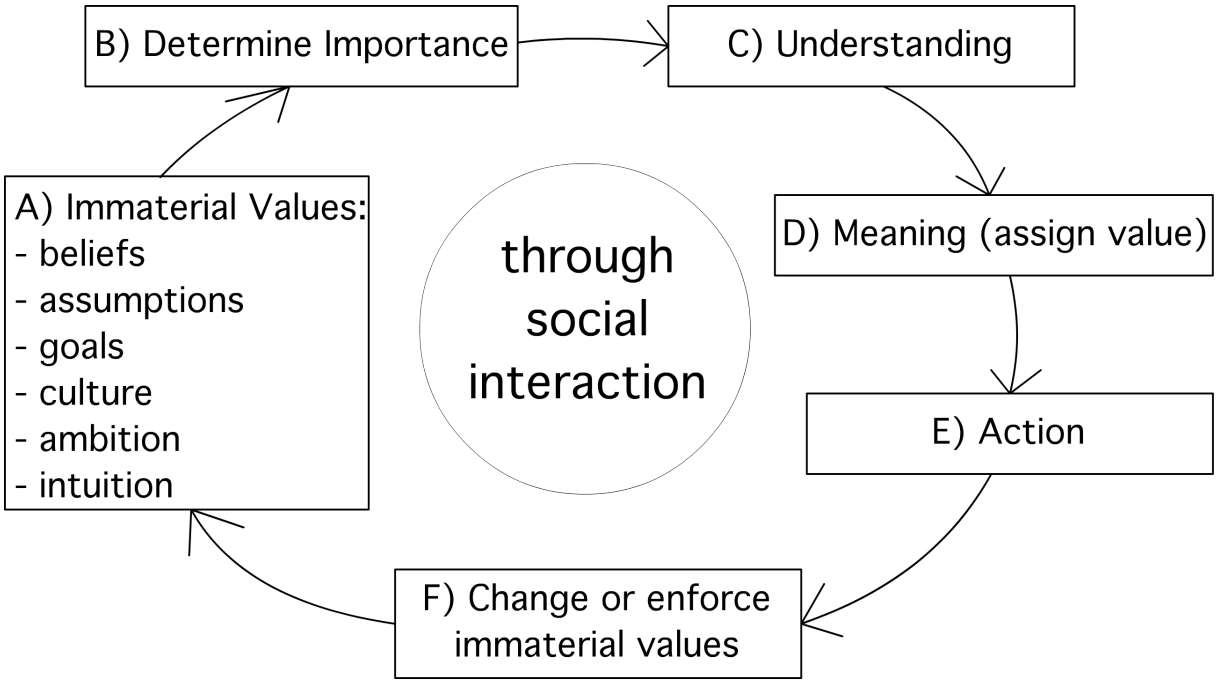

Figure 3.2: The dynamics of values

3.4 Conceptualising a broader concept of value

In the preceding sections both immaterial value and immaterial values were discussed, in this section both concepts will be conceptualised in order to be applied to theory and practice in the following chapters. A generic conceptual model will be used as a basis to conceptualise both immaterial value and immaterial values. A generic conceptual model consists of antecedents, use, and effects. The position of immaterial value and immaterial values in the generic model is addressed based upon the preceding sections. This section concludes with a discussion of both generic models, their limitations and their relation with each other, preparing them for a confrontation with both theory and practice.

3.4.1 Conceptualising immaterial value

According to Sveiby and Stewart, immaterial value is something that can be measured. It is an outcome of the interplay between human, structural, and customer capital. Similar to material value, immaterial value can be set as a goal, can be used to compare and benchmark performance, and using the discussed methods, it can be quantified to some degree. Therefore, it would be most appropriate to position immaterial value as an effect, or output variable, in a generic conceptual model (see figure 3.3).

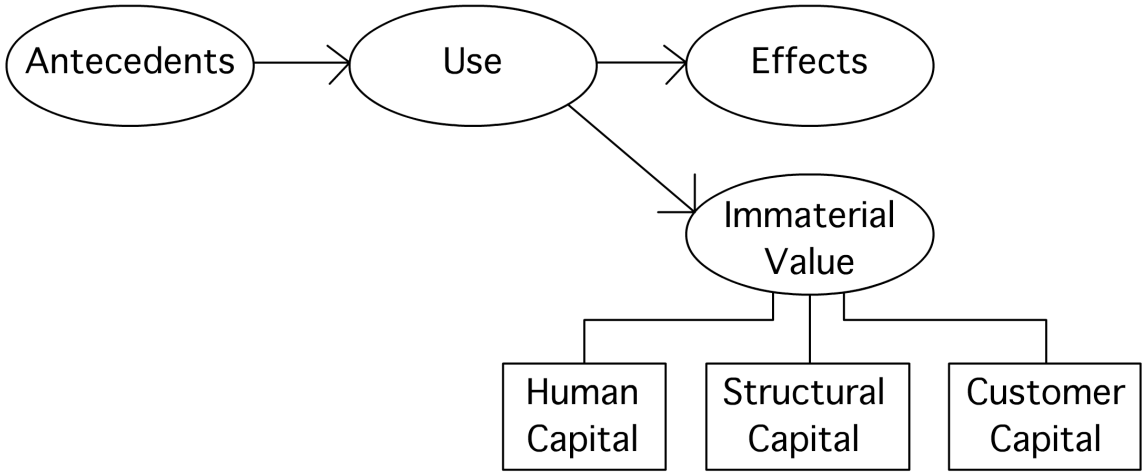

Figure 3.3: Immaterial value as output or effect in a generic conceptual model

3.4.2 Conceptualising immaterial values

The concept of immaterial values provides insight into how actions are influenced by the things people consider important and how people perceive the world they live in. Metaphors can be used to analyse the way people understand their world. Mutual understanding can be achieved when there is a capability of metaphorical imagination. Although one could argue that mutual understanding is not essential for

individuals to collaborate, I consider mutual understanding crucial to appear rational to each other. When mutual understanding is achieved. The term imaginatively rational describes exactly that; choices and actions are based upon immaterial values, the basis for consideration. For this reason it could be considered appropriate that the concept of *immaterial values* is positioned as a *condition* or *input* variable in a generic conceptual model (see figure 3.4).

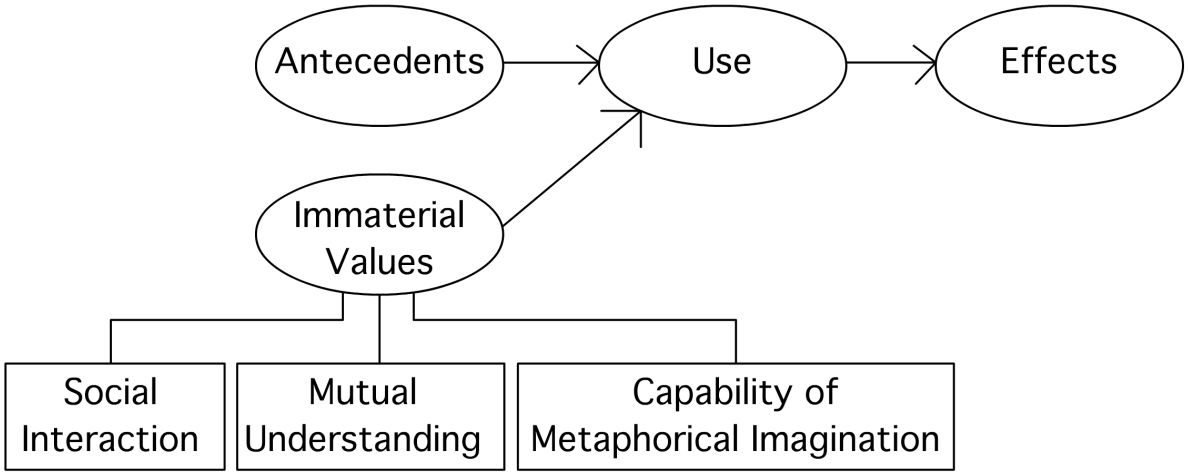

Figure 3.4: Immaterial values as antecedent, or input variable in a generic conceptual model

3.4.3 Discussion

Now consider both conceptual models discussed above: they represent a broader concept of value comprised of immaterial value and immaterial values. Based upon these conceptual models it is possible to select the most appropriate concept of value for theory and practice determined by either a focus on output variables or a focus on conditions or input variables. Both models provide a generic starting point for further analyses. However, before moving on to the analyses of theory and practice, some important remarks must be made with regard to these models.

Both models are limited by their perception of time: they describe a single moment in time. This makes it difficult to adequately illustrate the iterative character of a broader concept of value that is suggested by both social interaction in immaterial values and the interplay between the different kinds of capital in immaterial value. Contrary to what the models now suggest, the positions of immaterial value and immaterial values are not fixed and exclusive over time. For example, customer capital is defined as the relationship with employees, suppliers, faithful customers and cooperative competitors. Customer capital is part of the concept of immaterial value, which was found to be suitable as output variable (section 3.4.1, figure 3.3). But it can be expected that good relations with customers, suppliers, employees and competitors can also function as an input variable causing to better understand one another. The generic models are a good starting point for any analyses but they are not exclusive nor do they incorporate the iterative character of the broader concept of value.

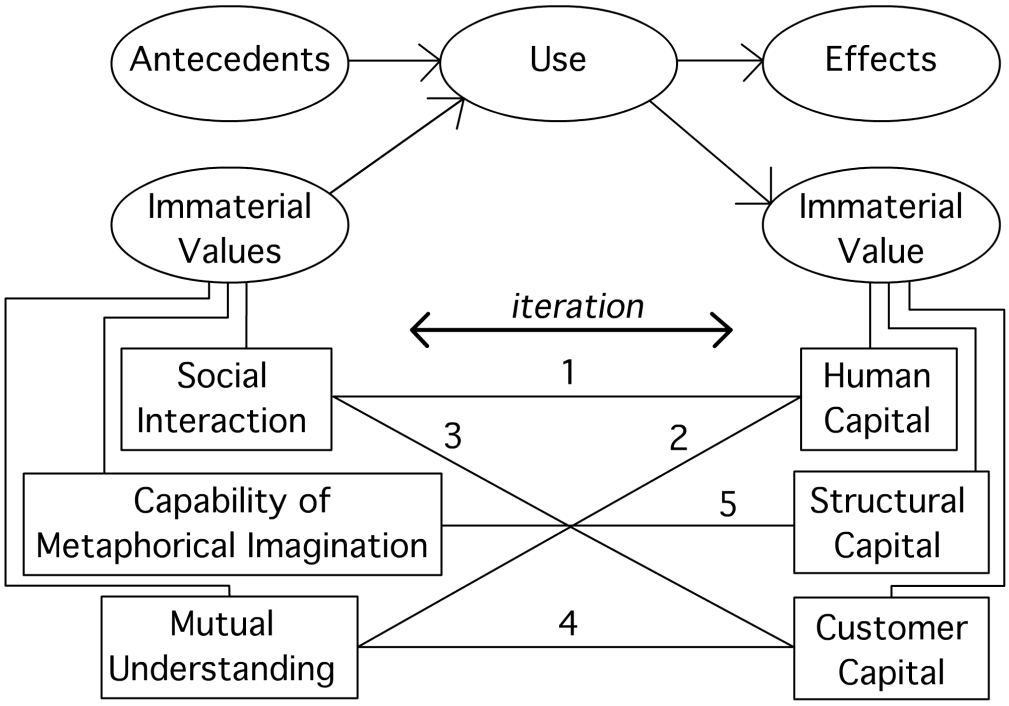

Figure 3.5: Iterative relations (1-5) between immaterial values and immaterial value

If both models of immaterial value and immaterial values are combined, it becomes possible to crosslink key characteristics of both concepts. Figure 3.5 is the combined model that illustrates the iterative relations between both concepts. There are five numbered links between both concepts. The first is the relation between social interaction and human capital. As discussed in section 3.2.1, human capital is the individual's knowledge and expertise that contribute to the innovation and renewal of the organisation. As emphasised by Stewart, learning involves groups, or communities of practice, suggesting some kind of social interaction required to form this knowledge and expertise. In time communities of practice develop customs and culture, they develop a way of dealing with the world they share, establishing mutual understanding (2). Directly related to social interaction is customer capital (3), it includes the relationships with employees, suppliers, and customers. Obviously it can be expected that valuable relationships develop over time, suggesting that social interaction is needed to improve customer capital. It can be expected that good relationships comprising customer capital are related to an increased mutual understanding among employees and with suppliers and customers (4). As discussed in section 3.2.2, structural capital is the internal structure of an organisation, including administrative processes and computer systems. Metaphorical imagination is only possible when the organisational structure permits experimenting with different metaphors (5). New metaphors can alter ones' conceptual system (section 3.3), but it is very difficult to change the metaphors we live by since they are often highly embedded. Organisational and administrative drag, or 'bad structural capital', limits the capability of metaphorical imagination. With the limitations of both generic conceptual models in mind, it is now safe to continue with the application of a broader concept of value to theory and practice in the next chapters.

4 Applying a broader concept of value

In this chapter I will use the six prominent themes of literature from fourteen years of MIS Quarterly to apply the concepts of immaterial value and immaterial values. For each theme derived out of fourteen years of MIS Quarterly, I will first address the stated locus of value and attempt to determine whether the theme is focussed on certain *outcomes* or on a *condition* or *input*. This is useful to determine which broader concept of value, immaterial value or immaterial values, is best applicable. Then I will apply the corresponding concept and its composition. It must be emphasized however that both broader concepts of value, immaterial value and immaterial values, may be applicable to a theme. Unless explained otherwise, only the most applicable concept is elaborated per theme. Each section is concluded by some implications the applied broader concept of value might produce. This chapter is concluded with a discussing of the findings from the following sections.

4.1 Business Process Redesign

Transforming business processes to remain competitive in the ever-increasing turbulent business and IT environment is what Business Process Redesign aims to describe. This is done by enhancing competitive advantage through organisational agility by delivering products and services within short development times along with building a highly skilled, empowered, and energized workforce. The locus of value in this theme is the achievement of sustainable competitive advantage. The business process redesign theme has a focus on outcome. The sustained competitive advantage is often measured in being quicker and more cost effective than competitors.

4.1.1 The concept of immaterial value for business process redesign

The concept of immaterial value is best applicable to the theme of business process redesign, since this focuses on output. Immaterial value is a result of the interplay between human, structural, and customer capital. In this theme, human capital is adequately addressed, e.g. by notions like a highly skilled, empowered, and energized workforce (Clark Et. Al. 1997). Structural capital is less explicitly addressed, but the term agility is used to refer to some kind of necessity to be innovative, or the ability to detect and seize market opportunities. Customer capital is not addressed inadequately, illustrated by the publication by Clark et. al. (1997).

4.1.2 Neglecting immaterial importance of customer capital

Illustrative is for this theme is the vision Clark et. al. (1997) discuss for a change-ready organisation, it involves a skill based 'centres of excellence' (CoE) approach. The CoE organisation design creates distinct roles and processes for conceptualising strategic IT applications, rapidly delivering IT applications and building the requisite IT skill base. They formulated the measurable impacts of the CoE organisation design in terms of customer satisfaction, project delivery (percentage of projects delivered on time) and leadership IT talent base (numbers of contractors used; lower is better IT talent base). The corresponding numbers indicate that after 18 months a significant improvement was established with regard to these measures. CoE organisation design prescribes different groups in the organisation, with different tasks and expertise. In a turbulent and changing environment the authors emphasise that it is important to manage employee anxieties. Individuals react differently to radical change because of their prior experiences. It is important to accommodate these concerns. The authors suggest that empowerment is one way to do this when employees are eager to take personal responsibility for their own skill development and careers. However, not all employees may embrace empowerment well. As Clark et. al. note, special human resource programs may be necessary to handle this, but they do not address what these programs are. In regard to customer relations Clark et. al. explicitly state that the CoE organisation design assumes that client perceptions of business responsiveness do not require intensive client access to and relationships with team members. They even note that some customers from their empirical case study considered this a step backwards in comparison to the original situation where team members were typically assigned to a business unit for long time periods. Ignoring the importance of customer capital with regard to learning form the customers, the authors conclude that the de CoE design established a single-point-for-contact for the client that is totally accountable for the customer relationship. Albeit from providing methods to measure and benchmark human and structural capital, the broader concept of value, that of immaterial value, also identifies the need to better address customer capital in the theme of business process redesign. Valuable questions might be focussed on what it means for any (customer) relation to be sustained in a highly dynamic environment and organisation. The relationships with faithful customers, suppliers, employees and cooperative competitors might be hard to maintain in such a dynamic environment, or on the other hand, may prove to limit the organisations' capabilities to engage in successful business process redesign.

4.2 Group Support Systems

Group support systems aim to improve collaboration of individuals by making the decision process more efficient and reducing the dependency of time and location. The locus of value in group support systems is located at the advantage of parallelism, group memory and anonymity. The theme of group support systems aims to determine whether group support systems are, in fact, supporting the group

activity. Results are measured in terms of the amount of information exchanged, the amount of information used, and the time the decision making process takes. Overall this results in a focus on outputs.

4.2.1 The concept of immaterial value for group support systems

The concept of immaterial value is best applicable to augmenting and analysing the proclaimed effects of group support system usage. Human, structural and customer capital are the components comprising immaterial value. Structural capital is well addressed thanks to the group memory advantage, since all contributed remarks are stored in computer memory. Group support systems provide a way to document and thereby codify the organisational decision making processes. Customer capital, defined as the relationship with employees, suppliers, loyal customers and cooperative competitors, is only partially addressed. The publications within the theme describe certain aspects of customer capital, for instance the ability to exchange information independent of time and location, among members of the group. However, often no explicit elaboration is given of who those members are and why they were chosen. But most of all, human capital is inadequately addressed, the role of group members in regard to information exchange, information usage and learning is reduced to contributing and retrieving information from the group memory on an anonymous base.

4.2.2 Structural capital support systems

The publication of Dennis (1996) is illustrative, describing GSS to provide new opportunities for information exchange that may differ in important ways from non-GSS environments. One of these is computer mediated electronic communication that can augment or replace verbal communication. This electronic communication provides a package of different components, each of which may introduce new dynamics into information exchange and use processes. Dennis notes that previous GSS research has found that GSS can increase a group's use of factual information (i.e. information influence) rather than participants' preferences (i.e. normative influence). However, Dennis conclusion illustrate that group support systems only support structural capital by enabling GSS use enabled groups to exchange more information, it did not help – perhaps even hindered – participants' ability to process it. In short, GSS use can lead participants to more information, but it cannot make them think about it (Dennis, 1996). The broader concept of value, immaterial value, illuminates that group support systems only support certain aspects of collaboration and that it even might obstructs others. To adequately address human capital, information exchange alone is not enough. Information by itself is meaningless; it is knowledge that makes sense of information as emphasised by Sveiby in the preceding chapter. As discussed earlier, the best way to impart knowledge is the traditional method of personal transfer. Knowledge is not something that can be easily stored in a group memory. The proclaimed advantage of anonymity seems to conflict with the ability to establish real relationships, necessary for successful

knowledge sharing or learning from each other, essential for both human and customer capital. Hence, group support systems only support one aspect of immaterial value creation, structural capital, limiting its usefulness to just that.

4.3 Implementation and Adoption

The widely discussed theme of implementation and adoption aims to explain information systems (IS) implementation success by focussing on the level of IS adoption among users. The locus of value in the implementation and adoption theme is located at the understanding why some IS implementations are successful while others are not. Numerous models are discussed in this theme; they are used to explain input variables and conditions leading to successful implementation. Conditions for successful implementation and adoption are obtained from different perspectives on the matter, making this theme focussed on input and conditions.

4.3.1 The concept of immaterial values for implementation and adoption

The concept of immaterial values is best applicable to the theme of implementation and adoption. The concept emphasizes the necessity for social interaction, addressing the issue of mutual understanding and the capability of metaphorical imagination. It is emphasized that differences in cognitions (e.g. thoughts, perceptions, and constructed understandings) among users, designers and implementers are critical determinants of implementation success (Griffit and Northcraft, 1996). Patterns of interdependent behaviour pose a barrier to successful IS implementation as argued by Sharma & Yetton (2003). The interdependency of the actions comprising behaviour makes it difficult to imagine an alternative since that would require significant changes to the existing institutional context. Instead of creating a possibility to imagine another way of understanding and doing things, for instance by metaphorical imagination, management is supposed to push implementation forward into the organisation by instituting, supporting and legitimizing the new institutional context required for the successful implementation. Fortunately, alternative approaches exist as well, in particular boundary spanning. Although it remains a bit intangible, boundary spanning aims to overcome differences in interest by negotiating a joint field, which suggests social interaction leading to a common understanding, although it is not literally addressed this way.

4.3.2 Explanation for critical determinants of implementation success

Griffith and Northcraft (1996) state that past research has underemphasised the role of cognitions in implementations. They have suggested an important role for implementer cognitive frames in the presentation of information during the implementation of a new technology. Frames are the perceptual

sets that direct an individual's critical cognitive processes, including directing what information to attend to and how to interpret that information. Frames invoke selective perception and thus influence how users come to understand a new technology in its organisational setting (Griffith and Northcraft, 1996). The authors elaborate on how differences in cognitions can cause problems for implementers and users. The concept of immaterial values contributes as it provides insight into how differences can be overcome. As elaborated earlier, mutual understanding can be considered important in order to appear rational. This would imply that a focus must be set on facilitating the process of achieving mutual understanding among the people involved. This could be done by explicitly addressing existing metaphors and using new metaphors to imagine what successful implementation and adoption would mean to the people involved. Venkatesh et. al. (2003) identify the need for a unified model to explain implementation success. The model of dynamics of values might prove to be an interesting start to analyse implementation and adoption because it differs from established models like TAM, since it features an iterative social interaction cycle. Although this theme is already vast and thorough, a broader concept of value does provide new insights and explanations on existing problems and findings.

4.4 Management and Control

Similar to the theme of implementation and adoption, the theme of management and control is concerned with how information systems can be put to good use. However instead of focussing on adoption, this theme is focused on development. Different methods for controlling and organizing successful information system development projects are discussed. The locus of value in this theme is located at finding the best way to orchestrate information system development to achieve competitive advantage. Due to the emphasis on how this can be achieved, this theme is focussed on conditions or input variables.

4.4.1 The concept of immaterial values for theme of management and control

The concept of immaterial values is best suited for the theme of management and control. Social interaction, addressing the issue of mutual understanding, and the capability for metaphorical imagination are emphasized by this concept. Prototyping is discussed in this theme as a solution to alleviate many practical problems that may arise in requirement definition and improves design effectiveness by directly letting users interact in the design process (e.g. see Baskerville and Stage, 1996). This can be elaborated as a social interaction process aimed to negotiate a mutual understanding. Although an emphasis on metaphors does not exist, a prototype may function as a tangible object to support the imagination process. Contrary to what the prototyping method might suggests, there is a strong focus on control throughout this theme. Users are often illustrated as mere people who use a given system, suggesting an uneven balance in decision power compared to

developers, management and implementers. This appears to be in conflict with the suggestion that a successful participation strategy is one that maximizes the user's instrumental control over the proposed system (Hunton and Beeler, 1997). By the virtue of their business understanding that may not be available to IT professionals, users have the potential to be significant actors in the innovation process.

4.4.2 The value of a prototype and user participation

The concept of immaterial values provides insight into how prototyping is valuable. Prototyping integrates the users into the information system development process. Baskerville and Stage (1996) state that the advantages of prototyping are widely acknowledged. Systematic use of prototypes relieves many of the problems that occur when information systems development is based on extensive use of specifications. Prototypes provide users with a concrete understanding of the proposed computer system. They eliminate the confusion and potential misunderstanding that originate from the interpretation of abstract specifications and replace this with meaningful and direct communication between systems developers and users (Baskerville and Stage, 1996). In addition to prototyping and other user participation techniques like user toolkits for innovation (Von Hippel; 1978, 1986, 1988), the broader concept of value, immaterial values, provide a method to overcome the differences in insights among involved people like users, management, and developers. Instead of merely providing a solution for practical issues in the design process, the theory of the experientialist (Lakoff and Johnson, 1980) provides an understandable theoretic basis to support this empirical finding. Overall there already exists an understanding that involving end-users is beneficial to information system development success, confirming the emphasis on the necessity for social interaction; in order to letting users, management, and developers understand each other they must interact. Prototyping is a tangible way to support that process, but by applying new metaphors on that same prototype object, the negotiation of meaning can underpin the suggested advantage, since involved users, developers and managers would understand each other better, and acknowledge that one might see and use the proposed system in different ways. A prototype by itself does not have much value, it is the meaning that people attach to it that makes prototyping worthwhile, it becomes something to talk about. Similar to the preceding theme, the theme of management and control consists of many decent and insightful publications, a broader concept of value, immaterial values, may enable future research to augment and underpin existing insights and methods.

4.5 Knowledge Sharing and Contribution

The theme of knowledge sharing and contribution provides insights in the dynamics of knowledge within groups and organisations. The locus of value of the theme knowledge sharing and contribution is

located at managing the organisation is such a manner that novel ideas can be nurtured into innovations, and that the process around innovations can be understood and supported. This theme describes the process of knowledge sharing aimed to elaborate innovativeness as outcome. Therefore this theme has both a focus on conditions or input variables as well as the outcome, namely being successful with innovation.

4.5.1 Both immaterial value and immaterial values

Both broader concepts of value, immaterial value and immaterial values, can be applied to the theme of knowledge sharing and contribution. *Firstly* immaterial values, with a focus on conditions and input variables will be applied. The emphasis on social interaction, addressing the issue of mutual understanding, and the capability of metaphorical imagination, belongs to the concept of immaterial values. It is considered a major factor in information systems and organisational performance that information system professionals are able to effectively work with other functional groups (e.g. Henderson, 1990; Keen, 1980). Effectively working together can be perceived as a social process. Effective shared knowledge can be seen as synergy between groups. In this context synergy is defined as mutual understanding and respect between groups (Nelson and Cooprider, 1996). Respect can be elaborated as the acknowledgement that other worldviews exists, and that their meaning is valuable to those involved. *Secondly,* immaterial value, is the broader concept of value that has a focus on outcome. Immaterial value is composed of human, structural and customer capital. Human capital is the individual's knowledge that contributes to the innovation and renewal of the organisation. As acknowledged in several publications, almost anyone in an organisation can initiate innovation. Markus et. al. (2002) use the term emergent knowledge processes to describe innovation as an emergent knowledge-intensive process, and that the involved people and context are highly unpredictable. Emergent knowledge processes require involvement of many different people. Technology can be seen as supportive with respect to structuring the teamwork. It enhances the available information to the team or by providing a communication system. Thus structural capital can be found in the technological and organisational infrastructure aimed to support the emergent knowledge processes. Customer capital, or the relationships with customers, suppliers, employees and cooperative competitors, can be found in this theme by the finding that knowledge contributors are likely to work on the assumption of relatively longer-term relationships. Confirming the emphasis on social interaction, Wasko and Faraj (2005) empirically establish that people contribute their knowledge when they perceive that it enhances their professional reputation, when they have the experience to share and moreover when they are structurally embedded in the network.

4.5.2 Theoretical underpinning for existing findings

By applying a broader concept of value, both concepts of immaterial value and immaterial values, the existing findings and empirical evidence is strengthened by both a theoretical underpinning for the importance of mutual understanding, as well as by providing measurements and benchmark methods to pinpoint immaterial value that produces innovativeness. Especially the social interaction of the concept of immaterial values, and customer capital of the concept of immaterial value, provide insight in why people share knowledge even though they do not experience an immediate material benefit as contributor. Findings indicate that contributions occur without regard to expectations of reciprocity (Wasko and Faraj, 2005). Overall the broader concept of value provides an explanation for empirical findings as found in this theme, as well as providing measures and benchmark methods for the described output.

4.6 Inter-organisational Knowledge Sharing

The theme of inter-organisational knowledge sharing extends the scope of the preceding theme from within the organisation to knowledge sharing across organisational boundaries. The locus of value at the inter-organisational knowledge sharing theme is located at the higher order goal to achieve competitive advantage by forming organisational knowledge alliances. The need for continual innovation is driving supply chains from a purely transactional focus to leveraging inter-organisational partnerships for sharing information (Malhorta et. al., 2005). The outcome of the inter-organisational knowledge alliances is proclaimed to be sustained innovativeness, while the process itself is described as long-term learning in the context of shared research and development. Hence, the theme of inter-organisational knowledge sharing involves conditions and input variables as well as outcome, in terms of sustained innovativeness.

4.6.1 Both immaterial value and immaterial values

Both broader concepts of value, immaterial value and immaterial values can be applied to the theme of inter-organisational knowledge sharing. *Firstly*, consider the concept of immaterial value, consisting of human, structural, and customer capital. Individual expertise and knowledge, or human capital, is no longer enough. Through shared research and development in joint ventures, consortia, and in alliances, human capital is aggregated. Examples of structural capital are given as automated IT-based information exchange systems that are being deployed between business partners (e.g. Electronic Data Interchange). Although it is not explicitly addressed in this theme, by running in packs, organisations combine and aggregate their human, structural and customer capital, including documented

procedures, patents, and relations with suppliers and customers. By cumulating immaterial value, new ways to generate material value can be discovered, or in the words of Malhorta et. al. (2005), long-term competitiveness can be achieved by understanding market dynamics and discovering new partnering arrangements. *Secondly,* the concept of immaterial values, emphasizing social interaction, the need to address the issue of mutual understanding and the capability for metaphorical imagination, can be applied to the theme of inter-organisational knowledge sharing. Automated information exchange systems are identified as a source of short-term operational efficiency, however long-term competitiveness is achieved at the nexus of relationships between a variety of parties. Even though it is not literally addressed this way, it does suggest some kind of interaction between the involved parties. The publications in this theme do not explain in detail how this shared innovation takes place in practice, but it is emphasized that by running in packs greater customer value can be provided, since the design knowledge, that is used to create products or services, often develops across boundaries of firms, industries and nations (Van de Ven, 2005).

4.6.2 Aggregating human, structural and customer capital

By the application of a broader concept of value, both the concepts immaterial value and immaterial values, the advantage of inter-organisational knowledge sharing can be elaborated in terms of aggregated human, structural and customer capital. The process itself is less explicitly defined and described in current literature, opening the way for an analysis based upon the achievement of mutual understanding among collaborating organisations. New ways to develop and utilize new technological innovations are found by a combined effort to learn and understand the different views on the matter. Knowledge alliances, as they are called, may prove to be a diverse and fruitful combination, a source of innovation, beyond one individual's capability of metaphorical imagination. The application of a broader concept of value on the theme of inter-organisational knowledge sharing, reveals that both the process as well as the outcome, reach further than mere material value.

4.7 Discussion of findings

In this chapter I have an attempted to discover what the application of a broader concept of value means for literature. Table 4.1 provides an overview of the key findings as fully discussed in the preceding sections. Per theme I have identified the prescribed locus of value from the selected publications, and attempted to determine whether the theme has a focus on input variables or conditions or a focus on outcomes. After that I have chosen the most applicable broader concept of value and applied it by addressing its key characteristics that are discussed in each corresponding paragraph. Finally I made an effort to describe what the broader concept implies for the corresponding theoretic theme. This section concludes this chapter with a discussion of the implications found.

§	Theme	Locus of value	Focus	Applied concept	Implications
4.1	Business Process Redesign (BPR)	Agility, quicker, cost efficiency	Output	Immaterial value	Customer capital not understood as important contributor to innovation.
4.2	Group Support Systems (GSS)	Supporting groups through parallelism, group memory and anonymity	Output	Immaterial value	Only partial support is given to groups, potentially insufficient.
4.3	Implementation and Adoption (I&A)	Account for wasted resources in failed ISD projects	Conditions + input variables	Immaterial values	Different perspective on existing problems
4.4	Management and Control (M&C)	Organizing successful ISD	Conditions + input variables	Immaterial values	Explanation why user participation is important
4.5	Knowledge Sharing and Contribution (KS&C)	Being innovative by sharing knowledge	Both output and input variables + conditions	Both immaterial value and immaterial values	Strengthen of existing empirical evidence
4.6	Inter-organisational Knowledge Sharing (IOKS)	Combining resources for sustained innovativeness	Both output and input variables + conditions	Both immaterial values and immaterial value	Decomposition of output and addressing key elements of the process of IOKS.

Table 4.1 Overview of findings and implications, after applying a broader concept of value.

Considering contemporary ISD literature, represented in the prominent themes out of fourteen years of MIS Quarterly, I can make some remarks with respect to the application of a broader concept of value. The implications for theory in table 4.1 differ per theme. By explicitly applying the most appropriate broader concept of value I have shown that a broader concept of value is useful for theory. Using the concept of immaterial value I identified a wrong assumption that is illustrative for the theme of business process redesign, customer relations should not be limited to a single-point-of-contact as assumed by the CoE organisation design by Clark et. al. (1996). This does not mean that Clark et. al. (1996) totally ignore immaterial value, for example they do address human capital with the centres of expertise vision. For the theme of group support systems the application of a broader concept of value revealed that group support systems could better be considered structural capital support systems. As Dennis (1996) concluded, the group support systems distribute the information among the participants, but it does not make them think about it. The usefulness of group support systems is therefore limited. For the theme of implementation and adoption the application of a broader concept of value provided

insight into how cognitive frames can differ. As Griffith and Northcraft (1996) emphasised correctly, cognitive frames direct an individual's critical cognitive processes, including directing what information to attend to and how to interpret that information. For the theme of management and control the concept of immaterial values explains why prototyping and user participation is valuable. It enriches the correct conclusion by Baskerville and Stage (1996) that prototypes provide users with a concrete understanding of the proposed computer system by meaningful and direct interaction between users and developers. For the last two themes concerned with knowledge sharing the application of a broader concept of value helps to understand the benefits in terms of immaterial value and the challenges in terms of immaterial values. Knowledge sharing is not utterly simple as differences in understanding can hinder an easy exchange of ideas. What might be simple for one person may be incomprehensible to another.

However, the biggest limitation of this application of a broader concept of value is the magnitude and diversity of the themes of literature making it hard to apply a broader concept of value in a fine-grained, in-depth manner. I would argue that each individual theme would provide enough material for multiple studies with regard to a broader concept of value. In addition, in section 3.4.3 I illustrated the limitation of capturing a broader concept of value in a generic antecedents-use-effect model. In this chapter I did use this simplified approach to explore what the implications for literature are when the broader concept of value is applied. In the next chapter an empirical exploration with a more in-depth focus using the iterative model of the dynamics of value is aimed to overcome these limitations.

5 Empirical Exploration

In the preceding chapter I applied a broader concept of value to contemporary IS literature using the prominent themes of literature found in fourteen years of publications of MIS Quarterly. In this chapter I will explore how a broader concept of value can be applied to a real world scenario. This empirical exploration is done by the case of a special IS development project in a non-commercial setting.

The empirical study in this chapter is based upon desk research and in-depth interviews. Data was obtained from internal reference documents and prior research with regard to this case (Oosterbroek, 2008). The desk research was augmented with two interview sessions with Mila Ernst, a recognized key player in this case. The in-depth interview sessions took more than one hour each, illuminating immaterial aspects with regard to the case. The interviews were semi structured. A digital recording was made and used as a basis for further analysis. The results from the interviews were combined with the findings of the desk research. Screenshots of the discussed information system are included in Appendix C.

This chapter is comprised of four sections. The first section provides a case description, addresses the nature of the case, describes the people involved, and identifies the role of technology in this particular project. The first section is concluded with a discussion of the relevance of this case in terms of the themes of literature. In the second section of this chapter a broader concept of value is applied. Both immaterial value and immaterial values are addressed. Based upon this practical exploration of both concepts, section three of this chapter discusses the usefulness of this application using the various conceptual models that were introduced in chapter three. The final section of this chapter contains some concluding remarks related to this particular case.

5.1 Case description 'Het Geheugen van Oost'

The website 'Het Geheugen van Oost' ('Memory of East', abbr. GvO) is part of an exhibition of the Amsterdams Historisch Museum (Amsterdam Historic Museum, abbr. AHM). From October 2003 up to February 2004 the exhibition 'Oost, een Amsterdamse Buurt' (English: 'East, an Amsterdam neighbourhood') was on show at the museum, located in the very heart of the city of Amsterdam, the Netherlands. The AHM explicitly wanted to reach out to a target audience that was out of its original reach. In addition, as Mila Ernst emphasised, the welfare goal to let people participate was set: by getting people involved, the project aimed at stimulating social inclusion among local citizens. In the eastern part of the city of Amsterdam about 60.000 live people of whom 36% is registered as ethnical minority, divided over 15 neighbourhoods that differ in size. The differences among the people living in

this part of the city are big. This cultural mix and existence of welfare organisations made Amsterdam East a suitable location for this project. The entire exhibition, including the website GvO, was aimed to achieve awareness of how the different people in the part of the city live together, using stories of (local) history and present.

The website GvO was developed to collect and publish informal history, in the form of stories told by people who lived or live in the eastern part of Amsterdam. These stories were considered a good starting point to gain attention and interest for the city and the museum. As Mila Ernst, a key player from the project, explains in an interview, this assumption was made on several studies including the ones that are discussed in the book "Presenting the Past" by Porter Benson et. al. (1986). Together with support for photos, the website provided an alternative way to document history, in comparison to formal methods for assembling an exhibition. The organisation behind the website and exhibition was both new and unique. The museum closely collaborated with the Buurtonline organisation and the Amsterdam internet development company Mediamatic. The former is a local organisation providing easy access to computer and internet applications to the local citizens since 2001; their door is literally open daily. The latter, Mediamatic, is specialized in the development of social websites, with a special focus on art and society. Strengthened by many volunteers, the organisation behind the project proved that a new internet application could be developed in a special way for a unique goal.

5.1.1 Organizing the project

The preparation for the exhibition started in November 2002. With some hesitation and doubt, volunteers were recruited by the AHM, ten months ahead of the exhibition. The AHM had never collaborated with volunteers this way before; therefore it was uncertain whether the project would be successful. Normally volunteers that worked for the museum were considered a kind of employee. But in the case of the GvO, volunteers acted as a kind of ambassador of the museum in the neighbourhood as Mila Ernst explains. Participation was considered more important that the actual quality of the content of the stories. Therefore traditional, formal, scientific methods to document oral history were not used. The initial goal was to find 10 volunteers that would collect 50 stories. The volunteers were trained for this project. The training sessions were focussed on stimulating memories, practical issues (whether or not to use a tape recorder, finding story tellers), writing stories (general writing tips, compacting long texts), finding illustrations (scanning photos), and finally publishing the stories on the GvO website. The choice to use a website for publishing the stories was made because new stories could easily be added, and the interaction enabled stories to complement and augment other stories. The website is built around a semantic associative structure that automatically connects similar stories to each other. This way the website did not have a fixed structure, but was capable of deriving structure from the actual subjects of the stories. To establish an equal basis for collaboration, the individual goals of the involved organisations were included in the project plan. The involved volunteers

were selected to reflect the cultural diversity of the eastern part of the city; many resources were devoted to this selection process. The AHM personally visited contacts in the neighbourhoods, including local welfare and cultural organisations as well as attending coffee meetings of mothers from several elementary schools. A total of 32 story collectors were trained, differing widely in their cultural backgrounds. Some of them lived most of their lives in Amsterdam East, while others just arrived. Most of the volunteers were Dutch, but not all of them, some were Brazilian, Moroccan, Pakistani, Peruvian, Surinam and Turkish. Even four homeless persons from a reintegration program were found to be willing to collaborate. Trainings were given at the museum and after that each story collector was free to decide whom to interview. Some approached people they knew, while others actively approached new, unknown people. The Buurtonline location in Amsterdam East was available for processing and publishing the collected stories. Following the initial training, there were sessions to address questions, remarks and tips. A professional text writer edited the submitted stories and was available for assistance with writing. Overall, the cumulative goal, based on an equal basis of involvement of the organisations, the participation of local volunteers and the role of the website as both an online publishing location and as a catalyst for new stories, makes the entire project relevant to this study, which will be further elaborated later in this chapter.

5.1.2 Results of the project

The GvO website now contains ordinary and extraordinary stories of the daily lives of the people of Amsterdam East. Initially about 200 stories were available when the exhibition opened. At the end of the exhibition the number of stories had reached 350. After the exhibition the museum decided to incorporate the website in its collection, keeping the website online and available. At the time of writing, March 2009, nearly 1400 stories are available on the website. For an impression see Appendix C that contains several screenshots of the GvO website. Nevertheless, the stories are a nice result but hardly important by themselves. More important is the process around the website and the effects it had on the local neighbourhood and the involved people, as Mila Ernst emphasized in an interview. Based upon an evaluation, it was established that the volunteers told others about the project and made them more enthusiastic to visit the exhibition, including family, friends, colleagues and people from the local sports club. The local involvement of people from the neighbourhood clearly provided a surplus for others to get involved by visiting the exhibition. At the museum visitors were asked to leave behind their own story based upon the existing stories that proved to be a source of inspiration for new stories. People remember their own experience when an existing story has associations; one story makes other memories vividly. Another result of the project was that the involved people felt more connected to the eastern part of Amsterdam including their fellow citizens. They became more tolerant in respect to other cultures due to a better understanding of each other's experience. One Pakistani volunteer Nusrat told that she was affected by stories about poverty and disease. "I always thought that we immigrants lived a more worse life, but now I know that Dutch people did not always lived

prosperously as well." Initially the volunteers did not know one another, but by their common activities during the project they became to understand and respect each other better. The GvO website presents the local present and past with cultural diversity as an important but integrated element, it has become an interesting part of the museum's collection containing insights in experiences of local citizens of Amsterdam East.

5.1.3 Relevance to this study

This case can be considered relevant to this study since it appears that it is a good example of an IS innovation in a context other than a commercial enterprise. The museum and the organisation Buurtonline are both non-profit. The purpose and effects of the GvO website and the exhibition are expressed in non-material terms, illustrated by the goal of reaching out to a new audience to improve mutual tolerance and acceptance of the differences among the individual citizens of Amsterdam East. To better understand and identify the relevance of this case to this study, the discussed themes of literature can be used. Firstly, consider the theme of *Inter-organisational Knowledge Sharing*. During the preparation of this project, volunteers collaborated with the museum supported by Buurtonline to collect and process stories for the website that was created by Mediamatic. Each individual organisation needed the others to realize the final result: this is a good example of inter-organisational knowledge sharing. At an individual level, the story collectors involved and storytellers engaged in a person-to-person form of knowledge sharing, interviewing persons in an informal setting. This of course relates well to the theme of *Knowledge Sharing and Contribution*. The storytellers did not receive financial benefit or profit, yet they did engage in the process of sharing the stories. By actively involving local citizens, the project was organized in such a manner that the input of the individual volunteers was taken seriously and directly contributed to the resulting website. This is one of the main notions in the theme of *Management and Control*, maximizing the volunteers' control over the proposed website. The relation to these three themes is apparent. The themes *Business Process Redesign*, *Group Support Systems*, and *Implementation and Adoption* are less applicable to this case. Although the theme of *Implementation and Adoption* is related to the theme of *Management and Control*, its focus on ISD failure is incompatible with the outcomes of this particular case. Summarizing, the development of the GvO website in this multi-organisational context, including the participating volunteers, makes this case relevant to multiple of the discussed themes derived out of fourteen years of MIS Quarterly.

5.2 A broader concept of value applied

In this section I will attempt to apply both the concept of immaterial value and the concept of immaterial values to this case. But firstly, it is important to consider that both concepts are different. As discussed and elaborated earlier in chapter four, immaterial value can be used as an output variable,

while the concept of immaterial values is more suitable to be applied when analysing input variables or conditions. In chapter four it was determined which concept, immaterial value or immaterial values, was most applicable per theme of literature. By determining whether a literature theme has a focus on input variables and conditions or a focus on outcomes, the corresponding concept was identified. The results of this analysis are summarised at the end of the preceding chapter, in table 4.1.

Now, back to the case, in the preceding section I have determined that the themes Inter-organisational Knowledge Sharing, Knowledge Sharing and Contribution, and Management and Control are most relevant to this case. As determined in chapter four, the concept of immaterial values can be applied to all of these three themes. The other concept, immaterial value, appears to be less applicable since the theme of Management & Control was determined to be less suitable for this concept (see table 4.1). Therefore it can be expected that the concept of immaterial values will prove to be more helpful than the concept of immaterial value. In the next sections, both concepts are applied and elaborated.

5.2.1 Immaterial Value

The concept of immaterial value describes something that can be measured. It is an outcome of the interplay between human, structural and customer capital. Table 3.2 provides an overview of the key characteristics of these three types of capital. In short, human capital is the individual's knowledge and expertise that contributes to the innovation, structural capital is the flow of formal, structured knowledge in an organisation (including administrative processes), and customer capital can be considered the relationships with involved people, including employees and suppliers. Together these types of capital must interact well, for instance, heavy administrative pressure (structural capital) can diminish creative input (human capital), and therefore there must be an optimal balance. Similar to material value, immaterial value can be set as goal, it can be used to compare and benchmark performance. So if the concept of immaterial value is applied, each type of capital should be addressed.

Firstly, consider *human capital*, the individual's knowledge and expertise that contribute to the innovation. In relation to this case the story collectors and storytellers are individuals that directly provide input to the GvO website in the form of stories. As emphasized in section 3.2.1, ideas are immensely valuable. These ideas cannot be put in stock; they form the capacity to contribute. As described in the case description, the volunteers came together for training and follow-up meetings. This allowed the group of people to develop over time by sharing experiences of collecting and publishing the stories. These meetings during the duration of the project allowed the group to develop a way of dealing with the tasks they shared. Some may describe the group of volunteers, the trainers and experts involved as a community of practice, although it is uncertain what the minimum time span is to form a true community of practice. Overall, human capital can be found in the story collectors and tellers who were able to find, share and finally publish the stories on the GvO website.

Secondly, consider *structural capital*, the knowledge in an organisation that is structured, codified and easy to store; it is knowledge that does not go home at night. It also includes the administrative processes and computer systems that support the innovation process. In relation to this case, structural capital can be found in the website that contains the typed versions of the stories and in the museum's approach of documenting oral history. Instead of forcing the volunteers to use a scientific formal procedure to collect stories, the volunteers were free to interview anyone they wanted in an informal setting. As emphasized in section 3.2.2, bigger is not better. The 32 volunteers were within the limit of 50 persons that was identified as a maximum size for an innovative group. The role of technology is rather obvious in the case of the GvO website: it provided a way of storing and retrieving existing stories. Just as described in section 3.2.2, structural capital can increase productivity; existing stories proved to be a source of inspiration for new stories. Summarizing, structural capital can be found in the website and the informal method of collecting stories.

Thirdly, consider *customer capital*, the relationship with all involved that contributes to the results. In the context of this case there are several kinds of relations that can be considered. The relation with Mediamatic as supplier of the website is one of them. It was important that Mediamatic understood the purpose of this website, since it cannot be considered an 'average-Joe-the-Plumber-website'. The GvO website is custom-made. As suggested in section 3.2.3, a knowledge-focussed strategy encompasses customisation of the website. The website is not a mere product, but the result of an ongoing process. Another relation is that with the Buurtonline organisation. Their collaboration actively contributed to the process of publishing the stories, or in terms of capital types: the customer capital contributed to both structural and human capital. Another kind of relation was that of story collectors with the people from the neighbourhood. Their local involvement made other citizens enthusiastic about the website and exhibition. Concluding, customer capital involves the relations with key-players like Mediamatic, the museum and Buurtonline as well as the valuable relations with the local citizens.

5.2.2 Immaterial Values

The concept of immaterial values provides insights in how actions are influenced by the things people consider important. With regard to the GvO case the concept of immaterial values applies to the local citizens of Amsterdam East. Values were described as principles or standards of behaviour in section 3.1. When individuals that do not share the same values are interacting, mutual understanding can be difficult to achieve. Using metaphors as a kind of building blocks for our understanding, differences in immaterial values can be identified. As emphasized and elaborated in section 3.3, metaphors are not just a poetic form of language, they form the basis of our thinking. Understanding how our thinking and doing is based on metaphors helps to overcome differences by creating awareness of other worldviews. To understand how this works I will first address the three key characteristics of the concept of

immaterial values: social interaction, the capability of metaphorical imagination, and mutual understanding. Later on in this chapter I will use both figures 3.1 and 3.2 to illustrate how the GvO website helped overcome social differences in Amsterdam East.

Firstly, consider *social interaction*, it refers to the constant interaction with the physical world including other people. In section 3.3 it was emphasized that the theory of the experientialist views interaction with the environment as mutual change. One cannot function with the environment without changing it or being changed by it. Social interaction is necessary because it enables the negotiation of meaning. In this particular case there is social interaction involving the stories on the GvO website. The volunteers collected the stories from people in the neighbourhood by person-to-person interviews. New stories were sometimes inspired on existing stories. The number of stories and the people dealing with them, including discussions and reactions, are a clear example of social interaction.

Secondly, consider the *capability of metaphorical imagination* that involves bending your worldview and adjusting the way you categorise your experience to become aware that other worldviews exist. As emphasized in section 3.3.2, metaphorical imagination requires enough diversity of cultural and personal experience. Metaphorical imagination is a crucial skill in establishing mutual understanding. Successful metaphorical imagination enables people to understand differences in values they personally consider important. In this case, the stories on the website allow readers to project their own history and experience on a story's context. This way, people can actively compare their own experience and past with that of other local citizens. As Mila Ernst elaborates, the stories by themselves do not have much value, it is the meaning that people attach to it, including self-reflection, which is most valuable. The stories on the GvO website open the way for public discussion and personal consideration.

Thirdly, consider *mutual understanding* it is the result of social interaction when participants are capable of metaphorical imagination. To achieve mutual understanding one must engage in the negotiation of meaning that happens when people are interacting on an equal basis. Cultural and personal diversity maximize the capability of metaphorical imagination and should therefore not be suppressed by a leading culture or personal point of view. The first step in achieving mutual understanding, as elaborated in section 3.3.3, is to become aware that other worldviews exist, by expressing own personal experience in terms of a different metaphor. See the example of the PROBLEM IS CHEMICAL in section 3.3.3 for a further elaboration of what that might imply. In this case it was found that the people involved became more tolerant in respect to other cultures due to a better understanding of each other's experience. This result is what I would describe as the manifestation of achieved mutual understanding.

5.3 Discussion

In the preceding sections I applied a broader concept of value to a real world case. Both broader concepts of value, immaterial value and immaterial values were applicable as predicted by expressing the relevance of this case in terms of the themes that I derived from literature. In this concluding section of the chapter I will discuss both applications. I will take the generic conceptual models that were presented at the end of chapter three and place them in the context of this case.

5.3.1 Context specific antecedents, use, and effects

Let us start with the model related to immaterial value. As elaborated earlier in this chapter, and in chapter three, immaterial value can be considered an output variable. Figure 5.1 is the context specific version of the generic model found in chapter three (figure 3.3). The model tells something about the organisation behind the project comprising the immaterial value of this special collaboration between the museum, Buurtonline, Mediamatic and the volunteers. This model can be used to compare this project to similar projects in different contexts, for instance another part of the city of Amsterdam. Comparing the individual capital types comprising immaterial value can pinpoint differences between this project and another. Overall, immaterial value tells us something about how valuable the organisation was, but it tells us little about aspects related to the welfare goals that the museum had set to achieve with this project, namely to create awareness of how different people in the eastern part of the city live together using stories of (local) history and present.

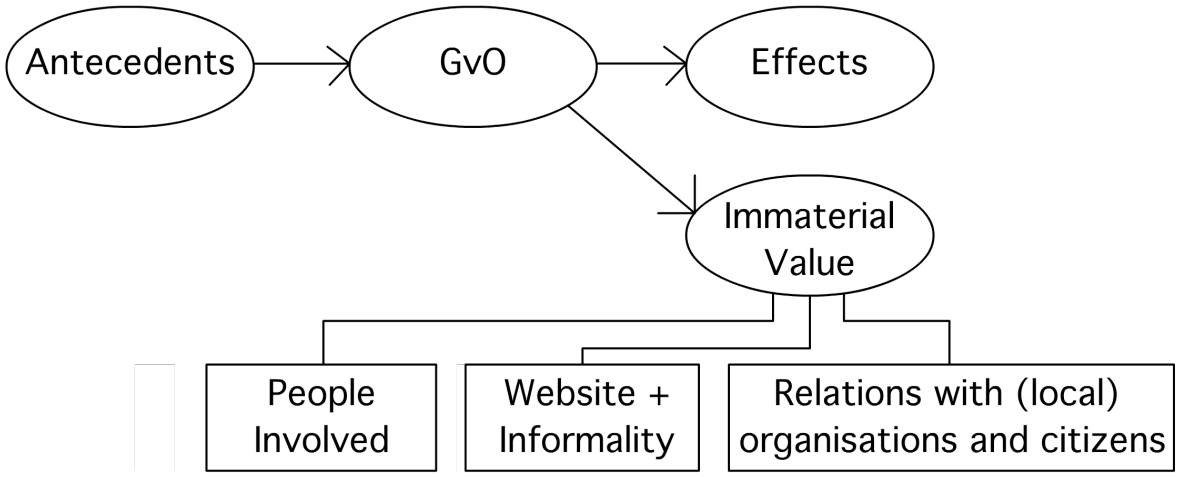

Figure 5.1: The concept of immaterial value in the context of the GvO case

In order to be able to say something in regard with the role the GvO website had with respect to the welfare goals that the museum had set, the concept of immaterial value is insufficient. As discussed above, it solely says something about the immaterial value the organisation behind the project has. Although useful for comparisons, it is not suitable in relation to the stories on the GvO website. As predicted before both broader concepts were applied, the concept of immaterial values provides more insights into this matter. The application of the concept of immaterial values revealed that the social interaction involving the stories allowed the citizens to reflect heir own experience in the context of stories originating from fellow citizens. By comparing people's own history to that of others, mutual understanding could be achieved. Differences between individuals were better understood using the stories on the GvO website.

One disadvantage of the concept of immaterial values is that it is difficult to comprehend. But why is the nature of immaterial values complex? Let us again go back to the generic conceptual models that were presented in the last section of chapter three. Figure 5.2 contains the context specific version of the generic model of the concept of immaterial values that was presented in chapter three (figure 3.4). As illustrated in this figure, key characteristics of immaterial values are the people's interaction concerning the stories, the projection of one's own experience on existing stories and some kind of tolerance by an achieved understanding. Figure 5.2 is limited by expressing the relation between immaterial values and GvO usage in a single point of time; 'immaterial values lead to GvO usage'. While a high level of social interaction would suggest a high GvO usage level, it does not explain the interaction around the stories contributing to the welfare goals that were set by the museum. In addition: "Understanding fellow citizens" is now characterized as input variable while one might expect this to be a result of the GvO project. Apparently, the iterative character of the concept of immaterial values makes it more difficult to capture in a simple causal model, the next sections are aimed to overcome this problem.

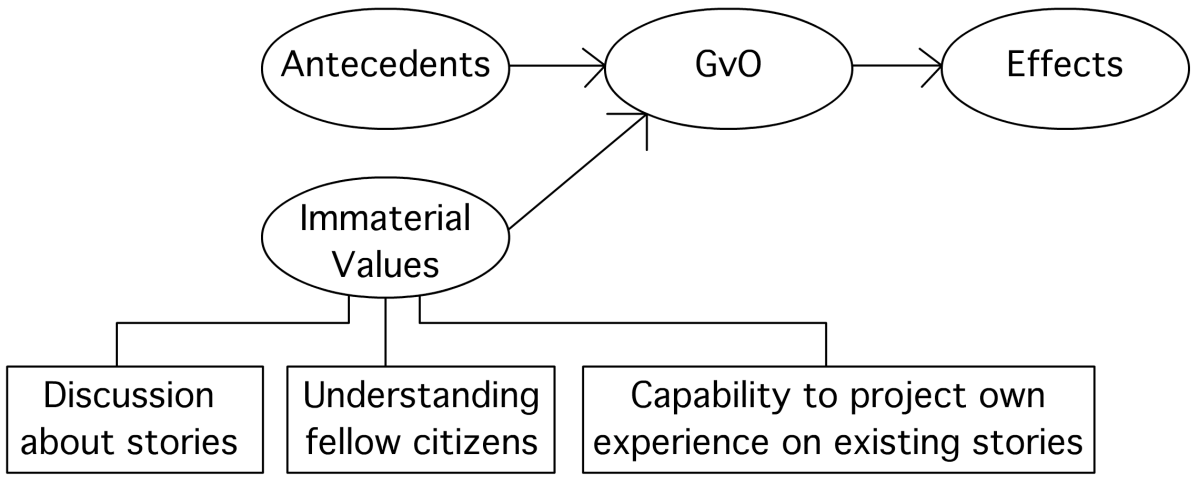

Figure 5.2: The concept of immaterial values in the context of the GvO case

5.3.2 Metaphorical imagination

In section 3.3 I discussed the classic work of Lakoff & Johnson (1980) regarding the theory of the experientialist and the metaphors we live by. As elaborated earlier, metaphors form the basis for our conceptual thinking. New understanding can be achieved when an alternative metaphor is introduced and used to comprehend experience (figure 3.1). In the case description of the website GvO, there was a citation of the Pakistani volunteer Nusrat. In an evaluation she told that she was affected by stories of poverty and disease regarding autochthonous Dutch locals in the past. She always thought that immigrants lived a less prosperous life than Dutch people, but knowing about the history of autochthonous Dutch locals apparently changed that. Consider the metaphor QUALITY OF LIFE IS A DETERMINED THING, reflecting an understanding of the world that the quality of life is determined by fixed factors like being an immigrant or not. Living by the metaphor QUALITY OF LIFE IS A DETERMINED THING would then mean that it is pointless to think that it can be changed or improved if the quality of life happens to be low. Differences in life quality would naturally come from differences in the determination, e.g. being an immigrant or not. In contract, the metaphor QUALITY OF LIFE IS THE RESULT OF TIME AND EFFORT suggests that by adding more time and efforts the quality of life will be higher. Living by this metaphor would emphasize that one can take control of the quality of life by extensive efforts over a period of time.

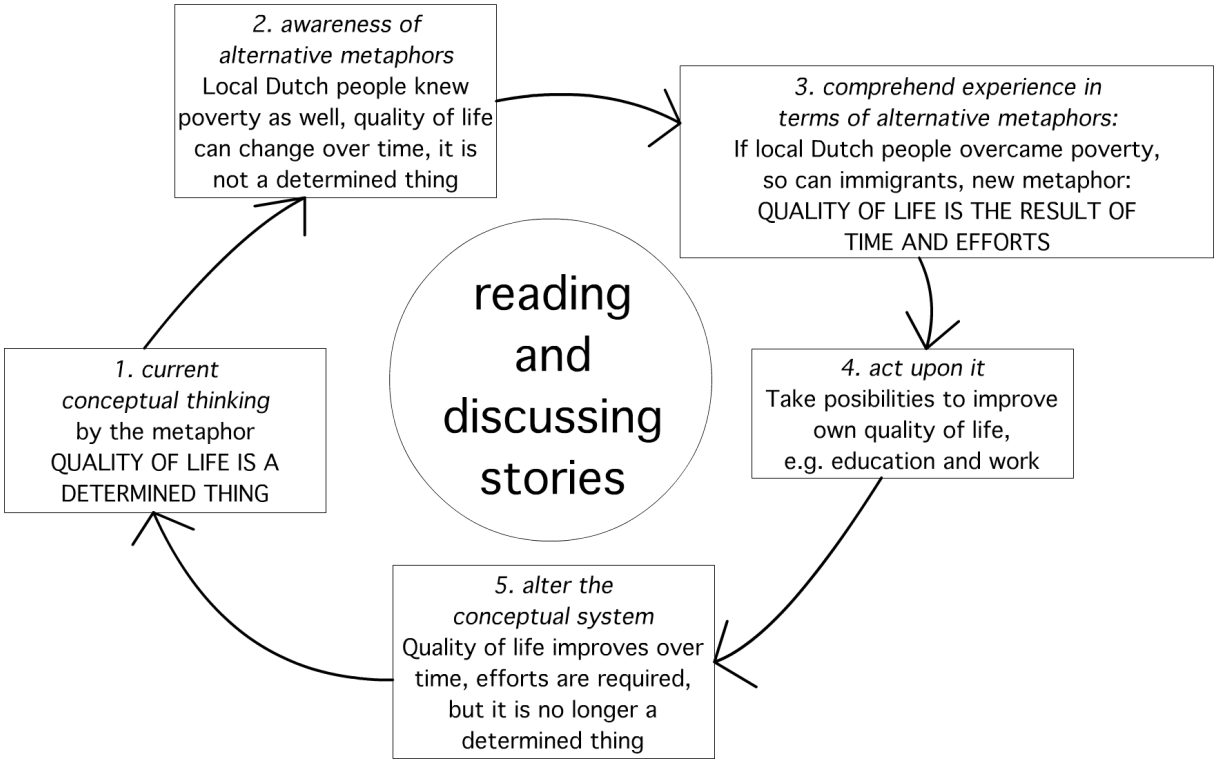

Figure 5.3 The rise of an alternative metaphor changing the conceptual thinking

Consider figure 5.3: it resembles how the stories of poverty and disease could have changed the leading metaphor that the quality of life cannot be changed. Initially (1) the current thinking is built around the idea that the quality of life is determined, in the case of the Pakistani volunteer, it is determined by being immigrant or not. The stories of poverty and disease of the past in comparison to the relative welfare of the Dutch in the present give rise to a new metaphor, one that allows the quality of life to improve over time (2). Obviously the stories suggest that welfare does not come by waiting alone. As the Pakistani volunteer realizes that the immigrants' quality of life can improve, she compares the situation of immigrants with that of the Dutch from the past (3). With this understanding, possibilities to improve the quality of life can be pursued (4), altering the current conceptual thinking (5) since the new metaphor becomes more important.

Figure 5.3 illustrates how metaphorical imagination works. In the first step, one metaphor forms the most important basis for the conceptual thinking. Since it is embedded in the way the conceptual thinking works, it is likely that people are not aware that this metaphor is leading. As far as the person in step one is concerned, it is just the way it is, nothing more and nothing less. However, the stories in step two enable the person to consider that alternative metaphors exist. The stories from step two provide an escape from the current conceptual thinking. When the person expresses his or her own experience in terms of alternative metaphors in step three, a new metaphor can become more probable. Ultimately, when the person starts acting on the new metaphor the cycle can be completed and the original conceptual thinking changes. But it is by no means easy to change the metaphors that are leading in one person's life; it can imply changes in the way people live and working. But for people to understand each other better, it is not necessary to, in fact, change the metaphors one person lives by. The first two steps are the key to understand each other; a change in actions is possible when the other steps have been completed.

5.3.3 Immaterial values as basis for action

In chapter three, the dynamics of value model was introduced (figure 3.2), it indicates that our actions are based upon our immaterial values. It indicates that actions are based upon how people understand their world, based upon what they find important. Which in turn is not solely reliant on their rational objectivistic knowledge, but also on immaterial values, including assumptions. The things people do are therefore not purely objectively rational, but also imaginatively rational. Figure 5.4 is the context specific version of the dynamics of value model for this case. The model represents a short loop (A, B, C1, D1, E1, F1) and an alternative path (A, B, C2, D2, E2, F2). Consider the short loop: it reflects how immaterial values form the basis for understanding. In this case, the assumption (A) that "immigrants live a worse life than autochthonous Dutch people" leads to a focus on differences between immigrants and locals (B). The understanding of the world by the metaphor "QUALITY OF LIFE IS A DETERMINED THING" (C1) is strengthened by this focus on differences. Living by this metaphor would imply that it is

useless to try to change life quality, since it is determined by fixed factors, in this case by being an immigrant or not. Ironically, this way of thinking and acting accordingly will reinforce the assumption of the first step (A), making it more difficult to escape this thinking as iterations occur. The more actions that are based upon a person's immaterial values, the more embedded they become.

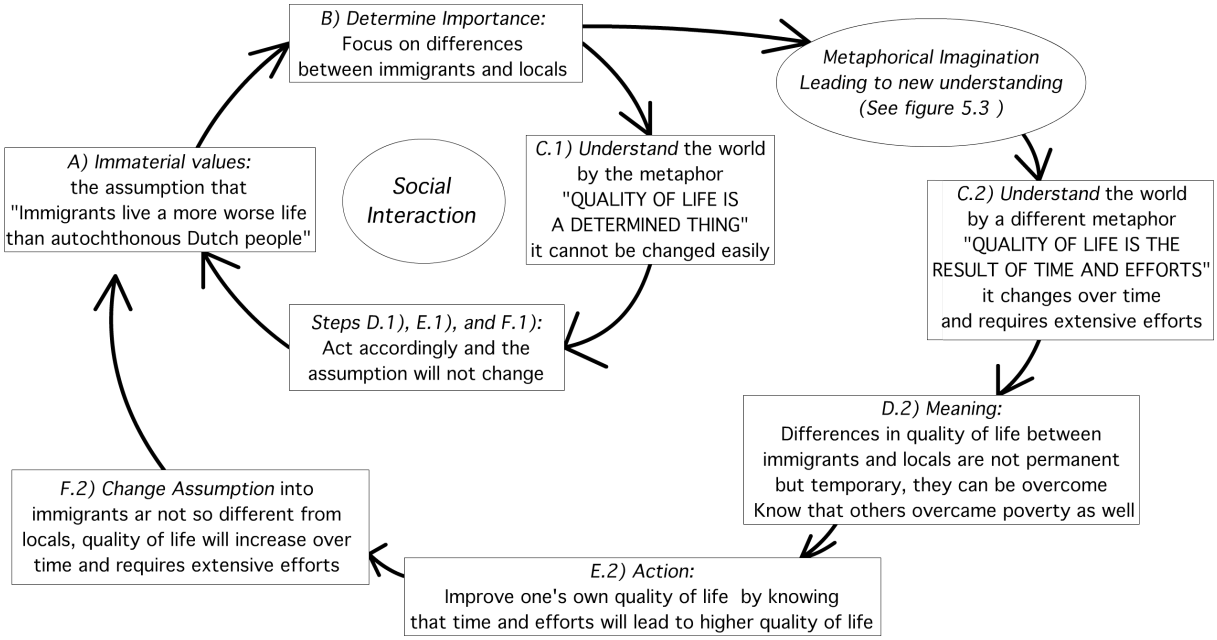

Figure 5.4: The dynamics of values concerned the assumption of the quality of life

By having the capability of metaphorical imagination (figure 5.3), the described short loop can be escaped, allowing the alternative path to be followed. In this case, the new metaphor "LIFE QUALITY IS THE RESULT OF TIME AND EFFORT" (C.2) provides a new basis for understanding. It is different compared to the original metaphor that formed the basis for the original assumption. A different understanding will result in different meaning (D.2). Originally life quality was considered determined; now it can be changed and improved. By knowing that local people overcame poverty in the same part of the city as where the immigrants live, it becomes more probable that immigrants can do the same. This results in actions that are based upon the new metaphor, like pursuing education and work (E.2). It will be difficult to change the path, but ultimately these actions will cause the original immaterial values to be changed, a new assumption will take the place of the original (F.2). This example illustrates how metaphorical imagination works and how it influences one's actions, but it is good to consider its limited scope: the example is based upon one volunteer's story.

5.3.4 Iterative relations between immaterial value and immaterial values

The dynamics of value concerning the assumption of the quality of life illustrated that a broader concept of value has an iterative character, visualised by the circular direction in figure 5.4. In the final

section of chapter three, both generic conceptual models (figure 3.3 and 3.4) were combined to pinpoint the iterative relations between immaterial value and immaterial values (figure 3.5). With regard to the GvO case I already identified the shortcomings of simple causal conceptual models, in particular with figure 5.2. The iterative character makes it difficult to comprehend the broader concept of value in such a model. A combination of figure 5.1 and 5.2 is required to overcome this as it pinpoints the iterative relations between immaterial value and immaterial values for the GvO case.

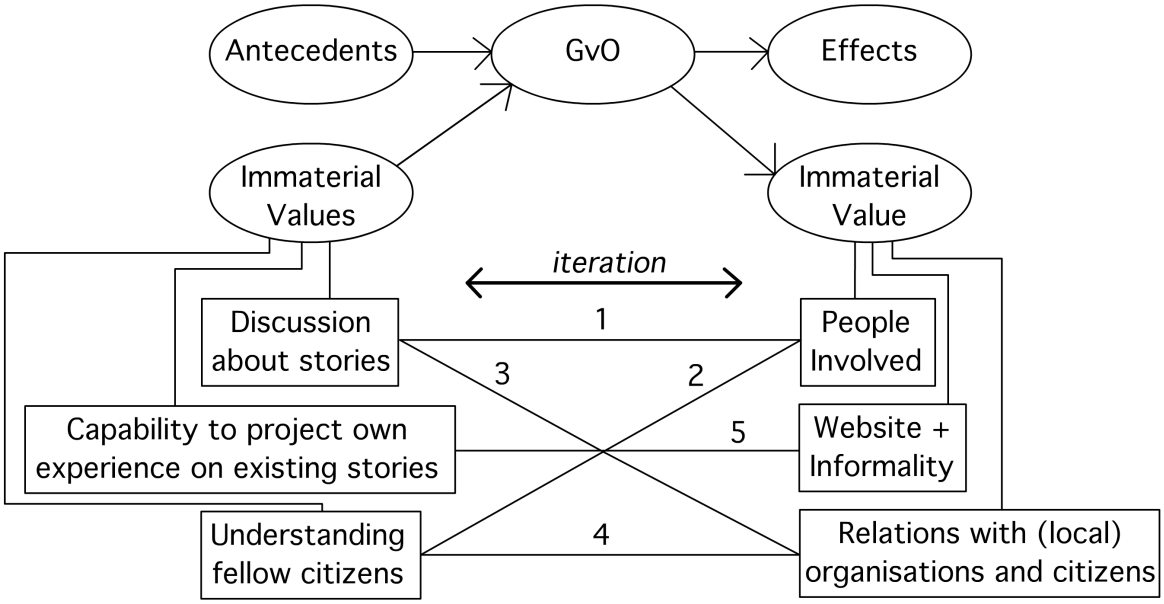

Figure 5.5: Iterative relations (1-5) between immaterial values and immaterial value in the context of the GvO case

Figure 5.5 combines both figure 5.1 and 5.2 and can be considered a context specific version of the generic model in figure 3.5. The model contains five iterative relations between immaterial values and immaterial value. By analysing these relations it becomes clear how both concepts relate to each other in an iterative manner. The discussion related to the stories caused people to get involved, local people made others more enthusiastic (1). At the same time, as the number of people involved increased, more stories were added that functioned as subject for discussion. In time, the stories enabled the people involved to get to know each other better, thus developing understanding for fellow citizens (2). The more people got involved discussing the stories, the better the customer capital became, improving relations with (local) organisations and citizens (3). The better these relations became, the easier it was to develop mutual understanding (4). The website and the informal method that the museum used to document the local history was a crucial part in the GvO project (5). The capability to project one's own experience to existing stories is an essential part of the concept of immaterial values. Summarizing, any of the six rectangles containing a key component of the broader concept of value can be used as starting point to make a loop clockwise through the model, illustrating the iterative character.

5.4 What can be learned from GvO?

In this chapter I have discussed the case of the GvO website, a special IS development project in a non-commercial setting. This case proved to be relevant to this study after comparing it to the themes from literature. The empirical application of a broader concept of value provided a novel perspective on how immaterial values are influenced by the GvO website, contributing to the welfare goals that were set by the museum. Table 5.1 provides a tabular overview of how a broader concept of value was useful in this context. In this section I will determine what can be learned from this particular case.

Concept of value	Applicability	Related figures	Usefulness
Immaterial value	Applicable to the organisation behind the project: the collaboration between the involved organisations and volunteers.	Context specific antecedents, use, and effect model (5.1).	Limited to analysis of the organisation behind the actual project, e.g. comparisons between the organisations of similar projects.
Immaterial values	Applicable to the actual contents of the project, the stories on the website that formed a basis for social interaction.	Context specific models of: antecedents, use, and effects (5.2), new metaphors (5.3) and the dynamics of value (5.4).	Understanding how this project contributed to the welfare goals that were set by the museum.
A broader concept of value (combination of immaterial value and immaterial values)	Applicable to the GvO case in general, based upon both concepts.	Model 5.5 illustrates the iterative relations between immaterial value and immaterial values.	Provides insights into how the individual components of the broader concept of value contribute to the success of the GvO project.

Table 5.1: Overview of findings after applying a broader concept of value on this case

The GvO project is interesting since it is a clear example of an IS innovation in a non-commercial context. Therefore, value expressed in other than material terms becomes more important when analysing how the GvO project worked and how it produced its effects. The broader concept of value, including immaterial value and immaterial values proved to be useful. The success of the GvO website in this non-commercial context is what makes many information managers wonder: can it be recreated?

The first step to answer that question is to understand how the GvO project worked. A useful model might be the one that identified the iterative relations between the concept of immaterial value and immaterial values (figure 5.5). This model indicates the importance of good structural capital in the form of the website and the informal method for documenting the local history. Central on the website

are the stories that are related to the eastern part of Amsterdam. This is very important, all stories have something in common: they are somehow related to Amsterdam East. This makes the structural capital valuable for Amsterdam East, it enables anyone in this part of the city to project their own experience on the stories. The stories provide a concrete understanding of the way fellow citizens experienced history. The stories are the subject for social interaction that occurred at the exposition, in the neighbourhood and on the GvO website. In time, the social interaction around these stories produced a better understanding of how different citizens live (and lived) in Amsterdam East. The organisation of the GvO website considered customer capital important as resources and time were invested in relations with local citizens, volunteers and organisations. This set the scene for the iteration to 'fire up', starting social interaction around the stories. To conclude this chapter, three practical guiding steps are derived from the findings of this case that may help to recreate the success of the GvO website:

1. *Find a suitable subject for social interaction:* in the GvO case the stories were the subject for social interaction. Their relevance to the eastern part of Amsterdam made them suitable for anybody in Amsterdam East. In this particular case, the relation with Amsterdam East made the stories universally relevant for local citizens, similar to the relevance of a prototype in a direct communication between systems developers and users as emphasised by Baskerville and Stage (1996).

2. *Arrange structural capital for the capability of metaphorical imagination:* in the GvO case the website provided easy access to all stories and new stories were welcome thanks to the informal method of documenting local history. If the subject for social interaction is correctly chosen, the universal relevance provides a basis for metaphorical imagination. Being capable of metaphorical imagination is crucial to become aware of differences in understanding that are caused by differences in the conceptual system. The conceptual system is similar to a cognitive frame as described by Giffith and Northcraft (1996), it directs an individual's critical cognitive processes, including directing what information to attend to and how to interpret that information. Cognitive frames invoke selective perception and thus influence how the target audience will come to understand the subject for social interaction.

3. *Use customer capital to get people involved:* The museum in the case of GvO devoted resources to get local people involved. The museum actively recruited volunteers and approached local (welfare) organisations. As emphasised by Hunton and Beeler (1997), a successful participation strategy is one that maximizes the instrumental control over the proposed system by the people involved. By allowing volunteers to decide how and what stories to collect, the volunteers controlled the actual content of the website.

The next chapters will provide more recommendations with regard to theory and future research.

6 Recommendations

In this chapter recommendations will be formulated based upon the results from chapter four, the application of a broader concept of value on literature, and the results from chapter five, the case study. Therefore this chapter is divided into two main sections, the recommendation with regard to theory and a special advice for people involved with information science. Per theme of literature practical insights are addressed in the first main section. An overview of these insights is summarized in table 6.1 at the end of the first main section. The second section of this chapter is meant as a guiding principle for people involved with IS in general and ISD in specific. It is based upon the findings from both chapter four and five. It contains definitions of information, knowledge, learning and communication as well as a manifest what information and knowledge management should encompass, followed by a set of organisational principles.

6.1 Practical recommendations with regard to theory

Per theme of the discussed literature I will formulate recommendations with a pragmatic focus based upon the application of the broader concept of value on literature, as discussed in chapter four.

6.1.1 Business Process Redesign: mind the customer capital

Redesigning business processes to remain competitive is what business process redesign is aimed to describe. The aim to become agile and innovative is noble, and this theme certainly addresses the issue of whether or not organisations should think over their processes in order to achieve this. After applying the broader concept of immaterial value, it became clear that customer capital, or the relations with customers, employees, suppliers and cooperative competitors, is inadequately addressed. In regard with practice this would mean that the value of existing relations with other parties might be underestimated by any management plan or strategy that would be purely based upon the theme of business process redesign. If agility and innovativeness is set as a goal, always keep in mind that existing relationships with customers, employees, suppliers and cooperative competitors, are influential for the organisations immaterial value, one should never neglect them by instantly introducing and implementing new strategies.

6.1.2 Group Support Systems: careful consideration of the role

Group support systems aim to improve collaboration of individuals. As with the business process redesign, supporting groups, or facilitating the group decision making process is a good thing to do for

reasons given in theory, like becoming independent of time and location thanks to the application of technology. Groups can communicate and work with each other from different locations, at different times. However, there is a danger in group support systems usage that becomes apparent after applying the broader concept of value. Although more information can be exchanged simultaneously using group support systems, they limit the ability of personal knowledge transfer in terms of master/student learning. The information in the memory of the group support system is just that, information. The meaning of that information is in the eye of the beholder; information contributed by one person might be incomprehensible to someone else. Group support systems can be used to apply structure to an information repository, but the real value of group support systems lies how their position within a group is considered. I argue that group support systems must be considered an augmentation on existing collaboration practices and should not be considered a new total solution for group.

6.1.3 Implementation and Adoption: see the success in failure

The implementation of new information systems is a widely discussed theme in literature; it provides theoretical underpinning for why information systems are not always adopted as intended. With regard to this theme I have a twofold advice to use in practice. Firstly, the emphasis on failure might be based upon the way failure is perceived and measured. The embedded concept of material values, measuring effects in terms costs, profits, time and market share, might be insufficient for the identification and measurement of all the effects of an information system. A proclaimed failed information system development project may prove to be a good basis for further metaphorical imagination, being of help to better understand the way things work in the daily work routine, and identifying possible improvements. It would go too far to argue that projects must fail, but they absolutely should not be considered lost or a waste of resources, they provide a basis to learn from, even if that basis is boldly costly. Secondly, the measurement of successful implementation in terms of adoption might be too simple. Although measuring implementation in terms of adoption levels is a good start, it does not indicate how well a new implementation system is used by the individual persons. Establishing and maintaining a dialogue with the people involved can accomplish a richer understanding of how people perceive an information system. The intended purpose of an information system can only be compared to the actual purpose a system has for the people involved by discussing meaning with them, not by counting heads of people that are connected with it.

6.1.4 Management and Control: understand the power of participation and prototyping

The theme of management and control is concerned with how information systems can be put to good by analysing successful development strategies. Managing and controlling information systems

development can be considered a major theme, not only in theory but also in practice. Preventing failure as described in the preceding theme is the goal for any healthy project manager. Involving users has already proven to be helpful for achieving success. The application of a broader concept of value, immaterial values, only confirms this. By involving users in the development project, insights in how the information system is perceived can lead to new understanding of how the information system can best live up to that perception. Likewise, by establishing a dialogue between developers and users, technical opportunities and possibilities can be communicated to the users. However, since both developers and users speak and think in a different way, e.g. imagine a stereotype programmer in conversation with a blonde receptionist. These differences can produce many practical problems when identifying user requirements and system specifications. One might simply not understand the other, or even worse, think that the other perceives the information system in an inferior way. Literature has widely described prototyping as an intermediate between these two opposing parties. It solves many practical problems and can even be fun to do. As argued earlier, the prototype itself is not the thing that is most important; it is the discussion around it that comprises the real advantage. By having a given prototype, different metaphors can be applied to it, making it easier to fantasize about purposes, possibilities and limitations.

6.1.5 Knowledge Sharing and Contribution: see sharing as learning

The question of what must be done to let people share their knowledge with the organisation appears to be a prominent one in the theme of knowledge sharing and contribution. With regard to this theme there are a few considerations I would like to present to use in practice. Firstly, it must be emphasized and acknowledged that, no matter how hard one tries, knowledge contribution cannot be controlled. It can be stimulated and facilitated, but not controlled. It is hard to contain confidential knowledge to a single organisation; it tends to go across organisational boundaries. Neither can knowledge forcefully be extracted from people. While this expression might appear extreme, it is what some publications tend to suggest as possible. It would be a waste of time and effort to focus on that. Secondly, and this is where the concept of immaterial values comes in help, the sharing of knowledge is not as utterly simple as the term might suggest. Sharing knowledge is not like sharing a room! A more fitting term would be learning from each other. The need for social interaction, the importance of mutual understanding by being capable of imagination, is important for any knowledge sharing process. As emphasized multiple times before, what something means to one person might have a different meaning to someone else. New information can be valued by using metaphors that can be understood based upon existing experience. By social interaction, e.g. discussions, each vision can be elaborated, compared and understood.

6.1.6 Inter-organisational Knowledge Sharing: do not underestimate the challenge

The theme of inter-organisational knowledge sharing is concerned with knowledge sharing across organisational boundaries. The remarks of the preceding theme, knowledge sharing and contribution, can be applied to this theme as well. This theme, inter-organisational knowledge sharing, differs from the preceding theme by its goals and its locus of value. Inter-organisational knowledge sharing aims to overcome the limitations of individual organisation's knowledge and expertise. Simply stated, by running in packs more can be achieved. In regard to this theme I would like to share the following thought. I think that it must be emphasized that a distinction exists between automated information exchange systems (like Electronic Data Interchange), and knowledge sharing. A proclaimed goal and reason to get involved in inter-organisational knowledge sharing is to achieve sustainable competitive advantage by being innovative and capable of utilizing and commercializing new possibilities. Being innovative is something different from being cost efficient. This notion is also made by literature in expressing the difference between short-term advantages in costs, and longer-term advantages in aggregating knowledge and expertise. I think that it must be argued that by simply adding more expertise to a knowledge alliance, as they are called, sustained innovativeness does not automatically emerge. As acknowledged by literature, real innovation sparks at the nexus of relations among different parties, and it can begin with almost anybody. As emphasized by the concept of immaterial value, interaction can prove to be a catalyst for this process.

6.1.7 Tabular overview of recommendations

The discussed recommendations per theme are summarized in table 6.1, providing an overview of the themes and the corresponding practical insights.

§	Theme	Recommendation
6.1.1	Business Process Redesign (BPR)	Mind the customer capital, it may be damaged by BPR
6.1.2	Group Support Systems (GSS)	Careful consideration of the role GSS has
6.1.3	Implementation and Adoption (I&A)	See the success in failed ISD
6.1.4	Management and Control (M&C)	Understand the power of participation and prototyping
6.1.5	Knowledge Sharing and Contribution (KS&C)	Focus on learning instead of knowledge sharing
6.1.6	Inter-organisational Knowledge Sharing (IOKS)	Do not underestimate the challenge of IOKS

Table 6.1 Overview of practical recommendation per theme.

6.2 Advice for the information manager

Based upon the results of this research, I will now conclude with an advice for the information manager in the form of a set of five organisational principles for consideration. Of course, the information manager is an umbrella term I use for anybody who is concerned with the development of new information systems, including end-users for that matter. In order to formulate organisational principles, I will first address the key concepts that are leading for information management, followed by an description of the goal information management should have for practice and theory. Then the organisational principles will be derived and elaborated.

6.2.1 Data, Information and Knowledge

Before I can derive organisational principles from the results that this study produced, it is essential to address the concepts that are important to an information manager. They are data, information, and knowledge. Table 6.2 provides an overview of these three different concepts, their definition based upon this research, and the suitable exchange method. The definitions for information and knowledge are based upon the books of Sveiby (1997) and Stewart (1998) as discussed in section 3.2, but are tailored to account for the social negotiating of meaning based upon the of broader concept of value, in particular immaterial values (section 3.3). Per concept an example is given to illustrate how data, information and knowledge manifest themselves. The concepts of data, information and knowledge are the very fundamental concepts that are important to an information manager's thinking and acting.

Core concept	Definition	Example	Suitable exchange method
Data	Bits and bytes that are worthless without structure, suitable for computerized storage, retrieval and processing.	Bits and bytes on a hard disk or network data stream.	Fully computerized (e.g. distribution via a computer network)
Information	Data that has a structure applied to it and therefore becomes readable for humans.	An internet page or text document.	Can be computerized (e.g. visiting a web site or e-mailing an attachment) but information by itself is of very low value.
Knowledge	Knowledge reflects the ability to act and communicate and is socially negotiated and embedded, it is knowledge that makes sense of information.	An evaluation of the worthiness of an internet page or newspaper.	Cannot easily be computerized, it comes from the learning process under guidance of a teacher as in the master/student relationship, person to person.

Table 6.2: An overview of core concepts and suitable exchange methods

6.2.2 Information (and knowledge) management

The field in which the information manager operates can be entitled the field of 'information and knowledge management'. This domain can be defined as the management of the exchange of data and information, and the support for learning. The rationale of information and knowledge management is to understand the dynamics of exchanging data, information and knowledge. The goal of information and knowledge management is to create, maintain and support a context in which data and information can be exchange, openly discussed and personally considered, with special attention for social interaction and the negotiation of meaning. Information and knowledge management is to know the limitations of the exchange of data and information, and the importance of meaning in respect to knowledge while advocating the importance of organisational or societal goals to the people involved.

6.2.3 Organisational Principles

Based upon the findings of this research, the core concepts and the description of information and knowledge management, five organisational principles are formulated that take a broader concept of value in consideration. They are the result of both the theoretical analysis and the empirical exploration that were done during this research. Each principle is followed by its theoretical underpinning and its relation to the broader concept of value.

Facilitate the exchange of data and information, but always consider that data and information by themselves do not have meaning.

As discussed in section 3.2, a sharp distinction can be made between information and knowledge (Sveiby, 1997). Information is meaningless and of low value. It requires knowledge to make sense of information. Facilitating the exchange of data and information is part of good structural capital as described in section 3.2.2.

Openly discuss the meaning that people attach to information, for instance in terms of metaphors, to identify differences in understanding.

Following the conclusion that information is meaningless and of low value by Sveiby (1997), sense making of information becomes more important since knowledge is considered most valuable. Differences in meaning can be best identified when it is openly discussed, preferably in terms of metaphors to express the underlying conceptual system. According to Lakoff & Johnson (1980) our conceptual system is based upon metaphors. The concept of immaterial values addresses the issue of mutual understanding and social interaction (see section 3.3).

Provide a way to negotiate meaning, e.g. prototyping or metaphorical imagination.

As part of the open discussion of meaning that people attach to information, a concrete understanding should be made possible, for example by providing a prototype as subject for discussion. The theme of literature "Management and Control" is relevant to this principle as it includes publications like that of Baskerville and Stage (1996) that elaborate on the advantages of prototypes in terms of providing concrete understanding between users and developers. This is closely related to the concept of immaterial values that provides a way to analyse differences in understanding that may result from differences in interpretation.

The negotiation of meaning is especially productive when people with different backgrounds are involved.

Enough diversity of cultural and personal experience is required to be aware that different perspectives exist as emphasised by Lakoff & Johnson (1980). This relates to the concept of immaterial values, in particular the capability of metaphorical imagination as illustrated in figures 3.1 and 5.3, step 2. If one is not able to become aware of different ways to interpret information, metaphorical imagination is limited in its usefulness.

Support the actual ways in which people are interacting; be careful to impose a mandatory structure or method on this process, and do not confine this process to organisational boundaries.

This final principle is based upon the concept of immaterial value: structural capital and immaterial values: social interaction. As emphasised in chapter 3, a bad organisational structure (e.g. administrative drag) can diminish the effects that social interaction could have on establishing mutual understanding. In the case study of the GvO website, it was a good organisational structure that allowed social interaction around the local history stories to occur.

These principles should be considered by anyone who is involved with information systems; they should be compared to the way that things are currently organized. It may only be five organisational principles, but they highlight the most important implications that the findings of this research entail.

7 Further Research

In the preceding chapter I formulated recommendations with a pragmatic focus, in this chapter I will present directions for future research. Throughout this study I have read many publications and several books. The application of a broader concept of value, immaterial values and immaterial value, has illuminated existing theory in a different way. While the findings of this study may be interesting, they can be considered just the beginning, an exploration for that matter. In this chapter I would like to list some directions of research that may prove to further enrich the insights and understanding that are available today.

This chapter is comprised of two main sections containing concrete research directions and a third section that provides a handy overview. The first section addresses future research directions per prominent theme of literature. This might be handy if one is interested in pursuing a research challenge related to a certain area. The second section provides novel directions of research that are not directly related to a specific theme of literature. The chapter is concluded by a tabular overview of all the ten future research directions.

7.1 Follow-ups on existing themes of literature

In the following sections direction for future research are presented on a per theme basis.

7.1.1 Business Process Redesign

Redesigning business processes to remain competitive is what the theme of business process redesign is about (see section 1.2.1). After the application of a broader concept of value (section 4.1), immaterial value, it became clear that contemporary literature inadequately addresses customer capital (as defined in section 3.2.3). A direction for future research is to investigate what the relation between business process redesigning and customer capital exactly is.

7.1.2 Group Support Systems

Group support systems aim to support the collaboration of individuals, as fully discussed in section 1.2.2. After the application of a broader concept of value, immaterial value, it became clear that group support systems only support certain aspects of collaboration and that it even obstructs others (see section 4.2). The applicability of group support systems should therefore be investigated with special

attention for the interplay between human capital, structural capital and customer capital considering the organisational principles that were presented in the preceding chapter (section 6.2.3).

7.1.3 Implementation and Adoption

The theme of implementation and adoption analyses IS implementation success (see section 1.2.3). After the application of a broader concept of value, immaterial values, (section 4.3) it became clear why differences in cognition among the involved people are considered critical determinants of implementation success. A challenge for future research is to follow the appeal made by Venkatesh et. al. (2003) to establish a unified model to explain implementation success, incorporating the broader concept of value as a determinant.

7.1.4 Management and Control

The theme of management and control analyses successful IS development strategies (section 1.2.4). The application of a broader concept of value (section 4.4) provided theoretical underpinning for the empirical evidence that the participation of end-users is beneficial to successful IS development. In addition the usefulness of prototyping can be elaborated using the concept of immaterial values. A direction for future research should be to identify a strategy for successful IS development that incorporates the capability for metaphorical imagination in an explicit manner, building-in social interaction to achieve mutual understanding among end-users, developers and other people involved.

7.1.5 Knowledge Sharing and Contribution

The theme of knowledge sharing and contribution is concerned with the question of what must be done to let people share their knowledge (section 1.2.5). After the application of a broader concept of value it became clear that knowledge sharing is very important with respect to innovation (section 4.5). Future research could focus on mapping and identifying the dynamics of information around an innovation; the broader concept of value may provide useful insights in how people engage in this process.

7.1.6 Inter-organisational Knowledge Sharing

The theme of inter-organisational knowledge sharing is concerned with knowledge sharing across organisational boundaries. Similar to the theme of knowledge sharing and contribution (7.1.5) this theme provides directions for future research in the challenge of mapping the dynamics of information

around innovations across organisations that are involved with inter-organisational knowledge sharing. Special attention should be set on the differences in understanding between different organisations.

7.2 Novel directions for future research

The following directions for future research do not relate to a single theme of literature, they can be considered novel since they directly relate to the newly constructed broader concept of value (chapter three).

7.2.1 Achievement of mutual understanding

Mutual understanding is the result of social interaction when participants are capable of metaphorical imagination (section 3.3.2). In this study the theory of the experientialist provide theoretical underpinning for this relation, using metaphors as a conceptual building block for understanding. Additional methods and approaches may be applicable besides the theory of the experientialist. Future research could identify additional ways to overcome differences in understanding.

7.2.2 Additional methods of measurement immaterial value

For the concept of immaterial value the books of Sveiby (1997) and Stewart (1998) were used to provide theoretical underpinning for immaterial assets of an organisation. Both writers provide methods to measure immaterial value. However, these methods are derived from case studies with a corporate context, therefore some methods for measurement require financial numbers, like the book value of an organisation. For a non-commercial organisation, or a network of organisations, these numbers may not be available. Future research should find ways to measure immaterial value in additional ways to the methods provided in section 3.2.

7.2.3 Application of a broader concept of value in different empirical context

In chapter 5 the broader concept of value was applied to an IS development project in Amsterdam, the Netherlands. Future research should apply the broader concept of value to similar projects in other locations. A comparison between the results should further refine the broader concept of value and test if it can be generalisation as expected by this research.

7.2.4 Cross-cultural analysis of prominent metaphors

This last direction for future research may prove to be a very interesting one; it is the mapping of fundamental metaphors that are leading across different cultures. Section 3.3 discusses different metaphors that are prominent in the Western world, like 'UP IS BETTER', other cultures have other important metaphors, like 'BALANCE IS BETTER'. These fundamental metaphors influence the way people think and act. To better understand differences in understanding resulting from different cultures and backgrounds, these leading metaphors should be explicitly identified. The results of this research direction may contribute to the applicability of the concept of immaterial values.

7.3 Tabular overview of directions for future research

Table 7.1 provides an overview of the ten directions for future research as discussed in the preceding sections.

§	Direction for future research	Basis for this direction
7.1.1	Investigate the relation between business process redesigning and customer capital.	Theme of Business Process Redesign (BPR)
7.1.2	Applicability of group support systems with attention to immaterial value and the organisational principles (6.2.3).	Theme of Group Support Systems (GSS)
7.1.3	Establish a unified model to explain implementation success incorporating a broader concept of value.	Theme of Implementation and Adoption (I&A)
7.1.4	Identify a strategy for successful ISD based upon the concept of immaterial values.	Theme of Management and Control (M&C)
7.1.5	Mapping and identifying the dynamics of information around an innovation.	Theme of Knowledge Sharing and Contribution (KS&C)
7.1.6	Analysing the relation of differences in understanding between organisations in the context of IOKS.	Theme of Inter-organisational Knowledge Sharing (IOKS)
7.2.1	Identify additional ways to overcome differences in understanding.	Concept of immaterial values
7.2.2	Find ways to measure immaterial value in additional manners.	Concept of immaterial value
7.2.3	Application of a broader concept of value in different empirical context.	Empirical exploration discussed in chapter 5
7.2.4	Mapping fundamental metaphors that are leading across different cultures	Concept of immaterial values and the theory of the experientialist by Lakoff & Johnson (1980)

Table 7.1: Ten directions for future research.

‘Outroduction’

In this final section I will make some concluding remarks in addition to the main conclusions that are presented in the preceding chapters. During this research it became clear that value in general is perceived in many different ways. Something can be valuable for one and simultaneously be worthless for another.

While we may be a long way from a total understanding of value, it is a good start to not confine our current understanding to material terminology. Contemporary IS literature has this focus on material value. However, MIS Quarterly has recently (2009) issued a call for papers that investigate the co-creating of value, including new capabilities and metrics to measure intangible resources of inter-organisational IT-based value. Albeit from being a confirmation of the cause of this research, this call for papers by MIS Quarterly indicates that future research will encompass a broader concept of value.

With regard to the future I expect that more and more information systems will be meaningful beyond the comprehension of economics and business administration. More personal and social information systems will become even more part of the life people live, including a move to wireless mobile access to these systems. In order to keep up with information system development, research cannot longer exclude these intangible aspects.

I conclude this writing with two quotes from Einstein who already expressed the dilemma of value and the importance of imagination.

“Not everything that can be counted counts,
and not everything that counts can be counted.”

“Imagination is more important than knowledge.
For knowledge is limited to all we now know and understand,
while imagination embraces the entire world,
and all there ever will be to know and understand.”

Albert Einstein

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Zigurs, I., Buckland, B.K. (1998) A Theory of Task/Technology Fit and Group Support Systems Effectiveness. MIS Quarterly, Vol. 22, No. 3, pp 313-334

Appendix A: Selected MIS Quarterly Publications

1994

Business Reengineering at CIGNA Corporation: Experiences and Lessons Learned From the First Five Years
J. Raymond Caron, Sirkka L. Jarvenpaa, and Donna B. Stoddard
Management Information Systems Quarterly
1994 sept. Volume 18, No. 3, pp. 233-250.
note: award winning

An Exploratory Study of Roles in Computer-Supported Groups
Ilze Zigurs and Kenneth A. Kozar
Management Information Systems Quarterly
1994 sept. Volume18, Number 3, pp. 277-297.

Perceptions of the Benefits from the Introduction of CASE: An Empirical Study
Paul N. Finlay and Andrew C. Mitchell
Management Information Systems Quarterly
1994 dec. Volume18, Number 4,

The Relationship Between User Participation and User Satisfaction: An Investigation of Four Contingency Factors
James D. McKeen, Tor Guimaraes, and James Wetherbe
Management Information Systems Quarterly
1994 dec. Volume18, Number 4, pp. ??.

1995

Electronic Document Management:
Challenges and Opportunities for Information Systems Managers
Ralph H. Sprague
Management Information Systems Quarterly
1995 march. Volume19, Number 1, pp. ??.

Early Expert Systems: Where are They Now
T. Grandon Gill
Management Information Systems Quarterly
1995 march. Volume19, Number 1, pp. ??.

Exploring the Factors Associated with Expert Systems Success
Youngohc Yoon, Tor Guimaraes, Quinton O'Neal
Management Information Systems Quarterly
1995 march. Volume19, Number 1, pp. ??.

The Use of Information Technology to Enhance Management School Education: A Theoretical View
Dorothy E. Leidner and Sirkka L. Jarvenpaa
1995, sept. Volume 19, Number 3

Using IT to Reengineer Business Education:
An Exploratory Investigation of Collaborative Telelearning
Maryam Alavi, Bradley C. Wheeler, and Joseph S. Valacich
1995, sept. Volume 19, Number 3

Critical Skills and Knowledge Requirements of IS Professionals: A Joint Academic/Industry Investigation
Denis M. S. Lee, Eileen M. Trauth, and Douglas Farwell

1995, sept. Volume 19, Number 3

The Information Technology Interaction Model: A Foundation for the MBA Core Course
Mark S. Silver, M. Lynne Markus, and Cynthia Mathis Beath
1995, sept. Volume 19, Number 3

Pulling the Plug: Software Project Management and the Problem of Project Escalation
Mark Keil
1995, dec. Volume 19, Number 4

Electronic Data Interchange and Small Organizations: Adoption and Impact of Technology
Charalambos L. Iacovou, Izak Benbasat, Albert S. Dexter
1995, dec. Volume 19, Number 4

1996

Determinants of Commitment to Information Systems Development: A Longitudinal Investigation
Michael Newman and Rajiv Sabherwal
1996, march Volume 20, Number 1

An Empirical Examination of the Value of Creativity Support Systems on Idea Generation
Brenda Massetti
1996, march Volume 20, Number 1

Cognitive Elements in the Implementation of New Technology: Can Less Information Provide More Benefits?
Terri L. Griffith and Gregory B. Northcraft
1996, march Volume 20, Number 1

Relational Development in Computer-Supported Groups
Laku Chidambaram
1996, june Volume 20, Number 2

Information Technology for Local Administration Support: The Governorates Project in Edypt
Sarma R. Nidumolu, Seymour E. Goodman, Douglas R. Vogel, and Ann K. Danowitz
1996, june Volume 20, Number 2

Expert Systems Usage: Task Change and Intrinsic Motivation
T. Grandon Gill
1996, sept. Volume 20, Number 3

Sustaining Process Improvement and Innovation in the Information Services Function: Lessons Learned at the Bose Corporation
Warren L. Harkness, William J. Kettinger, and Albert H. Segars
1996, sept. Volume 20, Number 3

Change Agentry -- The Next IS Frontier
M. Lynne Markus and Robert I. Benjamin
1996, dec. Volume 20, Number 4

The Contribution of Shared Knowledge to IS Group Performance
Kay M. Nelson and Jay G. Cooprider
1996, dec. Volume 20, Number 4

Information Exchange and Use in Group Decision Making: You Can Lead a Group to Information, but You Can't Make It Think
Alan R. Dennis
1996, dec. Volume 20, Number 4

Controlling Prototype Development Through Risk Analysis
Richard L. Baskerville and Jan Stage

1996, dec. Volume 20, Number 4

1997

Business Process Change: A Study of Methodologies, Techniques, and Tools
William J. Kettinger, James T. C. Teng, and Subashish Guha
1997, march, Volume 21, Number 1

Bank of America: The Crest and Trough of Technological Leadership
James L. McKenney, Richard O. Mason, and Duncan G. Copeland
1997, sept. Volume 21, Number 3

Effects of User Participation in Systems Development: A Longitudinal Field Experiment
James E. Hunton and Jesse D. Beeler
1997, dec. Volume 21, Number 4

Transformation of the IT Function at British Petroleum
John Cross, Michael J. Earl, and Jeffrey L. Sampler
1997, dec. Volume 21, Number 4
note: award winning, 1st place in the 1996 SIM paper competition

Building Change-Readiness Capabilities in the IS Organization:
Insights From the Bell Atlantic Experience
Charles E. Clark, Nancy C. Cavanaugh, Carol V. Brown, and V. Sambamurthy
1997, dec. Volume 21, Number 4
note: award winning, 2nd place in the 1996 SIM paper competition

Redesigning the Customer Support Process for the Electronic Economy:
Insights From Storage Dimensions
Omar A. El Sawy and Gene Bowles
1997, dec. Volume 21, Number 4

1998

The Dependent Variable in Research Into the Effects of Creativity Support Systems:
Quality and Quantity of Ideas
Berend Wierenga and Gerrit H. van Bruggen
1998, march Volume 22, Number 1

An Ounce of Preventative Research Design Is Worth a Ton of Statistical Analysis Cure
Brenda Massetti
1998, march Volume 22, Number 1
note: reaction / comment on wierenga and van Bruggen

A Theory of Task/Technology Fit and Group Support Systems Effectiveness
Ilze Zigurs and Bonnie K. Buckland
1998, sept. Volume 22, Number 3

Computer-Aided Systems and Communities:
Mechanisms for Organizational Learning in Distributed Environments
Paul S. Goodman and Eric D. Darr
1998, dec. Volume 22, Number 4

1999

The Implications of Information Technology Infrastructure
for Business Process Redesign

Marianne Broadbent, Peter Weill, and Don St.Clair
1999, jun. Volume 23, Number 2

**Information Technology Adoption Across Time:
A Cross-Sectional Comparison of Pre-Adoption and Post-Adoption Beliefs**
Elena Karahanna, Detmar W. Straub, and Norman L. Chervan
1999, jun. Volume 23, Number 2

IT-Intensive Value Innovation in the Electronic Economy: Insights from Marshall Industries
Omar A. El Sawy, Arvind Malhotra, Sanjay Gosain, and Kerry M. Young
1999, sep. Volume 23, Number 3

Organizational Mechanisms for Enhancing User Innovation in Information Technology
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Appendix B: Perspectives on value

This appendix contains the original perspectives, including their full source, as used in chapter three, where these are summarized in English (see table 3.1).

B.1 Bedrijfseconomische Begrippen

Source: http://www.bedrijfseconomische-begrippen.nl

Keyword "waarde", original language: Dutch

Brief description of source: online lexicon for business economics related terms.

Waarde

Getal, de kwantitatieve betekenis van een grootheid. Elke grootheid bestaat uit een naam, een waarde en een eenheid. De eenheid geeft betekenis aan het getal dat de waarde weergeeft (vaak wordt de eenheid aangeduid als de dimensie). Voor nadere informatie zie de publicatie: De toetsende tucht van de dimensieanalyse.

In de betekenis van gebruikswaarde: de emotionele betekenis die iemand toekent aan een product of dienst.

In de betekenis van ruilwaarde:een schatting van het geldbedrag dat een product of dienst in het economisch verkeer kan opbrengen. Bijvoorbeeld: de waarde van een huis in bewoonde staat is anders dan de waarde van een huis dat vrij opleverbaar is [euro/stuk].

Misconceptie: de prijs. De prijs kan in bepaalde situaties wel een indicatie zijn van de waarde, maar een product kan boven of onder zijn waarde verkocht worden, al naar gelang de situatie. Een gestolen fiets heeft doorgaans een grotere waarde dan een heler er voor betaalt.

B.2 Een wegwijzer in informatiebeheer

Source: http://labyrinth.rienkjonker.nl/glossary/term/1900

Keyword “waarde”, original language: Dutch

Brief description of source: Information site for archivists and archives users, listed on the UNESCO Archives Portal.

Waarde is een aanduiding voor het belang van iets, met andere woorden, het geeft aan hoe graag iemand iets wil hebben. Dat iets kan onder andere een goed, informatie, een dienst of een recht zijn.

B.3 Beleidsdomein Welzijn, Volksgezondheid en Gezin

Source: http://wvg.vlaanderen.be/juriwel/nieuws/regering/pdf/glossarium.pdf

Keyword “Waarde”, as found on page 8, original language: Dutch

Brief description of source: Policy for public health, welfare and family, Belgian Government, Department Vlaanderen.

Waarden verwijzen naar algemene principes die belangrijk worden geacht in een organisatie. Morele waarden zijn min

of meer universeel terwijl culturele warden kunnen verschillen tussen organisaties en landen. Culturele waarden in een organisatie staan best in relatie met de missie van de organisatie. Ze kunnen sterk verschillen tussen non-profit organisaties en de privé-sector. Morele waarden zijn van belang voor het uitwerken van een gedragscode.

B.4 Filosofisch Woordenboek

Source: http://www.filosofischwoordenboek.nl/content/waarde.html

Keyword “waarde”, original language: Dutch

Brief description of source: Online philosophical dictionary aimed to be of help when reading philosophical texts and evaluate philosophical discussions.

Betekenisgevend ideaal of motief wat nagestreefd wordt.

B.5 ‘Woorden-Boek’

Source: http://www.woorden-boek.nl/?woord=waarde

Keyword: waarde, original language: Dutch

Brief description of source: Online Dutch dictionary, composed using various sources.

Iets waar een persoon of een groep van personen belang aan hecht, dit leidt vaak tot het stellen van al dan niet geschreven normen voorbeelden van waarden zijn: gezondheid, vrijheid, zekerheid, geluk.

B.6 SchoolTV Eigenwijzer, de digitale wegwijzer voor scholieren

Source: http://www.schooltv.nl/eigenwijzer/begrippenlijst.jsp?letter=w

Keyword "waarde", original language: Dutch

Brief description of source: SchoolTV creates tv-programs aimed for educational purposes, used by schools with children with the age of 4-17 years. SchoolTV is part of the Dutch public educational broadcast organisation Teleac/NOT.

Waarde: betekenis die iets heeft als bezit of ruilobject; zedelijke, esthetische of persoonlijke betekenis van iets: belang, gewicht, gewichtigheid, zwaarte; getal (in de wiskunde), bedrag dat een meter aanwijst.

B.7 MediaBusiness Press: Assurantietermen en Wetsartikelen

Source http://www.assurantietermen.nl/

Also available on the NVA website: http://www.nva.nl section “assurantietermen”

Keyword 'waarde', original language: Dutch

Brief description of source: An online dictionary part of website of the Dutch financial magazine "Reflector", which is the official magazine of the Dutch association for assurance- and financial service professionals (Nederlandse Vereniging van assurantieadviseurs en financiële dienstverleners, NVA).

De, meestal in geld uitgedrukte, economische betekenis die een lichamelijke of onlichamelijke zaak heeft. De waarde van een zaak is geen vast gegeven; zij kan variëren al naar gelang de gezichtshoek waaronder men haar economische betekenis meet of de maatstaf, die men daarbij aanlegt. Het begrip waarde speelt een rol bij schadeverzekeringen, bij sommenverzekering mist het relevantie.

B.8 Kennisbasis Statistiek

Source: http://www.kennisbasisstatistiek.net

Section "Lijst van Termen", keyword "Waarde", original language Dutch

Brief description of source: Part of an expertise platform for statistics and research methodology. Created by Herman Wijnne, who worked at the University of Amsterdam and the University of Utrecht. Now working as consultant (WijnneConsult) for scientific research, online education of statistics, and creator of digital educational material.

Door waarnemen wordt een eigenschap van een object gemeten of een kenmerk van een object vastgesteld. Eigenschappen of kenmerken worden ook variabelen genoemd. Een variabele kan diverse waarden aannemen. De verzameling van mogelijke waarden is het definitiegebied of de schaal van de variabele. De aktueel gemeten of vastgestelde waarde is de uitkomst. Het onderzoeksobject, waarop de waarneming of meting wordt gedaan, wordt ook wel statistische eenheid genoemd.

B.9 New Oxford American Dictionary (NOAD)

Source: McKean, E. (editor) (2005) The New Oxford American Dictionary, Second Edition, Oxford University Press. ISBN 0-19-517077-6. New Oxford American Dictionary, is also available as built-in dictionary for the Amaxon Kindle (e-reader) and Apple Mac OSX.

Keword: value, original language: English

Brief description of source: Well-known American English dictionary, with many contemporary definitions.

value |ˈvalyoō|

noun

1 the regard that something is held to deserve; the importance or preciousness of something : your support is of great value.

• the material or monetary worth of something : prints seldom rise in value | equipment is included up to a total value of $500.

• the worth of something compared to the price paid or asked for it : at $12.50 the book is a good value.

• the usefulness of something considered in respect of a particular purpose : some new drugs are of great value in treating cancer.

• the relative rank, importance, or power of a playing card, chess piece, etc., according to the rules of the game.

2 (values) a person's principles or standards of behavior; one's judgment of what is important in life : they internalize their parents' rules and values.

3 the numerical amount denoted by an algebraic term; a magnitude, quantity, or number : the mean value of x | an accurate value for the mass of Venus.

4 Music the relative duration of the sound signified by a note.

5 Linguistics the meaning of a word or other linguistic unit.

• the quality or tone of a spoken sound; the sound represented by a letter.

6 Art the relative degree of lightness or darkness of a particular color : the artist has used adjacent color values as the landscape recedes.

verb (-ues |ˈvəljuzl, -ued |ˈvəljudl, -uing |ˈvəljuɪŋl |ˈvəljəwɪŋl) [trans.]

1 (often be valued) estimate the monetary worth of (something) : his estate was valued at $45,000.

2 consider (someone or something) to be important or beneficial; have a high opinion of : she had come to value her privacy and independence | [as adj.] (valued) a valued friend.

ORIGIN Middle English : from Old French, feminine past participle of valoir 'be worth,' from Latin valere.

B.10 Van Dale (online edition)

Source: http://www.vandale.nl

Keyword 'waarde', original language: Dutch

Brief description of source: "Van Dale" is considered a prominent and acknowledged Dutch dictionary. This version, the free online version, contains contemporary used words with easy to understand definitions.

waar·de de; v -s, -n 1 betekenis in het economisch verkeer, als ruilmiddel: in ~ verminderen; aanschaffingswaarde, aanschafwaarde, marktwaarde, nieuwwaarde, verkoopwaarde, winkelwaarde 2 betekenis in morele, geestelijke, sociale enz. zin: iem in zijn (eigen) ~ laten hem nemen en waarderen zoals hij is.

B.11 Philosophy of Values

Source: Riukas, S. (1998) Inherent and Instrumental Values in Ethics, West Chester University, In preparation for the Twentieth World Congress of Philosophy, in Boston, Massachusetts from Agust 10-15, 1998. As available online at http://www.bu.edu/wcp/Papers/Valu/ValuRiuk.htm

Brief description of source: Philosophical publication aimed to understand what value is using a threefold relationship between inherent and instrumental values.

In conclusion, the preceding considerations tend to suggest that inherent and instrumental values are inseparably connected, that they are strictly parallel as regards their quantity, quality and other characteristics, that they are reversible, and that their richness determines the richness of human life. For example, happiness, knowledge, love, or aesthetic experience as inherent values are inseparable from actions or attitudes conducive to these values, and the greater or lesser degrees of happiness, love etc. are correlated with the qualities of actions and attitudes generating them. Though happiness, knowledge, love, etc. are inherent values, they become instrumental values whenever they are pursued as the means for the attainment of some reputedly higher values such as when knowledge is pursued for the sake of happiness, or happiness for the sake of eternal bliss. Since values constitute the existential content of human life, we may correctly infer that, in general, the more values we possess and the higher their qualities and degrees, the richer and happier our lives are to be.

B.12 The value of a rose: rising above objectivism and subjectivism

Source: Huizing, A. (2007) The value of a rose: rising above objectivism and subjectivism. Sprouts, working papers on Information Systems, ISSN 1535-6078.

Brief description of source: contemporary scientific working paper, aimed to understand the principles of information management.

... To return to the title of this paper: the rose is the object, its economic value is the price, but getting it from that one special person can be priceless. The real value of a rose is in people's interaction, neither in the rose itself nor in its price. It is in the symbolic meaning people imaginatively attach to objects. Economics cannot capture the gap between the symbolic and economic value of objects, although 'closing the gap' is precisely the dedication of one-to-one marketing, for example. ...

B.13 The Science Of Wealth: A Manual Of Political Economy

Source: Walker, A. (1866) The Science Of Wealth: A Manual Of Political Economy, Originally published in 1866 by John Wilson and Son, Cambridge, Now Available online at http://chestofbooks.com/finance/Amasa-Walker/The-Science-of-Wealth/Chapter-III-Definition-Of-Value.html

Brief description of source: This is an book written by Amasa Walker in 1866. It is aimed to provide a manual of political economy, which should present clearly and intelligibly the leading principles of the science of wealth. As part of this book, chapter III is dedicated to define value.

What, then, is value? When does an article or commodity possess value?

When it is an object of man's desire, and can be obtained only by man's efforts. Any thing upon which these two conditions unite will have value ; that is, a power in exchange. Value is the exchange power which one commodity or service has in relation to another.

That such a power does exist, is not a matter of dispute. Its influence is felt and acknowledged in every country, civilized or savage. This it is which excites to industry, creates commerce, and supports government. This power obeys laws as certain and immutable as those which appertain to any of the great forces of nature. Just as man is sure to feel wants, to put forth efforts, to realize satisfactions ; so he is sure to be found exchanging an excess for a novelty, a home product for that which comes from abroad, the work of his mind for the work of another's body.

Again let us remark, that the term "value" always expresses precisely power in exchange, and no other power or fact. Desirableness is not value. Utility is not value. No objects are more useful and desirable than atmospheric air, the light of day, the heat of the sun ; yet these have no value. They will exchange for nothing, because any one may have all he wishes without effort.

An object, to possess value, must be desired by some one who is willing to render a service or equivalent in order to obtain it, for the reason that he cannot have it without. It is what a man gets, what another will give, that determines value. The use of this term, in its strictest sense, is of the utmost importance. If confounded with any thing, or taken into any partnership, the whole science is thrown into confusion.

It has been common for writers to speak of exchangeable value, intrinsic value, value in use; but all these terms are inappropriate. The adjectives are superfluous: they have no significance whatever. To speak of exchangeable value is

to speak of exchangeable exchangeability. The term "value," in the science of values, always implies power in exchange, and nothing else.

B.14 Encarta Encyclopaedia

Source: http://encarta.msn.com

Keyword 'value', original language: English

Brief description of source: Microsoft initiated Encarta by purchasing non-exclusive rights to the Funk & Wagnalls Encyclopedia, incorporating it into its first edition in 1993

Value (economics), in economics, the worth of a commodity or service measured against other commodities or services. The term generally refers to the total money revenue, or price, for which an item will sell. The value of any object in the marketplace is determined by desirability and scarcity. Anything that is both desirable and scarce, such as a diamond, can command power in the exchange ratio—that is, it can be exchanged for an item of equal or greater worth. A distinction is usually made between market value and normal, or natural, value. Market value is the purchasing power of a commodity in the open market on a given day; normal value is the value that would prevail if competitive forces worked without friction. Market value may also be referred to as the exchange price of a commodity, and natural value as the just price.

In Marxist theory, in the simplest terms, the value of a product is composed of, or created or determined by, all the labour involved in its production.

The term value added refers to the value created in a product in the course of manufacturing or processing, exclusive of such costs as those of raw materials, packaging, or overhead. A value-added tax has been imposed on goods in Britain, France, Germany, and other European nations.

Values (ethics), standards or qualities considered worthwhile and desirable.

B.15 Encyclopædia Britannica Theory of Value (Axiology)

Source: axiology. (2009). In Encyclopædia Britannica. Retrieved January 05, 2009, from Encyclopædia Britannica Online: http://www.britannica.com/EBchecked/topic/46184/axiology

Keyword 'value', section axiology, as 'theory of value'. Original Language: English

Brief description of source: A well-known, well-respected, award-winning encyclopaedia.

Axiology, (from Greek axios, "worthy"; logos, "science"), also called Theory Of Value, the philosophical study of goodness, or value, in the widest sense of these terms. Its significance lies (1) in the considerable expansion that it has given to the meaning of the term value and (2) in the unification that it has provided for the study of a variety of questions—economic, moral, aesthetic, and even logical—that had often been considered in relative isolation.

The term "value" originally meant the worth of something, chiefly in the economic sense of exchange value, as in the work of the 18th-century political economist Adam Smith. A broad extension of the meaning of value to wider areas of philosophical interest occurred during the 19th century under the influence of a variety of thinkers and schools: the Neo-Kantians Rudolf Hermann Lotze and Albrecht Ritschl; Friedrich Nietzsche, author of a theory of the transvaluation of all values; Alexius Meinong and Christian von Ehrenfels; and Eduard von Hartmann, philosopher of the unconscious, whose Grundriss der Axiologie (1909; "Outline of Axiology") first used the term in a title. Hugo Münsterberg, often regarded as the founder of applied psychology, and Wilbur Marshall Urban, whose Valuation, Its Nature and Laws (1909) was the first treatise on this topic in English, introduced the movement to the United

States. Ralph Barton Perry's book General Theory of Value (1926) has been called the magnum opus of the new approach. A value, he theorized, is "any object of any interest." Later, he explored eight "realms" of value: morality, religion, art, science, economics, politics, law, and custom.

A distinction is commonly made between instrumental and intrinsic value—between what is good as a means and what is good as an end. John Dewey, in Human Nature and Conduct (1922) and Theory of Valuation (1939), presented a pragmatic interpretation and tried to break down this distinction between means and ends, though the latter effort was more likely a way of emphasizing the point that many actual things in human life—such as health, knowledge, and virtue—are good in both senses. Other philosophers, such as C.I. Lewis, Georg Henrik von Wright, and W.K. Frankena, have multiplied the distinctions—differentiating, for example, between instrumental value (being good for some purpose) and technical value (being good at doing something) or between contributory value (being good as part of a whole) and final value (being good as a whole).

Many different answers are given to the question "What is intrinsically good?" Hedonists say it is pleasure; Pragmatists, satisfaction, growth, or adjustment; Kantians, a good will; Humanists, harmonious self-realization; Christians, the love of God. Pluralists, such as G.E. Moore, W.D. Ross, Max Scheler, and Ralph Barton Perry, argue that there are any number of intrinsically good things. Moore, a founding father of Analytic philosophy, developed a theory of organic wholes, holding that the value of an aggregate of things depends upon how they are combined.

Because "fact" symbolizes objectivity and "value" suggests subjectivity, the relationship of value to fact is of fundamental importance in developing any theory of the objectivity of value and of value judgments. Whereas such descriptive sciences as sociology, psychology, anthropology, and comparative religion all attempt to give a factual description of what is actually valued, as well as causal explanations of similarities and differences between the valuations, it remains the philosopher's task to ask about their objective validity. The philosopher asks whether something is of value because it is desired, as subjectivists such as Perry hold, or whether it is desired because it has value, as objectivists such as Moore and Nicolai Hartmann claim. In both approaches, value judgments are assumed to have a cognitive status, and the approaches differ only on whether a value exists as a property of something independently of human interest in it or desire for it. Noncognitivists, on the other hand, deny the cognitive status of value judgments, holding that their main function is either emotive, as the positivist A.J. Ayer maintains, or prescriptive, as the analyst R.M. Hare holds. Existentialists, such as Jean-Paul Sartre, emphasizing freedom, decision, and choice of one's values, also appear to reject any logical or ontological connection between value and fact.

Appendix C: Screenshots Geheugen van Oost

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Nieuwste verhalen

1 ... 30 / 30

Plok, plok, plok op het Linnaeushof

1955/Linnaeushof, ...
Het was daar altijd zó stil met die tennisbaan in het midden waar altijd zo'n mooi geluid uit klonk.

De Oranjesluizen

1955–1957/
Zeeburgereiland & Diemerzeedijk
...en dan was je bij de sluizen, enorme deuren met daarop de loopbruggen

We make the world clean!

1978–2009/
Transvaalbuurt, ...
"Ik ben er trots op dat ik de eerste buitenlandse ondernemer was in de Pretoriusstraat."

Nola Hatterman, een lezing

2009/Middenmeer, ...
Hoe kun je een land onderdrukken als je de mensen waardeert?

Tilanusstraat

Oosterparkbuurt, ...
Wij verhuisden naar de Tilanusstraat aan het begin van de oorlog. 1 reactie

Rond brood met ribbels

1956–1965/Indische Buurt, ...
Een wit 'pannetje' was erg lekker en casinobrood interessant vanwege de naam. 1 reactie

Drie generaties broodbakkers in de Watergraafsmeer

1923–1999/
Don Boscobuurt, ...
Op zondag moest de oven voorgestookt worden.

Afscheid van Oost

1960–1962/
Oosterparkbuurt, ...
Er stonden vaak mannen naar boven te kijken naar buurvrouw in Eva-kostuum.

Tussen de middag

1962/Transvaalbuurt
We kwamen langs ouderwetse huizen met balkons waar half ontblote mannen en vrouwen als steuntjes dienden.

WA marcheert in de Transvaalbuurt

1935/Transvaalbuurt, ...
Maxie was voor schlemiel geboren. Op het moment dat zijn trap tegen het

Mokkatompoezen van Bakkerij Kerkvliet

1950–1960/Indische Buurt, ...
In de Indische Buurt waren kennelijk heel wat verjaardagen, want in mijn herinnering waren die heerlijke tompoezen altijd te koop.

Electrische luxe brood- en beschuitbakkerij

1923–1999/
Don Boscobuurt, ...
Hij bleef in de bakkerij en heeft daar nooit spijt van gehad. 1 reactie

Inwijding van de nieuwe Mariakapel

2009/Middenmeer, ...
De icoon ging in vlammen op.

De klant is koning als hij zich koninklijk gedraagt

1945–2009/
Transvaalbuurt, ...
"Wij doen alles wat in ons vermogen ligt om de klant goede spullen en service te leveren " vertelt Yvonne Wolthuis over haar ...

verteller

Joop Rijkenborgh

is geboren in 1939. Hij woonde in de Pretoriusstraat waar zijn vader een schoenmakerij had. Zijn eerste herinneringen als kleuter zijn van de oorlog. Herinneringen die in de loop der tijd zijn aangevuld door de mensen uit zijn naaste omgeving.

5 reacties

Lege huizen met blinde ogen

1940–1943 / Transvaalbuurt

Reageer op dit verhaal

Sommigen gingen misschien boodschappen doen, maar anderen moesten zich verzamelen op het Muiderpoortstation.

Joden bij het Muiderpoortstatin - Deportatie van Joodse inwoners, bij ht Muiderpoortstation in 1943. Foto: Gemeentearchief Amsterdam

Mijn eerste herinneringen zijn van mensen die overdag met koffers of tassen liepen. Zij hadden gele sterren op hun jassen , een teken dat zij 'Joods' waren. Sommigen van hen zullen gewoon boodschappen hebben gedaan, maar anderen hadden de opdracht gekregen om naar een verzamelpunt te gaan bij het Muiderpoortstation...

De Transvaalbuurt was door de Duitsers gemakkelijk af te sluiten, aan de ene kant had je namelijk de spoordijk en aan de andere de Ringvaart. Er woonden veel joodse mensen in de buurt. In het Verzetsmuseum hangt tegenwoordig een kaart van Amsterdam met zwarte stipjes die aangeven waar joodse gezinnen wonen. Bepaalde delen van Amsterdam, waaronder de Transvaalbuurt, zijn door de zwarte stipjes niet meer zichtbaar.

In 1942 waren al veel joodse gezinnen weggehaald. In de vrijgekomen woningen werden andere joodse gezinnen geplaatst uit andere wijken of uit de kuststreek om op een later tijdstip op transport te worden gezet, op 20 juni 1943. Toen stonden ook die huizen leeg, op het Krugerplein, de Retiefstraat, de Schalkburgerstraat door heel de buurt stonden huizen leeg nadat de joodse bewoners door de Duitsers uit hun huizen waren gehaald en op transport gezet naar de vernietigingskampen. Hun huisraad werd als 'geschenk' aan het Duitse volk gegeven.

Angst, Tweede Wereldoorlog, Verhuizen, **overeenkomstige verhalen...**

Schuilkelders en wachterhuisjes

1940–1945/Middenmeer, ...
Er stonden op meerdere plekken wachthuisjes. 6 reacties

Indrukken uit de oorlog

1940–1945/Transvaalbuurt
In de laadbak stond een magere vrouw... 1 reactie

Voor het geval dat

1940–1945/Transvaalbuurt
Het brood was klein, klef en grijs en had maar weinig smaak. 3 reacties

Mijn vaders ingeving

1940–1945/Transvaalbuurt
De dokter keek hem aan en zei: "kom volgende week terug."

Schoenzolen stoken

1940–1945/Transvaalbuurt
Omdat brandstof zo schaars was stookte mijn vader oude zolen en hakken in een potkacheltje in de schoenmakerij. 1 reactie

Tranen in de ogen

1945–2000/Transvaalbuurt
In het jaar 2000 sta ik weer op de plek waar de bevrijders de stad binnenreden. 3 reacties

Gestraft voor een heldendaad

1945/Transvaalbuurt
De reactie van mijn ouders was verbijsterend, ik kreeg zwaar op mijn donder! 4 reacties

Hansje

1940–1943/Transvaalbuurt
Er stonden nog wel meubels, maar de familie was er niet meer. 2 reacties

verteller

Joop Rijkenborgh

is geboren in 1939. Hij woonde in de Pretoriusstraat waar zijn vader een schoenmakerij had. Zijn eerste herinneringen als kleuter zijn van de oorlog. Herinneringen die in de loop der tijd zijn aangevuld door de mensen uit zijn naaste omgeving.

3 reacties

Tranen in de ogen

1945–2000 / Transvaalbuurt

Reageer op dit verhaal

In het jaar 2000 sta ik weer op de plek waar de bevrijders de stad binnenreden.

Dakota - Overvliegende Dakota's waren het eerste teken van de bevrijders!

Ik herinner me dat ik op het Krugerplein aan het spelen was toen ik plotseling een vreselijk geronk hoorde. Ik trilde over mijn hele lijf van de schrik. Er vloog een Dakota enkele meters over de huizen... Het waren de bevrijders!!!

De bevrijdingstoestellen dropten voedselpakketten voor de uitgehongerde bevolking. Ik heb de droppings niet zien gebeuren, maar weet nog goed dat het voedsel in blikken met een ronde klem deksel zat. De blikken waar groot, circa veertig centimeter hoog en dertig centimeter breed. Jongens die een aantal lege blikken hadden, bevestigden ze aan elkaar en maakten er vlotten van. Ik weet nog dat een van hen dat niet zo goed had gedaan en in het water van de Ringdijk belandde vlakbij het kippebruggetje. Dat gele bruggetje bestaat niet meer. Je keek toentertijd over weilanden heen, met boerenslootjes en enkele huizen. Boerderij 'De Eenhoorn' was toen ook een echte boerderij met kippen, koeien en paarden. Het bruggetje was bij de Schalk Burgerstraat en is nu een brede brug die overgaat in de Nobelweg.

Waar nu de uitvalsweg naar het Gooi is, bij het Amstelstation, daar verbranden de mensen klein Duits materieel, koppels, gasmaskers enzovoort. De oorlog was voorbij!!!

Nu pas, al die jaren later, besef ik pas goed dat ik de oorlog in de Transvaalbuurt vooral heb overleefd omdat ik geen Jood was, maar toevallig Katholiek. In het jaar 2000 sta ik weer op de plek waar de bevrijders de stad binnenreden. Het is 5 mei en ik sta bij de Berlagebrug de oude gediende bevrijders van de stad toe te juichen. Na zoveel jaren kan ik enkele van hen de hand schudden en hen bedanken voor wat zij en hun omgekomen kameraden voor ons hebben betekend. Bij hen en bij mij, na al die jaren, stonden tranen in de ogen.

Buurtfeesten & festivals, Tweede Wereldoorlog, Geboorte & dood, **overeenkomstige verhalen...**

Indrukken uit de oorlog

1940–1945/Transvaalbuurt
In de laadbak stond een magere vrouw... 1 reactie

Hansje

1940–1943/Transvaalbuurt
Er stonden nog wel meubels, maar de familie was er niet meer. 2 reacties

Schoenzolen stoken

1940–1945/Transvaalbuurt
Omdat brandstof zo schaars was stookte mijn vader oude zolen en hakken in een potkacheltje in de schoenmakerij. 1 reactie

Schuilkelders en wachterhuisjes

1940–1945/Middenmeer, ...
Er stonden op meerdere plekken wachthuisjes. 6 reacties

Voor het geval dat

1940–1945/Transvaalbuurt
Het brood was klein, klef en grijs en had maar weinig smaak. 3 reacties

Lege huizen met blinde ogen

1940–1943/Transvaalbuurt
Sommigen gingen misschien boodschappen doen, maar anderen moesten zich verzamelen op het Muiderpoortstation. 5 reacties

Gestraft voor een heldendaad

1945/Transvaalbuurt
De reactie van mijn ouders was verbijsterend, ik kreeg zwaar op mijn donder! 4 reacties

verteller

Hans Willms

(4-10-1962)is geboren op het Kastanjeplein en woont nog altijd vlakbij de loodgieterswinkel die zijn vader begon. Zijn moeder Mw. M.A.Willms-Esselaar (29-9-1935) groeide op in het katholieke weeshuis van Amsterdam en werkte vanaf het begin mee in de zaak. Ze is er nog steeds dagelijks aanwezig.

1 reactie

Prinses Maxima werd er enthousiast van

1958–2008 / Oosterparkbuurt, Kastanjeplein

Reageer op dit verhaal

In juni 2008 was prinses Maxima op bezoek in de Oosterparkbuurt en sprak onder andere met mevrouw Willms over de buurtfunctie van de winkel, zij benadrukte hoe belangrijk zij dit vindt.

Mevrouw Willms en Prinses Maxima - Prinses Maxima op bezoek in de Oosterparkbuurt in juni 2008 in gesprek met mevrouw Willms (rechts). Helemaal links op de achtergrond is Hans Willms zichtbaar.

Winkels, Buurtfeesten & festivals, Buren, Ruzie & vechten, **overeenkomstige verhalen...**

Inbreken op verzoek

1958–2008/Oosterparkbuurt, ...
Het was niet de eerste keer dat Hans Willms met een ladder naar een openstaand raampje klom om van binnenuit de deur te openen, toen ...

De loodgieter weert en keert het water

1958–2008/Oosterparkbuurt, ...
Loodgieter Willms bedacht zelf de spreuk 'de loodgieter weert en keert het water, ter rechter plaatse' en liet het in glas graveren ... 2 reacties

De naam wordt het logo

1896–2008/Oosterparkbuurt, ...
In de wachtrij voor bakkerij Hartog staan dagelijks veel mensen, ook trendgevoelige mensen, de carriere vogels kan je ze noemen. Die ...

Het middelste ei

1934–1990/Oosterparkbuurt, ...
Ja de klant was echt Koning, die mocht niet geschoffeerd worden en de meest uiteenlopende wensen van de klant trachten we in te willigen.

Consumptie niet verplicht

1896–2008/Oosterparkbuurt, ...
In de pas geopende ontbijtkantine van bakkerij Hartog mag je ook je eigen brood meenemen en opeten. Buurtvergaderingen kunnen er gratis ...

Een gezelligheidswinkel

1946–2009/Oosterparkbuurt, ...
Schoenmaker Herman wil ondanks zijn leeftijd het contact met de klanten niet kwijt. En hij houdt van zijn vak. "Als ik in de

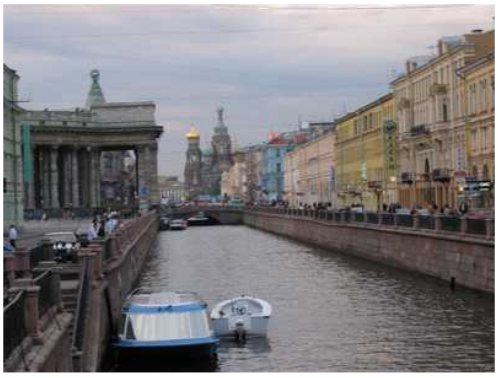
verteller
Valentin Jijkoun
(1977) is assistent in opleiding bij de universiteit van Amsterdam. Bij het instituut voor Informatie en Taalverwerking werkt hij met veel plezier aan zijn proefschift (lees er meer over op www.science.uva.nl/~jijkoun).

Wetenschapper uit Rusland

2002–2005 / Sciencepark (WTCW), Kruislaan, Transvaalbuurt

Reageer op dit verhaal

Huisvesting, bankrekening, verblijfsvergunning - niks ging op rolletjes.



Valentin - Sint-Petersburg is een ideale plaats om op te groeien - gracht in zomernacht.

Ik ben geboren in 1977 in Sint-Petersburg, de stad die soms "de culturele hoofdstad van Rusland" is genoemd. Met beroemde musea en theaters, prachtige paleizen en standbeelden en een bijzondere geschiedenis, is het inderdaad een ideaal plaats om op te groeien. Ook heeft Sint-Petersburg een van de beste universiteiten in Rusland, dus na de school wist ik zeker waar ik naartoe ging. Ik heb daar wiskunde en informatica gestudeerd en wilde graag met de wetenschap doorgaan. Helaas is het niet gelukt in Rusland, maar toen kwam ik een advertentie over een leuke baan bij de Universiteit van Amsterdam tegen. Ik had ervoor nooit in het buitenland gewoond, maar ja, Amsterdam was te moeilijk om af te wijzen. Het was spannend om naar een nieuw land met andere taal en cultuur te komen. Ik herinner me de eerste dag in Amsterdam in 2002, het wandelen langs de grachten en het kwijtraken, het verdwalen, ergens tussen de straatjes van de Jordaan... Later kwamen de problemen dichtbij, natuurlijk. Huisvesting, verblijfsvergunning, bankrekening - niks ging op rolletjes. In mijn eerste zomer kon ik niet naar Rusland op vakantie gaan, door de problemen met het Nederlandse visum. Nu woon ik al een jaar in Transvaalbuurt, dat is voor mij een prima locatie: een leuke buurt, alleen maar enkele minuten fietsen naar het centrum en ook slechts vijf minuten naar Science Park, het Wetenschappelijk Centrum in Watergraafsmeer, waar ik werk bij het Informatica Instituut.

Auteur Valentin Jijkoun, Dineke Rizzoli
Gepubliceerd in 2005

Valentin Jijkoun - Valentin Jijkoun (2005) voelt zich thuis in Amsterdam-Oost

Werk / werkloos, Verhuizen, **overeenkomstige verhalen...**

Communicerende zoekmachines

2002–2005/Kruislaan, ...
Het systeem moet met echte mensen kunnen communiceren.

Postbezorger met een zachte G

1998–2005/Nobelweg, ...
Ze hoorden natuurlijk direct dat ik geen Amsterdammer ben. 2 reacties

Boterham met tevredenheid.

1992–2005/Pretoriusstraat, ...
Ik moest leren dat genieten van goede dingen niet zondig is. 2 reacties

Vuurwerk doet de duivels dansen*

1962–1992/Kruislaan, ...
In 'Olanda' was meer werk, dus verhuisde het rooms en rood gezin naar Amsterdam.

Als het hart luistert

1971–1988/Pretoriusstraat, ...
Onder mijn winkeltoonbank van Borduur Boutique Bernardina in de Pretoriusstraat hield ik, het 'wolvrouwtje' een geheim aantekenboekje bij.

Ruiten ingooien

1975–1985/Ingogostraat, ...
De ruiten van Ratermans speelgoedwinkel werden alsmaar ingegooid. Wie zou daar nu achterzitten? 41 reacties

Van grutter De Gruyter tot super Helal Et Gida

1936–2008/Transvaalbuurt
Helal Et Gida is een levendige supermarkt aan het begin van de Pretoriusstraat no. 34. U moet er eens heen gaan want dat is de moeite ...

Dood van een hond

1980–2000/Transvaalbuurt
Mijn overbuurvrouw Willy had één kameraad, haar hondje Tatsje, een Chihuahua. 4 reacties

Champagne voor de Borduur Boutique

1971/Transvaalbuurt, ...
Die avond dronken we in de huiskamer achter de winkel champagne.

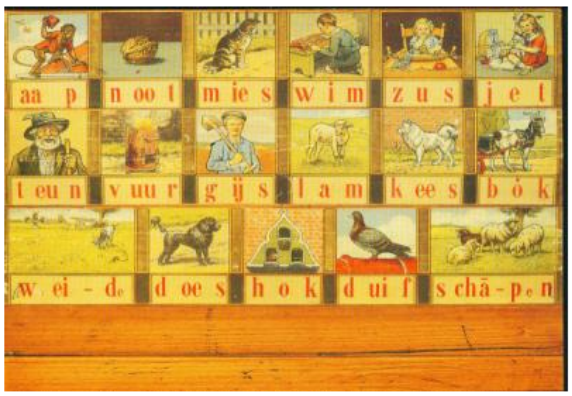
verteller
Jan
is geboren in augustus 1922 en kwam in de Gijsbrecht van Aemstelstraat te wonen toen hij een jaar of zeven was: 'dat was een beetje een elitebuurt, daar woonden bijvoorbeeld de directeur van Tuschinsky en Boris Lensky, de beroemde violist, 'hoger geplaatste mensen'. Jans gezin kwam daar toevallig terecht, zijn vader was Rijksambtenaar, dat noemden zij Rijks-armoed.

Een goeie geheugentraining

1926–1932 / Weesperzijde, Weesperzijde & Van der Kunbuurt

Reageer op dit verhaal

De alfabet moest je met de hele klas opnoemen.



Jan1 - Het ouderwetse leesplankje waarmee kinderen vroeger op school leerden lezen.

Als je vier of vijf jaar was ging je naar de bewaarschool, maar die was niet verplicht zoals tegenwoordig. De bewaarschool noem¬den ze ook fröbelschool of kakschool omdat die kleuters nog niet helemaal zindelijk waren. Daar speelde je, vlocht je matjes en zong je. Als je van de bewaarschool naar de grote school ging, moest je ingeënt worden tegen pokken, anders kwam je er niet op. De klassen op de lagere school waren groot, toch snel zo'n 40 kinderen. Daar moeten we jaartallen van buiten leren: 1600 slag bij Nieuwpoort, 1296: Floris de Vijfde vermoord, de Beeldenstorm in 1666... De week daarna kreeg je dan een overhoring. Eigenlijk was het een hele goeie geheugentraining, net als ons leesplankje. Aap, noot, mies. Ik weet het nog uit mijn hoofd: AAP - NOOT - MIES - WIM - ZUS - JET — TEUN - VUUR - GIJS - LAM - KEES - BOK — WEIDE - DOUCHE - HOK - DUIF - SCHAPEN. Plus het alfabet, dat moest je ook met de hele klas opnoemen. En dan had je een leesplankje met een doosje met lettertjes.

School, **overeenkomstige verhalen...**

Op een katholieke school

1926–1932/Weesperzijde, ...
Een katholiek kind kon niet naar een protestantse school, o nee!

Ongedierte

1922–1938/Weesperzijde, ...
Als je er op duwde, vloog de bult in het behang naar boven. **2 reacties**

Mijn eerste baan

1938/Weesperzijde, ...
De familie besliste welk vak ik moest gaan doen. Aan mij werd niets gevraagd.

Huismiddeltjes

1922–1938/Weesperzijde, ...
Haarlemmerolie was overal goed voor, net als Karpoetolie.

Mattenklopdagen

1929–1939/Weesperzijde, ...
De politie zag er op toe dat je niet op andere tijden je matten uitklopte. **2 reacties**

Plusfours

1929–1939/Weesperzijde, ...
We liepen als kind zomer en winter in een korte broek. **1 reactie**

Stiekem gitaar oefenen

1935–1940/Weesperzijde, ...
We leefden eigenlijk in de verkeerde tijd. **1 reactie**

zoekresultaat voor: (Zoek in de reacties)

Vrijheid

Vrijheid Zoek

1 ... 10 / 10

Vischcollege De Vrijheid

1933/Dapperbuurt
Het was een bekende vereniging in de Dapperbuurt. **2 reacties**

Simon Vinkenoog

1984–1986/
Weesperzijde & Van der Kunbuurt
Als je Simon wilt kennen, hoef je eigenlijk alleen maar te kijken. **2 reacties**

Vuile Mong en zijn Vieze Gasten

1 jan 1975/Dapperbuurt
Levendig en aanstekelijk theater van een Vlaamse politiek geëngageerde toneelgroep

5 mei Oosterparkfestival zoekt verhalen over vrijheid!

Op 5 mei vind er in Amsterdam het bevrijdingsevenement het Oosterparkfestival plaats. Het thema is "Vrijheid maak je met ...

Dromen komen de kleine straten haast niet door

2008/Betondorp
Het allermooiste poppendorp.

Mijn museum

1998–2000/Oosterparkbuurt
In het gebouw met die dikke muren hoorde niemand mijn geschreeuw om hulp!

Thuis in de Watergraafsmeer

1990–2000/
Galileiplantsoen, ...
Wij zijn hier een keer naartoe gefietst. Ik kan me altijd herinneren dat ik meteen een gevoel van ruimte en vrijheid kreeg toen ik de ... **4 reacties**

Dichten voor het Rechthuis

1999/Don Boscobuurt
Omdat ik in de Meer ben geboren, schreef ik een tekst voor de gedenksteen. **4 reacties**

Het bevrijdingsvlaggetje

1945/Weesperzijde, ...
Plotseling vulden de straten zich met mensen die zich naar de Weesperzijde spoedden. **28 reacties**

AMSTERDAMS Historisch Museum
Dynamo beweegt tot meedoen

Design by *Mediamatic* Community Management (CMS) *anyMeta*