**30th EGOS Colloquium 2014, July 3rd – July 5th, Rotterdam, The Netherlands**

**Submission to Sub-theme 27:**

*Business Models and Strategies: Organizations and Alternative Forms of Organizing*

# IT-ENABLED BUSINESS MODEL INNOVATION IN THE FACE OF SOCIETAL CHALLENGES: THE ROLE OF NETWORK LOGICS

## ABSTRACT:

***Abstract.*** We argue that ICT offers significant contributions to solving societal challenges if organizations couple ICT with business models that fit heterogeneous or, sometimes, competing logics. Therefore, we suggest that IT-enabled business models for societal challenges are embedded into combinations of institutional logics that arise on the level of value creation networks, e.g. what we coin *network logics*. We draw this insight from an inductive, interpretive case study on business model innovation for treating chronic diseases. Contributions arise in three areas: first, our argument shows that IT-enabled business model innovation for societal challenges is best understood by integrating research on IT-enabled business models with institutional theory. Second, we suggest that the institutional logics literature holds the currency to enhance the idea of "value creation logics", which is prominent in business model research. Third, our study suggests that information systems research and organization theory need to be further aligned.

***Key Words:*** IT-enabled business model innovation, information systems, institutional logics

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# IT-ENABLED BUSINESS MODEL INNOVATION IN THE FACE OF SOCIETAL CHALLENGES: THE ROLE OF NETWORK LOGICS

## INTRODUCTION

Chronic diseases have become a societal problem of tremendous scope. Their death tolls are nothing short of breath taking as the World Health Organization estimates the share of annual deaths due to chronic diseases to about 90 per cent in nearly every developed country (WHO, 2011). Although the terminology is not fixed, chronic diseases are generally understood as diseases with a long duration and a slow progression. Moreover, the progression of chronic diseases is often influenced by complex interdependencies of physiological and non-physiological factors that give rise to further diseases. For instance, diabetes type 2 causes follow-up diseases of various types. Other chronic diseases are cancer, depression or the so-called "chronic obstructive pulmonary disease" (COPD), which often demands long-term ventilation. Cumulatively, chronic diseases thus have devastating effects on the quality of life and effective treatments depend on knowledge-sharing among medical professionals.

Against this background, medicals (Blumenthal, 2010, 2012; Mandl & Kohane, 2012), health economists (Busse, Blümel, Scheller-Kreinsen, & Zentner, 2010) and health policy researchers (Buntin, Burke, Hoaglin, & Blumenthal, 2011) alike have agreed that health information technologies hold the potentials to substantially increase the quality of services for the chronically ill. Leading innovation researchers have added that health information technology demands adapting business models to the idiosyncrasies of health care (Hwang & Christensen, 2008); especially the non-market features of many contemporary health care fields (Thomson, Busse, Crivelli, van de Ven, & Van de Voorde, 2013).

In this paper, we deploy a management information systems lens to understand why it seems to be some difficult to implement IT-enabled business models for treating the chronically ill. Yet, although our paper is tied to this context, we believe that our answers apply to other contexts where IT-enabled business models are developed to cope with societal challenges, too. The rationale is that we suggest a theoretical framing that, in conjunction with our empirical data, allows us to conceptualize the matter on a sufficiently abstract scale. Our theoretical departure is

that most theorizations of IT-enabled business models integrate information systems research with organizational economics (see, e.g., the recent overview in Bharadwaj, El Sawy, Pavlou, & Venkatraman, 2013). In this regard, Rai and Tang (2014) recently theorized two distinct capabilities: dyadic IT-customization and network IT-standardization.

However, applying this perspective to the study of societal challenges underlies several limitations. One of them is the market-focus of the aforementioned works, which makes it difficult to use these theories in non-market contexts (Seelos & Mair, 2007; Thompson & MacMillan, 2010). Thus, we extend the work on dyadic IT-customization and network IT-standardization by the recent institutional logics concept (Thornton, Ocasio, & Lounsbury, 2012) due to its strength in explaining how market and non-market logics jointly matter for value creation (Lounsbury, 2007; Marquis & Lounsbury, 2007; Thornton & Ocasio, 2008). We suggest that developing IT-enabled business models for societal challenges demands combinations of different institutional logics into distinct value creation logics. These combinations arise on the level of value creation networks, thus we coin them *network logics*. These logics embed dyadic IT-customization and network IT-standardization. We draw these insights from an inductive, interpretive case study on IT-enabled business model innovation for treating chronic diseases in Germany.

Our results emphasize that IT-enabled business models for societal challenges face a paradoxical twist. First and foremost, combinations of institutional logics into distinct logics on the level of the value creation network are needed (what we call "network logics") to facilitate the execution of business models. Moreover, creating these logics demands firms to include important elements from non-market logics into network logics to avoid alienation of their allies. However, while we find enabling effects of network logics on dyadic IT-customization, we also find constraining effects on network IT-standardization.

## CONCEPTUAL BACKGROUND

### Business models and business model innovation

Business models have become a central theme in management (Arend, 2013; Baden-Fuller & Mangematin, 2013) and information systems research (Rai & Tang, 2014). Moreover, scholars across disciplines have agreed that business model innovation, e.g. new ways to absorb inputs from a firm's environment in order to change its' business model (Zott, Amit, & Massa,

2011: 1033 f.), is a key for a firm's competitiveness due to the pace of recent technological changes (Chesbrough, 2010; Gambardella & McGahan, 2010; Johnson, Christensen, & Kagermann, 2008; Teece, 2010; Zott & Amit, 2010).

Research that theorizes this linkage among technological change and business model innovation often integrates information systems research with organizational economics (see the recent overview in Bharadwaj et al., 2013). In this context, Rai and Tang (2014) theorize two organizational capabilities to deploy information technologies in order to govern value creation networks (see also Rai & Tang, 2010). The first capability is dyadic IT customization. It refers to defining rules for inter-firm data exchanges that delimit the requirements for the specific information exchanges, the governance of information exchanges as well as the transaction and task structures (Rai, Pavlou, Im, & Du, 2012). The second capability is labeled network IT standardization. It refers to the capability to integrate modularized resources with information exchange standards in order to establish inter-organizational routines and large-scale data exchanges (Rai et al., 2012; Rai & Tang, 2010, 2014).

However, the integration of information systems research with organizational economics has important limitations. It focuses on market settings and thus raises important questions if societal challenges are scrutinized since the institutional rules to solve societal challenges are fundamentally different from market rules (Maguire, Hardy, & Lawrence, 2004; Seelos & Mair, 2007; Thompson & MacMillan, 2010). Thus, we suggest extending the aforementioned approaches to business model innovation by including the idea of a *network logic*; a notion that resemblances the idea of a value creation logic but draws on different theoretical foundations.

**Institutional logics and network logics**

Our idea of network logics is rooted in the concept of institutional logics, which has proliferated in organization theory (see, e.g., Thornton et al., 2012). If private firms begin operations in health care, they will often have to cooperate with the professions (Reay & Hinings, 2005; Reay & Hinings, 2009). Thus, they absorb professional and market logics into their business models (Goodrick & Reay, 2011; Scott, Ruef, Mendel, & Caronna, 2000). Such fusions of logics are what institutionalists have come to call "hybrid logics" (Battilana & Dorado, 2010; Pache & Santos, 2010).

Against this background, we propose the idea of a network logic, which emerges on the level of the collaboration and embeds organizational capabilities, which are needed to execute IT-enabled business models. We signify the value of our argument by an empirical study of business model innovation for treating chronic diseases.

## EMPIRICAL CONTEXT

To study how IT-enabled-business model innovation can counter societal challenges, we chose the case of an inter-organizational network in German health care, which focuses on treating chronic diseases ('HealthNet'). We deliberately chose this case as Germany has one of the highest death tolls due to chronic diseases in developed countries (92 per cent, see WHO, 2011). At the same time, governmental think tanks highlight the need but also the severe difficulties to implement information technologies in health care (SVR, 2009, 2012). Thus, we considered Germany to offer a quite typical setting for a case study (Yin, 2009) on IT-enabled business models for societal challenges.

### The case study: HealthNet

HealthNet is an inter-organizational network in a rural region in Southwest Germany, which focuses mostly on treating chronic diseases. It was founded in January 2006 by a group of medical professionals and a professional service firm (PSF), which supports the implementation of integrated care. Integrated care emphasizes that different medical professionals integrate their patient-related knowledge with each other and that they coordinate their individual treatments of a focal patient.

The medical professionals and the PSF founded a joint venture, which we call HealthFirm. HealthFirm acts as a network-hub and assists in the creation and maintenance of treatment routines, technology implementation, administrative tasks and public relations of the entire network. In this study, HealthFirm is the focal firm and HealthNet is the network into which it is embedded. One remarkable aspect is that HealthFirm's ownership is split in unequal parts among the medical professionals, who own two thirds, and the PSF, who owns the remaining third. Thus, the discretion of the latter is limited as the medical professionals hold the final decision making authority regarding all of HealthFirm's substantive decisions. Furthermore, the health insurance organization HealthFund is also important for our study. It provided the initial

funding to launch HealthNet and thus plays an important role for the early sequences of our findings. The overall time frame of this study is 2000 until 2011. From 2000 until early 2006, we look at the dynamics that pre-dated HealthNet's founding to disclose different strategic intents and their alignment. After 2006, we look at how business model innovation unfolded and emphasize on the roll-out of HealthNet's inter-organizational information system, which began in summer 2007.

## METHODS AND DATA

### Data sources

***Archival materials.*** Archival materials catered a real-time perspective on how IT-enabled business model innovation unfolded. The sources comprise of presentations that were held by HealthNet (56 presentations; 1475 slides; spanning from 2005 until 2012), applied science articles that were written by members of the network (36 articles; 536 pages; spanning from 2000 until 2012), reports like Health Net's annual reports (20 reports; 468 pages; spanning from 2007 until 2012) as well as other archival sources (58 documents; 195 pages; spanning from 2005 until 2012).

***Interviews.*** We did 18 semi-structured interviews with members of HealthNet and the organizations which founded the network (carried out mainly in 2011 and one in early 2012). The interviews complemented the archival sources because they offered us even more specific examples, stories as well as inside views. Moreover, we collected about 80 additional interviews from secondary sources that were published between 2000 and 2012 in order to ensure the validity of the information.

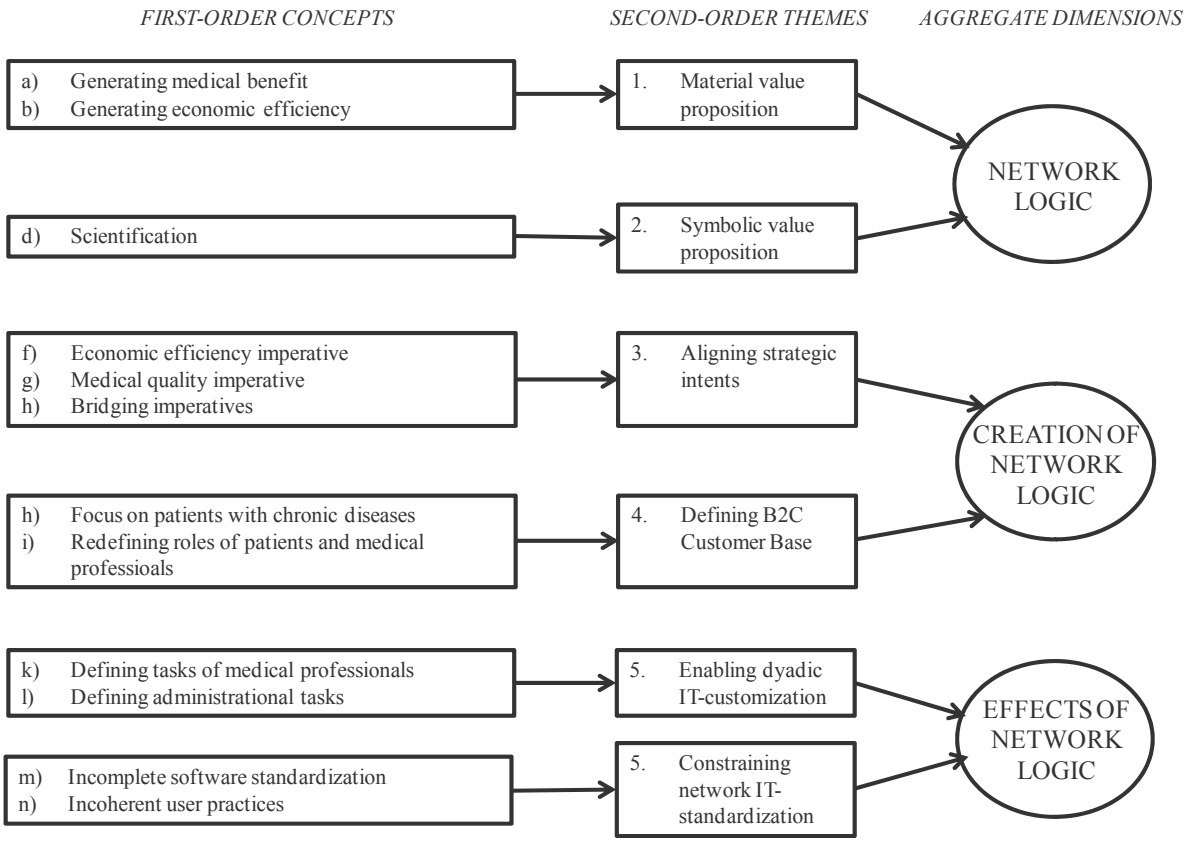
### Data analysis

Consistent with recent suggestions for inductive theorizing (Gioia, Corley, & Hamilton, 2013), we began by a first-order analysis. This step aims at structuring the information provided by the data in two ways: a) first-order categories, which are hands-on descriptions of the information and should preferably be denoted by informant terms; b) first-order concepts that encapsulate those first-order categories, which are similar to each other (Gioia et al., 2013; Nag,

Corley, & Gioia, 2007). Table 1 in the appendix shows examples first-order data that we molded into first-order concepts.

Next, we began cycling between data and theory to mold our first-order concepts into second-order themes and aggregate theoretical dimensions (this process is summarized in Figure 1). Given that our research was concerned with IT-enabled business model innovation in health care from early on, a first finding was that a network logic mattered for this case. However, we struggled with relating this finding to existing research on IT-enabled business model innovation. Luckily, this stage of our analysis coincided with the publication of Rai and Tang's (2014) article as *article in advance* at *Information Systems Research*. Their focus on dyadic IT-customization and network IT-standardization provided us with the missing link that allowed us to conceptualize our case on an abstract level as process. Figure 2 shows this process as it occurred in our study; Figure 3 in the discussion reflects this process on a general level beyond our case.

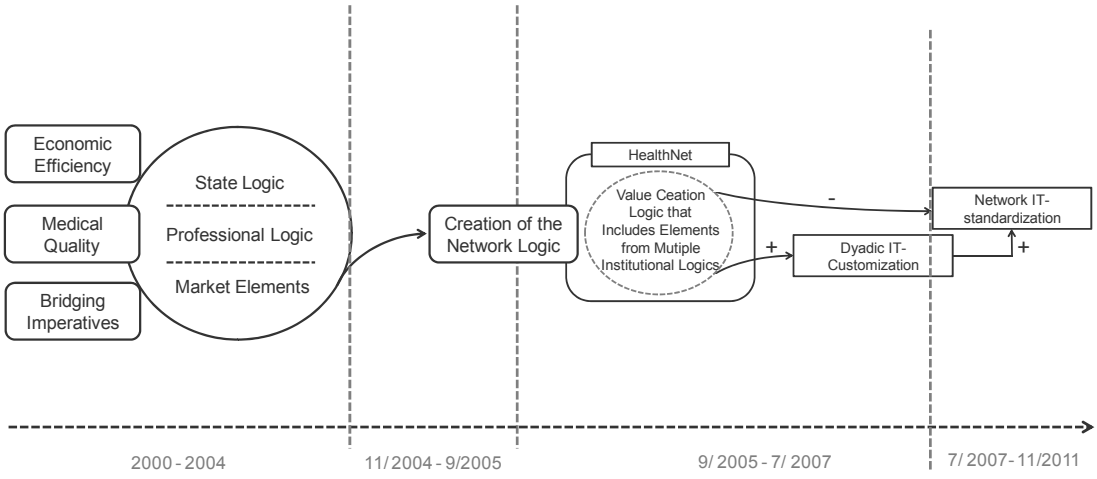
FIGURE 1: DATA STRUCTURE FOR THE HEALTHNET CASE STUDY



## FINDINGS: IT-ENABLED BUSINESS MODEL INNOVATION IN THE CONTEXT OF TREATING CHRONIC DISEASES – A GROUNDED PROCESS MODEL

In this section, we show the results of our study. Our main findings revolved around the creation of HealthNet's network logic and its effects on executing the capabilities for business model innovation. Therefore, we proceed in three main steps. First, we show what HealthNet's network logic actually is. Second, we show how it was created. Third, we dedicate comparatively most space to showing how it affected dyadic IT-customization and network IT-standardization. Figure 2 shows the process model, which emerged from our case.

FIGURE 2: GROUNDED PROCESS MODEL OF BUSINESS MODEL INNOVATION AS IT EMERGED IN THE HEALTHNET CASE STUDY




### Network logic

HealthNet's network logic manifests itself in a set of material and symbolic value propositions. The former relate to outcomes, which are directly measurable (e.g. costs and medical indicators), and which indicate that HealthNet rises the quality of health services while it also lowers their costs. In conjunction with quantifiable outcomes, HealthNet's logic also embraces important symbolic practices. In almost all of the presentations that we analyzed, statistical language and academic vocabulary are utilized to proof that HealthNet lives up to its material value propositions.

**Creation of the network logic**

HealthNet's distinct value creation logic was created by combining different institutional logics. As German health care is strongly regulated by the state and the profession, these are mainly elements from a state logic and a professional logic. However, certain market elements are enmeshed within these logics, too.

***Aligning strategic intents.*** The network logic resulted from the alignment of the strategic intents of HealthFund (cost containment), the medical professionals (ensuring rigorous medical quality), as well as the PSF (contracting with both parties). Two steps ensued to create the network logic. First, the PSF aligned with the medical professionals in a consultancy mandate. Together, they developed an integrated care concept and approached HealthFund in 2004. Second, contract negotiations among these three organizations began. Several details from the negotiations indicate how the organizations created the distinct network-level logic by aligning HealthFund's intents with the intents of the medical professionals. HealthFund's strategic intent was that HealthNet would assume the full economic responsibility for all insurants of HealthFund in a certain region. Such budgetary responsibilities were important because integrated care could run the risk of so-called risk selection which means that *"care deliverers may select patients to enroll based on the risk (and the potential economic gain)"* (Presentation 2005). HealthFund aimed at avoiding risk selection since one potential hazard could be that care providers de-select patients, who generate the most costs in order to boost their economic performance. Thus, assuming budgetary responsibility for the whole population was crucial for creating the network logic since it "*became part of the contract among HealthNet and HealthFund"*.

***Defining B2C customer base.*** HealthNet defined the customers of the network mainly as patients with chronic conditions. If the suggested correlation between high costs and bad medical quality was true, these patients would be the ones whose treatment costs could be lowered while standards of medical quality could be improved. Thus, this focus allowed HealthNet to unify economic efficiency with medical quality, or, as one informant put it: "*Well, it is a fact; HealthNet is basically made for sick people. I mean, in a sense, we profit from making sick people a little healthier"*.

**Effects of the network logic on IT-enabled business model innovation**

As knowledge sharing among medical professionals was instrumental to executing HealthNet's value propositions, the specification of these propositions into inter-organizational routines for treating patients and using information technology began after HealthFund had signed the contract with HealthNet in early 2006. Later, in summer 2007, HealthNet's IT-standardization began.

***Enabling dyadic IT-customization.*** HealthNet's network logic enabled the formulation of inter-organizational routines for patient treatments (so-called "health programs"). These routines defined (i) what information would be shared among the members of the network as well as (ii) the tasks of the organizations within the network.

The so-called "health programs" are HealthNet's offers to the patients; mostly patients with chronic diseases. Each program is a set of inter-organizational treatment routines that applies to treat a certain disease, for instance, heart failure, diabetes or depression. The network logic enabled the formulation of "health programs" since the development began right after HealthFund had signed a letter of intent while *"no efforts in that direction were made before that"*. Basically, all health programs were considered to function by the same template: If a potential patient for, perhaps, the heart failure program goes to see a doctor, the doctor's assistant would be thought to canvass her (him) to enroll in the heart failure program. Once a patient is enrolled, the medical professionals would be asked to follow the protocol prescribed by the specific program. However, the programs were never mandatory for the physicians. Instead, the programs were and still are non-binding guidelines by which individual physicians ideally treat a patient.

While the tasks of the medical professionals were focused on medical treatments, HealthFirm's tasks were defined mainly around the administration of the network and the data analysis. It is important that HealthFirm was not granted any rights to intervene into medical practice or sanction medical professionals if they did not follow the prescriptions of the health programs. As one informant explained, it was very important that the professional autonomy of the medical professionals remained untouched – *"and this is exactly how it was supposed to be"*.

***Constraining network IT-standardization.*** Standardizing and synchronizing the documentation software of the medical professionals was instrumental to yield the data, which HealthNet needed for its calculation. An initial consensus on software standardization was found in: *"June 2006: The participating physicians decided upon the synchronization of the praxis information systems"* (Presentation 2007). In the beginning of HealthNet's IT-roll out sources refer to "*29 participating physicians who used 16 different software applications"* (Annual Report 2007). HealthFirm tried to standardize the software and, in 2006, HealthNet already predicted network-IT standardization: *"HealthFirm and the medical professionals have already agreed to standardize software to administer patients"* (Scientific Article 2006).

However, as this plan converged towards execution, the standardization process changed its trajectory since several medical professionals wanted to keep the software that they had been using before HealthNet was founded since *"Several physicians already had their programs and liked them; others had a completely old system and generally hated IT. Yet, others loved the idea of a new system. Reaching consent was severely difficult."* Consequently, full standardization seemed difficult. Or, in the words of one informant, *"During the first talks about IT standardization, it was pretty quickly clear that there are opponents and doctors who by no means want to change their software applications. […] This is why we said, 'Alright, we will never get an entire standardization done. Let's try 70 per cent'."* More specifically, in 2007, HealthNet did indeed make a step towards standardization since it reduced the initial 16 software application to 6 (Annual Report 2007) with the consensus that *"Agreement – changes of praxis information systems: Beginning with April 1st, 2007, 22 doctors' offices will use the same praxis information system. They will be able to access a joint medical record (the remaining five systems – originally there were 16 – will be adapted to this system)"* (Presentation 2006).

Having 70 percent of the medical professionals adopt the same software is, by all knowledge of the field, a respectful accomplishment. However, even this large share of adopters had important consequences for the execution of HealthNet's value propositions. HealthNet needed further software to enable data exchanges between these six applications and HealthNet's controlling software. Consequentially, several service providers entered the scenario to help scripting such a system. "*And then we asked ourselves, how do we get it done that all the physi-*

*cians are inter-connected with each other and to us, even though not all are using the same system? And then the collaboration with a software firm started who offered us an external server solution, which gets installed at every physician's place of practice and is connected to the information system of a physician."*

However, integrating this mélange of software applications gave rise to an array of interoperability problems, which lasted for several years. Among them were problems like these: (i) crashes of the entire system if one of the aforementioned applications would be updated, (ii) freezes of the systems as well as (iii) problems related to the appropriate ciphering and transfer of medical data from one system to another.

Another constraining effect of the network logic related to how medical professionals used HealthNet's inter-organizational information system. In this regard, our empirical material mostly relates to documentation practices since quantified proofs of Health Gain demanded standardized data entries by medical professionals into their computer workstations ("semantic standardization"). However, the health gain logic included many elements of the professional logic of German medicine, which legitimated idiosyncratic documentation so that standardizing documentation was a major challenge: *"I do not know whether you [addressing the interviewers] have an idea of how differently physicians like to code and just write down things in the patient record."*

While idiosyncratic documentation was in full effect for about three to four years, HealthNet reacted to it by launching a project to standardize medical documentation in the long run: *"We said, alright we have to come up with new abbreviations in order to know if this and that is typed into the field and whether data can be retrieved and used as a basis for calculation. […]."* Furthermore, archival sources suggest that this project unfolded incremental success over the years as standardized coding improved step-by-step (Presentation 2012) although even late sources suggest: "*We still need to promote possibilities of electronic documentation since not every participant seems to know about them"* (Scientific Article 2011).

Deviating documentation practices also reinforced the power relations that were rooted in the network logic, e.g. a comparative overweight in professional autonomy. Thus, the medical professionals still have the authority to judge the legitimacy of medical practice: "*If it is about the*

*medical aspect, it is the job of the doctors."* This participatory organization enabled dyadic IT-customization. However, medical autonomy also constrained network IT-standardization and HealthFirm's policy to not execute any coercion of the medical professionals reinforced the constraining effects of the network logic (with very good reasons). However, granting agency to the physicians was described to us as a core value of the firm, as it is "*based on the philosophy of the venture"*.

## DISCUSSION

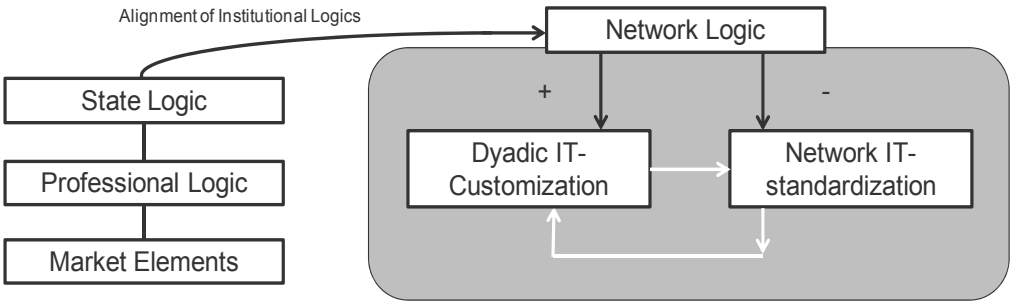
In this section, we elaborate on the core contributions of our study: (i) an empirical application and extension of Rai and Tang's (2014) framework; (ii) the importance to open up the concept of "value creation logics" as well as (iii) strengthening the association of information systems research with organization theory.

### Network logics and IT-enabled business model innovation

Consistent with our methodology (Gioia et al., 2013), we synthesize our findings into a preliminary model that is subject to further empirical refinement. Figure 3 summarizes this model and highlights the following factors: Societal challenges often unfold in settings that are characterized by non-market logics, which need to be included into business models if private firms seek to generate value (Dahan, Doh, Oetzel, & Yaziji, 2010; Seelos & Mair, 2007; Thompson & MacMillan, 2010). From the viewpoint of a focal firm, this means that cooperating with non-market actors is important (Lawrence, Hardy, & Phillips, 2002; Maguire et al., 2004) and that building these ties is the basis to formulate value propositions. Thus, these actors align different institutional logics by formulating network logics, which enable and constrain the capabilities to execute business models.

Against this background, our study contributes to research on IT-enabled business models in an important way. Our empirical application of Rai and Tang's (2014) work shows that our argument supports the importance of dyadic IT customization and network IT-standardization in settings of societal challenges, although we emphasize different factors that affect the execution of these capabilities.

FIGURE 3: GROUNDED PROCESS MODEL OF NETWORK LOGICS AND BUSINESS MODEL INNOVATION




**Refining the idea of a value creation logic**

If network logics matter for business model innovation, it seems reasonable to theorize such logics in more depth. The term "logic" is often used in business model-related research; indeed, several scholars even define business models as distinct logics to create and appropriate value (Osterwalder & Pigneur, 2010). However, the notion itself is rarely opened up theoretically. Our study suggests that it should since such logics may include elements from different societal-level logics, which give value creation logics specific shapes (Friedland & Alford, 1991; Spicer & Sewell, 2010).

**Strengthening the alignment of information systems research with organization theory**

In 2001, Orlikowski and Barley (2001) published an article in *MIS Quarterly* that highlighted great potentials for integrating information systems research with institutional theory: the former's interest in specific, hands-on micro-level problems would enrich the latter's interest in macro-level patterns. In turn, the latter could corroborate the theoretical foundations of the former. We believe that our study supports that their postulate is today more important than ever as ICT is recognized as potential solution to several societal challenges. Thus, technology and institutions are moving closer and closer to each other on a daily basis.

**Limitations**

Although we tried to apply outmost levels of rigor to our study, several important limitations arise. The most important one revolves around our research design embracing a single-case

and interpretive methods, which naturally imply limitations to generalizing from a study. However, we deliberately employed a single-case for two reasons. First, our setting was quite typical for business model innovation for societal challenges. Second, research that combines IT-enabled business models with institutional theory is extremely thin so that inductive methods are appropriate (Edmondson & McManus, 2007; Gioia et al., 2013).

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## APPENDIX

## TABLE 1: REPRESENTATIVE 1st-ORDER DATA

Dimensions, Themes, 1st-Order Concepts and Data

| Second-Order Themes and First-Order Concepts | Representative Data |
|---|---|
| *Aggregate Dimension: Network Logic* | |
| 1 Material value propositions | |
| A. Generating medical benefit | A.1 "Together with the patients, the other local business partners, and the health care funds, we organize a better patient care for the enrollees." (Scientific Article 2006) |
| | A.2 "Enrollees who suffer from diabetes receive eye check-ups more often: 46.9 percent compared to 30.3 percent (non-enrollees)." (Presentation 2010) |
| B.Generating economic efficiency | |
| | B.1 "The economic results for HealhNet 2005 - 2008: Contribution margins rose […] 2006/ early 2007: 38 Euros per capita; late 2007: 64 Euros per capita; 2008: 98 Euros per capita." (Presentation 2010) |
| | B.2 "Over all enrollees, this makes up for a gross saving of about 513,000 Euros." (Presentation 2010) |
| 2 Symbolic value proposition | |
| C. Scientification | |
| | C.1 “We use the most current scientific findings for prevention and medical care." (Scientific Article 2000)<br>C. 2 “we need to constantly question the results of our work by analyzing them. Has the intervention really had the intended effect? Has our intervention really contributed to slowing down the progress of a disease, to stabilizing the pa tient or probably even improving his/her health status? We can only learn and remedy the weaknesses of our concepts if we constantly evaluate and compare data." (Annual Report 2008) |
| *Aggregate Dimension: Creation of network logic* | |
| 3 Aligning strategic intents | |
| D. Economic efficiency imperative | D. 2 "Yeah, the responsibility for the result, it has to be measured. We need numbers". (Interview) |
| | D. 3 "The problem of many integrated care models is that they like to focus on those patients that are easy to handle and that are interesting cost-wise" (Interview) |

| | | |
|---|---|---|
| | E. Medical quality imperative | E.1 "Altogether, the work of us medical professionals embraces constant progress and a lively cooperation among the professionals while being open to new ideas is important, too. These are the best conditions to launch and implement bigger projects successfully. (Medical Professional cited in Annual Report 2007) |
| | | E. 2 "To my knowledge, the physicians always wanted to do something different. They always thought: It cannot go on like this, we need to take patient care and the overall health care back into our hands and not let us being directed by the health care funds and the numerous legal changes." (Interview) |
| | F. Bridging imperatives | F.1 "HealthNet assumes full budgetray responsibility for this region. Not for some enrollees which they kick out once they do not match our criteria because they are too cost intensive or too ill, but for all insurants here. Otherwise, I would have not signed the contract, but this arrangement, I felt, was a responsible way to do it." (Interview HealthFund) |
| | | F.2 “Which potentials can we exploit by improving the management of emergency as well as acute care? For the side of the funds: Hospital budgets, daily hospitalization expenses, device budgets. For the side of the patient: Outcomes, quality of life, potential loss of working capacity” (Presentation 2005). |
| 4 | Defining B2C customer base | |
| | G. Focus on patients with chronic diseases | G.1 "At HealthNet, you really filter-out those patients who have a chronic disease and enroll them in one of the projects". (Interview) |
| | | G.2 "It is a crux, and the sicker the people, the better it is for us. I mean, the easier it is for us, that is logical […] But it is, of course, bad for the people. We do not want them to be sick since our goal is different. Primarily, it is about maintaining health. There is an anti-smoking program now for the people." (Interview) |
| | H. Redefining roles of patients and medical professionals | H. 1 "Life-long controlling and managing of diseases across sectoral borders: preventing negative courses of diseases which can be avoided” (Presentation 2005). |
| | | H.2 "We ask the patient where he wants to be health-wise in five to ten years. In integrated care, he receives a specific plan for reaching these goals. Yet, it is a voluntary decision for the insurants if they want HealthNet to take care of their health care service provision. It is not mandatory". (Medical professional in press interview 2006) |

| | | |
|---|---|---|
| Aggregate theoretical dimension: Effects of network logic | | |
| 4 | Enabling dyadic IT-customization | |
| | I. Defining tasks of medical professionals | I.1 “You enter the parameters of a patient and, when they reach a certain value, then a window pops up that asks the physician to enter a certain value. In the case of the program on back pains, this is a specific questionnaire on the pains of the patients. Once it is completed, the program suggests that the patient has to re-consult the doctor after a specified number of months. Therefore, the doctor knows ‘alright, next appointment in this and that number of months’. It is very much like a decision tree where you enter certain information which leads you to the next step”. (Interview) |
| | | I.2 Presentations from 2007 show screenshots of a software program that includes the therapy plan, which indicates when the next consultations are due, which material is supposed to be handed to the patient and when, as well as several check-up dates. (Presentation 2007) |
| | J. Defining administrational tasks | J.1 "We are currently building a data base. Also, the doctor’s office will switch to a shared praxis information system. At the same time, we are building competencies for predictive modeling and data analysis” (Presentation 2006) |
| | | J.2 "HealthFirm has the management competencies to enhance the work of the medical professionals" (Annual Report 2008) |
| 5 | Constraining network IT-standardization | |
| | K. Incomplete software standardization | K. 1 "October 2006: First switches of praxis information systems/continued in January and April 2007." (Presentation 2008) |
| | | K.2 "Today we know that, back then, not everybody in the group said, ‘Hooray, let's implement a new IT system.' Instead, there were some who said that they had done so much for their IT already that they would not put any additional effort in it." (Interview) |
| | L. Incoherent user practices | L.1 "Our first experiences are that the precision of the diagnosis is negatively affected by an individualized 'documentation language' of the physicians, which reduces the gain which HealthNet can generate." (Scientific Article 2011) |
| | | L.2 "This standardization demands major efforts." (Presentation 2012) |