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On the Relationship of OMT and BISE: Bringing Institutions in

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Abstract. This paper advances Picot and Baumann's (2009) central paper on how organization and management theory (OMT) can enhance business information systems engineering (BISE). In particular, we extend their focus in three ways. We introduce the industry and inter-organizational relations as levels of analysis, which are of interests to BISE and we show specific methods to advance the links between OMT and BISE. We exemplify these points by a case study on BreatheCorp., a multinational company that recently entered into the provision of eHealth-based ventilation care services in Germany. Through our empirical study, we can also contribute to theorizing the role of context for inter-organizational information systems (IOIS).

Keywords: Organization and Management Theory, Business Information Systems Engineering, Theoretical Foundations, Neoinstitutional Theory, Institutional Logics

1 Introduction

Discussions about the theoretical foundations of business information systems engineering (BISE) have become a vibrant topic within the German [1, 2] as well as Anglo-America BISE communities [3, 4]. On the one hand, scholars have carefully documented the commonalities and differences among the BISE and Information Systems (IS) disciplines [1]. On the other, scholars have also called to consider Organization and Management Theory (OMT) in order to substantiate BISE's theoretical foundations [2]. In particular, Picot and Baumann [2] have pointed out that BISE can benefit from closer considerations of OMT since the latter is particularly strong at explaining the organizational context of technology implementation and that considering this context would facilitate the development of more powerful artifacts.

The goal of this paper is to extend this work in three ways. First, Picot and Baumann [2] point out three exemplary streams of theory, which could inform BISE: a coordination perspective informed by organizational economics, an information processing perspective as well as an organizational change perspective. While these perspectives allow theorizing how organizational contexts matter for the development of

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several artifacts, these perspectives remain comparatively silent about other levels of analysis than the organization. Thus, we introduce the industry, or field-level as a level of analysis that needs to be considered in the development of artifacts. Second, we also stress that OMT can offer insights into how the inter-organizational, or, network-level of analysis matters for information technology implementation [5, 6]. Third, although invaluable in terms of conceptual advancement, Picot and Baumann [2] remain somewhat silent on what methods could be used to exploit the mutually enhancing potential of OMT and BISE. Since we exemplify our points by an inductive case study of BreatheCorp., a multinational company with a market capitalization of about 28 billion Euros, we also show that qualitative methods can be helpful for advancing BISE through using OMT. Our analysis draws on more than 3,000 pages of qualitative data material that we collected from BreatheCorp. between 2004 and 2014. Moreover, through this empirical work, we can also extend the study of inter-organizational information systems (IOIS) by studying how specific contexts and idiosyncratic development processes matter for their development [5]. We fully acknowledge that a single-n case study may not suffice for a robust, generalizable argument. However, given that the nature of this work is exploratory, we aim to use the case as an exemplification of our argument that the contexts which reside outside the firm, matter tremendously for the design of IS and IS-based services.

Against this background, we differentiate between the field-level of analysis, the inter-organizational level and the organizational level of analysis. Further levels of analysis like the individual are, of course, conceivable. However, developing such multi-level arguments quickly becomes increasingly complex theory-wise [38; 39]. Since the field, or, industry and inter-organizational relations are particularly virulent in our empirical field, we thus opted to focus on these two in the context of this paper.

Our rationale to choose BreatheCorp. was two-fold. On the one hand, we observe a surge of interest into eHealth applications within the BISE community. The mere number of submissions to eHealth-related tracks at the *Multikonferenz Wirtschaftsinformatik* (MKWI) alone is a testament to the popularity of this topic. The fact that these tracks have been persistently hosted over the last conferences also corroborates this point. On the other, while the academic interest in eHealth is certainly impressive, the practical impact of eHealth in Germany is not. Public [7, 8], private [9-11] as well as industrial [12] think-tanks have widely bemoaned that eHealth applications diffuse much too narrowly into medical practice. In fact, a recent study carried out in health policy stressed that, in an international comparison, IT-adoption rates in German health care fell back far behind adoption rates in other countries [13].

As it is widely agreed that the non-spread of eHealth is less an issue of missing technological applications but more of context factors like regulation, professional autonomy and the ways in which these shape inter-organizational relationships, we chose health care as an exemplary context [14]. This allowed us to explore how theoretical considerations of the industry, or, field-level of analysis as well as the inter-organizational level of analysis can enhance BISE's practical punch. We find that, on the level of the field of health care, BreatheCorp.'s decision were closely bound by context conditions defined by the statutory health insurance. On the level of the inter-organizational network we find that BreatheCorp. *depends* on cooperations with med-

ical professionals and that the professional dominance in health care introduces idiosyncratic power relations on the level of this cooperation. Since there is already indicative evidence that non-considerations of these aspects trigger user resistance to technology implementation in health care [15], we strive to show how these contexts mattered for BreatheCorp. and that these need to be considered in the development of artifacts like information systems, which span multiple organizations [5], or applications that share information between patients and doctors and/ or family members.

To wit, we do not aim to develop single artifacts in this study but to extend Picot and Baumann's [2] points by adding other levels of analysis and suggesting specific methods by using the example of inter-organizational information systems (IOIS) in healthcare. However, the development of theoretically informed artifacts is important for future research.

Given that this paper draws on OMT as well as BISE but that both disciplines occasionally use different templates to present their papers, we used a standard OMT paper format. Hence we proceed in four major steps. First, we offer a brief development of our theoretical argument. Second, we introduce our methods and, third, we display our findings. Fourth, we discuss how this study advances extant work.

2 Theoretical Background

2.1 Marco-Level Contexts and Technology Adoption in Organizations

Scholarship across different disciplines has shown how the environment of organizations affects organizational decisions to adopt specific technologies. For instance, information systems research has shown that organizations adopt information systems, at least in part, in order to appear legitimate in the eyes of important stakeholders [16]. Furthermore, competitive pressures increasingly demand firms to cooperate with each other both in the development of technology [6] and in other industries where inter-organizational information systems are implemented to govern supply chains [5, 17]. Similarly, organizational scholars have linked technology adoption decisions to macro-social processes unfolding in industries or even entire societies. For instance, larger trends like the spread of total quality management led organizations to adopt techniques like decision support systems [18]. Against this background, it may come as a surprise that information systems scholars have called for integrating more macro-level of analysis in BISE already 2001. Orlikowski and Barley [19: 146] pointed out that BISE delivers the "tangible solutions to real-world problems" whereas macro-social theories could deliver the theoretical foundations for the development of powerful artifacts.

2.2 First Steps Towards Laying the Theoretical Foundations of BISE

Picot and Baumann [2] have made invaluable steps to connect BISE with theories of the organizational context in order to inspire the development of more effective artifacts. Their point is similar to Frank et al. [1], who suggested that theoretically-

driven research and practically-driven research should be understood more as complements than as contradictions. Yet, the nuances of both works are different since Frank and colleagues [1] paid more attention to comparing the relative emphasis of IS research within the U.S. with that of the community in German-speaking Europe. Picot and Baumann [2], in turn, stress that closer considerations of OMT in BISE could help BISE-scholars to develop more effective artifacts.

More specifically, they pointed out three streams of theories that could be of help here [for the following see 2: 64 f.]. The first stream embraces economic theories like transaction costs economics as well as agency theories. These can help to understand individual incentives as well as information asymmetries, which need to be considered during new technology implementation. The second stream is concerned with information processing. This is the process by which firms scan their environments, absorb information and design organizational structures and information systems accordingly. Arguably, this stream has similarities to considering the industry as an own level of analysis, yet, this stream still puts the firm centerfold by taking the environment as more or less given. Thus, this stream does not problematize the environment in the way it could be problematized (see below). The last stream resolves around project management and organizational change. It looks at how human relations matter for technology implementation and strives to explain how fits of the technological system with the social structure in organizations matter for the development of artifacts.

Notwithstanding the invaluable progress promised by these three streams, we find that they cannot fully capture the industrial and inter-organizational levels of analysis. More precisely, there are settings like health care, education or professional services like the law that are a) more or less regulated by state and b) highly professionalized. In these contexts factors from outside the firm have a decisive influence on what firms can do. Yet, the theories discussed before set the level of analysis to the firm. Therefore, they cannot fully grapple with these factors. While the information processing perspective links the firm to its environment, it also downplays the role of actors like the state and the profession since it looks at the agency of the firm, which decides what elements from the environment are important. Yet, this agentic view discounts the decisive influence that the state and the professions have on firms and that can substantially limit organizational agency. Reimers and colleagues [5], indeed, made a similar observation when they reported on the evolution of their research on inter-organizational information systems (IOIS). Finding that taking the firm as sole level of analysis makes it difficult to understand the evolution and impact of these systems, they moved toward a more process-oriented as well as institutional view on IOIS. We carry on in this spirit.

2.3 Institutional Perspectives as a Foundation of BISE

We argued above that there are certain settings where considerations of the industrial and the inter-organizational levels of analysis may form important theoretical foundations of BISE. In this context, institutional perspectives on organizations have

proven invaluable to understand how organizations relate to their environment and what types of relations they may form with their stakeholders [20, 21].

We rely on what is called "institutional logics" and is best understood as widely shared and accepted ways of doing business in an industry [22]. For instance, the computer industry was once built on a supply chain logic, which later changed to a platform logic [23]. Similarly, the spread of open standards comprised a new logic in the software field [24]. In both examples selling platforms or developing applications that were interoperable with platforms or specific standards became widely shared ways to conduct business. Thus, it is important to acknowledge that logics are understood to exist at the industrial level (as in the aforementioned examples were firms from across different niches of the computer and software industries adjusted to the industry-level logics). However, logics can also materialize themselves on the level of inter-organizational relations in the shape of specific power structures [25, 26]. A good example for this is the spread of total quality management in American hospitals. In management research, Kennedy and Fiss [18] have shown that the rise of TQM constituted a new logic. Various health care providers adopted TQM and thus TQM became a widespread way to manage hospitals. This widespread acceptance for TQM prompted hospital managers to adopt specific TQM tools and adapt these to the relations that they had with medical professionals and other important stakeholders in that industry. Hence, the emphasis in the logics literature is on the context of technology adoption and development. Therefore, it is particularly viable lens to stress the importance of more levels of analysis than just the firm.

The difference between the institutional logics approach and the approaches discussed by Picot and Baumann [2] is that the former allows to theorize in a more fine-grained manner *how* organizational environments matter and *which* factors are particularly important. Thus, this perspective forms an invaluable backdrop to develop artifacts that are supposed to be engineered for contexts such as health care, education or professional services where regulation and professional dominance are high. For instance, scholars on institutional logics have shown that institutional logics in health care typically grow inertial over time in contexts like the North-America [25-28] as well as Germany [29]. For instance, research in Canada found that doing business in Alberta's health care system demanded firms to deeply cooperate with the professions since regulation put the latter into a decisively central position [25, 26]. To illustrate that such observation are important for BISE, we venture next into a case study of BreatheCorp.

3 Data and Methods

To exemplify our point that considerations of the industry as well as inter-organizational level of analysis are important for BISE, we look at BreatheCorp. (synonym). BreatheCorp. is a multinational company that attempted to establish ventilation homes that were far-reachingly equipped with eHealth applications. We chose this case since eHealth applications form one of the most promising streams of work within the BISE community as well as for the fact that firms can only monetize on

these applications if they embed them into the highly regulated environment of health care.

To understand the BreatheCorp. case in more depth, we designed our research in two consecutive steps. First, we aimed to identify the organizational environment in German health care. To facilitate this aim, we hosted eight expert workshops (between 2011 and 2013) at our department where we discussed current developments in German health care on the industry-level. Workshop participants were usually about twenty to thirty decision makers from different health care organizations (including ministries, industry representatives and representatives from professional organizations). Decision makers at BreatheCorp. participated regularly and, sometimes, held presentations about their experiences in health care. We used this broad sampling of participants to develop a more or less 'objective' understanding of the different institutional logics on the level of the German health care system.

Second, to understand how these industry-level logics mattered for organizations, we chose BreatheCorp. and studied the firm via an intensive, in-depth case study [14]. This approach is appropriate in areas where existing knowledge is thin [30], which precisely is the case regarding links between OMT and BISE. We composed a dataset of about 3,000 pages including 32 interviews as well as archival data. Interviews were done between 2011 and early 2014 with key decision makers at BreatheCorp. We sampled on decision makers since this allowed us access to those persons, who would interact with important constituents from the organizational environment like the state or the medical profession. We used open, narrative interview techniques to guide our research as has been demonstrated as useful in information systems research [40]. We began by asking informants about how they acted in situations where they had to adapt BreatheCorp.'s services and information systems to the demands of actors like the state or the profession. We followed up on answers by asking for more details or interpretations of the informants of why, for instance, a situation went wrong. We augmented the interviews with real-time and archival material in order to check for the consistency across these sources. We stopped collecting data when we reached theoretical saturation [41]. BreatheCorp. was at no stage financially involved in this research. We knew the firm from an earlier research project that was funded by the BMBF. Yet, the research presented in this paper was done independently of that project.

We applied established methods of inductive reasoning used in both information systems research [31] and in management theory [32] to develop our argument. We read all the data material and used Atlas.ti for a first, tentative coding. We assigned very descriptive codes to strings of data material. We then systematized these codes by displaying the relationships among the topics of the codes (if existent) in Microsoft OneNote®. So, if there was a code that described that the statutory health insurance applied certain arguments to negotiate a price to reimburse IT-based ventilation care provided by BreatheCorp. and there was another code showing that medical professionals were important because they would have to use information technology in order to prove such services, both codes indicated how BreatheCorp's IT-based services depended on the organizational environment. We sought to trace out such relations in our codes to find out higher level abstractions.

4 Findings

To show that the institutional environment matters for the development of eHealth applications, we discuss our findings in three steps: First we describe the institutional logics existing in German health care, second we show how these affect economic decisions on the firm-level and third we discuss how this complexity affects efforts of network-wide IT-integration.

4.1 Institutional Logics in German Health Care

Through the workshops mentioned above we were able to trace out a particularly challenging aspect related to the institutional environment, in which firms in German health care act: This sector is characterized by a mélange of different principles to govern exchange relationships ("institutional logics") that are defined either by the state or the medical profession. The "Gesundheitssystem-Modernisierungsgesetz" formulated in 2000 incentivized the use of digital technologies to improve patient care and to open the sector to third-party providers, who could act as coordinators of health care. The state also re-adjusted parts of the financial resource flows that would traditionally be assigned to the medical profession through the "Kassenärztliche Vereinigung" and used this money to incentivize providers like BreatheCorp. to enter the German health care sector. However, the co-existence of different regulations made the health care sector much more complex than traditional markets. Yet, many participants of our workshops, including BreatheCorp., perceived of the possibilities to enter the German health care sector field as a third-party provider as a major opportunity. Therefore, we followed-up on BreatheCorp. and attempted to understand how the institutional setup in German health care affected BreatheCorp.'s efforts to establish ventilation care home that were far-reachingly equipped with eHealth applications.

4.2 Firm-Level Uncertainty as an Outcome of Institutional Logics

When BreatheCorp. entered the German health care field, it quickly realized that the sustainability of its business model was highly uncertain. Our study suggests that this uncertainty on the firm-level is rooted in the existence of different institutional logics. This finding advances Picot and Baumann's [2] argument inasmuch as they do point out that organizations oftentimes face uncertainty. However, the origins of uncertainty remain underexplored in its own right. In turn, our study allows us to link uncertainty to the level of the health care sector where different frames of reference – i.e. prescribed by the state and the profession – were simultaneously relevant for BreatheCorp.

More specifically, BreatheCorp. had to make major initial investments into network-relations and information technology. However, legal regulations that would provide certainty about the amortization of these investments were missing. For instance, BreatheCorp.'s eHealth-based ventilation care services could not be integrated into the catalogue of services, which the statutory health insurance reimburses. Thus,

BreatheCorp.'s services could not be reimbursed by a health insurance fund on a standard legal basis ("Regelversorgung"). Instead, BreatheCorp. had to negotiate the reimbursement of every single patient with his (her) health insurance fund. Thus, the company had to take major risks once it invested into the development of its health care services. Analytically, these risks were not given but *caused* by regulations of the level of the health care sector.

A second important aspect that related to BreatheCorp.'s investment decisions was the strong legitimacy that statutory health insurance organizations ascribed to low cost care providers. Health care funds usually pitch care providers like BreatheCorp. with the prices set by low cost care providers since statutory health insurance organizations themselves underlie economizing pressures. Such pitching hit BreatheCorp. hard because BreatheCorp. aimed to provide high quality care. However, standards to define levels of service quality and to thus differentiate BreatheCorp. were missing as were templates to accredit BreatheCorp.'s services or to provide personnel training programs for nurses that would allow BreatheCorp. to differentiate itself from low cost care providers. Health insurance organizations thus put BreatheCorp. into the same category as low cost care providers, which intensified the competition among BreatheCorp. and them.

This stands in sharp contrast to the demand to make long-term investments in order to develop eHealth concepts and to align human and technological resources. For instance, BreatheCorp had to develop specific training programs for its nursing staff so that it would appropriately use information technology. Moreover, BreatheCorp. made noteworthy financial commitments by buying or renting nursing homes for ventilation care and equipping these with information technology. These were necessary to signal credibility and reliability to health insurance funds since "negotiating with them [health insurance funds and their medical review board] before already having bought a nursing home for the patients is out of question" (interview). Second, further investments were necessary to set up the training program for the nursing staff and quality management systems, which were considered central to signal BreatheCorp.'s medical quality to referring physicians. These would be the ones who assign patients to BreatheCorp.'s ventilation homes. Lastly, BreatheCorp. had to invest into setting up in-house standards for care, documentation and administration that met the high-levels of formal requirements inflicted upon BreatheCorp. by health insurance funds since "health insurance funds (…) have considerable interests in quality [management systems] to induce and foster comparability" (interview).

Taken together, we documented empirical material that showed how the institutional environment placed constraints on BreatheCorp., which withdrew the certainty that would secure long-term investments. Thus, in this section we strived to highlight how the industrial-level context of the organizational environment causes uncertainty on the firm-level.

4.3 Institutional Logics and the Formation of an Inter-Organizational Network

A second aspect mentioned by Picot and Baumann [2] is the context of IT-implementation within organizations. According to them, theorizing context can enhance BISE through looking at how theories of human relations matter for the course of IT-implementation processes. To extend their work, we look at the inter-organizational context as well and set this into relation with the overall professional context of German health care.

BreatheCorp. had to proceed in IT-implementation in two different ways. First, it was crucial to establish an integration of different social and technical processes within the cooperation network and, second, it was evenly crucial to provide interoperable IT-solutions. For instance, since pneumologist treat patients with lung problems, these medical professionals would be the ones to assign patients to BreatheCorp.'s ventilation homes. Therefore, they often expressed specific expectations at BreatheCorp. to use specific ventilation devices that the medical professionals would trust and use themselves. Otherwise many pneumologists would not assign a patient to BreatheCorp.'s ventilation homes. In accordance, specific devices demand specific training so that nurses had to be trained to properly use the ventilation devices. Thus, investments in technology, processes and staff were interdependent and "aimed at accommodating the referring physicians in order to facilitate and ensure a smooth collaboration" (interview). This quote indicates how the professional dominance of German health care played an important role for how inter-organizational relations could be formulated.

A second important finding related to the formation of BreatheCorp.'s inter-organizational network. We found considerable efforts to persuade and acquire referring physicians as well as health insurance funds as key opinion leaders. Over time, several network relationship management activities were implemented. Examples for these are regular round tables and workshops in order to integrate the key stakeholders and to boost the network's performance. A last important factor is that network integration also meant adjusting practices of generating and sharing inter-organizational knowledge to the social and technological infrastructures of BreatheCorp.'s ventilation homes. This meant changing routines to document, evaluate and share information on medical treatments. As a first step, novel technologies were implemented, however, it was described to us that implementing novel technologies into patient care was a major problem. Institutional factors inhibited that technology was used in the way as it was envisioned. Specifically, standardized documentation was, in principle, central but this has never been asked from medical professionals before. This is strikingly important because it relates to the topic of inter-organizational SOPs as well as inter-organizational documentation standards. In health care, such standards are important, yet nascent. Moreover, given that such standards demand not only integration of organizational processes but processes in different sectors of health care delivery, it made the management of this integration decisively difficult. Hence, practice divergence existed since professional autonomy suggested idiosyncratic documentation of medical treatments.

Cumulatively, we suggest that these inter-organizational factors are also related to the mélange of different institutional prescriptions that reside on the level of the health care sector. Yet, whereas the prescriptions of the state mainly relate to how firm-level uncertainty unfolds, prescriptions of professional autonomy highlight how BreatheCorp.'s design of inter-organizational relations was determined by the medical professions, or, as one informant said, "no, really, in *that* field we just do as *they* say" (interview).

5 Discussion

We set out to explore how considerations of OMT could inform BISE. Therefore, we drew on Picot and Baumann's [2] piece that sketched several areas for mutual enhancement between both disciplines and which highlighted how considerations of the organizational context, largely a domain of OMT, could inform the development of artifacts, largely a domain of BISE. Through our empirical study of BreatheCorp., a multi-national company, which entered into the field of eHealth-based ventilation care services in Germany, we were able to define further areas where OMT can be used to formulate the theoretical foundations of BISE (see below). What we did *not* do in this paper is to develop artifacts. We considered our point to be of fundamental theoretical nature so that an application of our thoughts would have overloaded this piece. However, this is an important area for future scholarly inquiry.

We offer three important enhancements of Picot and Baumann's [2] argument and a fourth enhancement relating to the study of IOIS by Reimer and colleagues [5]. First, we raise the industry, sector or the "organizational field" [33] as an important level of analysis. In contrast, Picot and Baumann [2] evoked three stream of theories – coordination theories, information processing theories and change management – that are mainly concerned with how organizational context can enhance BISE. Arguably, information processing theory takes the environment into consideration since it emphasizes how organizations scan their environments. However, this theory starts with the existence of an uncertain situation and cannot explain its origins. In turn, our consideration of the existence of different institutional logics allowed us to anchor uncertainty in an endogenous explanation that contextualizes the existence of uncertainty within the larger social structures of a sector.

Second, we evoke the inter-organizational context as an important level of analysis. Largely patterned by how the professional dominance in German health care grants power to medical professionals, our study shows that this is an important level to consider once scholars venture into the development of artifacts. We do not intend to say that scholarship has been unaware of this level. Instead, we suggest that scholarship needs to closely consider the relationships that reside on this level, especially in medicine. Since we see a surge of interest into eHealth applications within the BISE discipline, BISE also has substantial potential to contribute to improving patient care. However, if power structures like the ones inherent to relationships of private providers and medical professionals remain unconsidered, it is likely that ineffective artifacts will be developed. Research has already documented that the non-

consideration of these relationships causes user resistance in health care [15] and other settings [34].

Third, Picot and Baumann [2] did not look into specific methods that could be used to elaborate on linkages among OMT and BISE. In fact, ”the question how to conduct this kind of analysis is still more an art than a science” [2: 67]. Our analysis showed that qualitative methods have substantial potential to provide the adequate methodologies to explore and advance the links among OMT and BISE. Since mutual considerations of OMT and BISE are the exception rather than the norm, such theory-building arguments are probably best suited to be used in the field right now. This may, however, change if the linkage among both fields grows stronger and develops into a stream of research that allows the formulation of more precise models and hypothesis to test [30]. Yet, his may be one avenue for further research to explore.

The fourth contribution of our work relates more to the study of IOIS as proposed by Reimers and colleagues [5]. Through their work on IOIS in health care, they found that considerations of different levels of analysis, processes of IOIS development and change as well as understanding the role of specific contexts are paramount to understand IOIS. We concur and add that our study treats context as less homogenous. Instead, our study showed a situation where such contexts may be torn apart since regulations may contradict each other or several relationship structures demand businesses to make far-reaching compromises. Therefore, our study shows that scholars interested in the role of context for IOIS should be alert to situations where contexts can be fuzzy, ill-defined or contested. Since such situations may have important implications for how IOIS form and are changed, further research in this domain may be important both for theory-interested IS research as well as the development of artifacts, which suit such situations

So, how is research that links OMT and BISE to proceed? We propose several avenues. First, in extending Picot and Baumann [2], who focused on economic and strategic theories to inform BISE, our background came from a more sociological angle, i.e. neo-institutional organization theory. However, with that the two most broad categories of OMT are basically covered inasmuch as their potential to inform BISE has been recognized. Thus, we believe that research can begin to actually develop artifacts that are both practically motivated and theoretically informed. For instance, major potentials lie in agile engineering methods were early stages of artifact development should be dedicated to uncovering the different institutional backgrounds, which guide different constituents. Disclosing such different backgrounds will be instrumental to develop artifacts that are in consent with users. Second, through the development of such artifacts, theories will ideally be advanced as well. The rationale is that paying close attention to how artifacts become (not) used in practice will allow BISE to contribute to OMT by checking appliance in practice with theoretical prescriptions. Accordingly, this may also contribute to advancing knowledge towards more formalized, testable models and hypothesis. Third, in conjunction with two, we believe that both fields need to move stronger towards process research designs [32, 35, 36]. Process study designs account for time inasmuch as they draw on real-time data in order to avoid retrospection bias inherent to only interviews [37] by incorporating either interviews over time about real-time events, and/ or observational data

and/ or archival data [32]. If process is taken seriously in research designs, we believe both fields will be well-equipped to contribute to better applications engineered for societal improvements.

Of course, our study underlies some important limitations. Since we purposefully sampled on German health care, one may argue that our findings only apply to this context. We concur, to some degrees, but our choice was motivated by the aim to extend Picot and Baumann's [2] argument (see above). Therefore, German health care was an ideal setting to point out the importance of institutional environments for firm-level decisions. Also, the practical relevance of eHealth for both practice and the BISE discipline corroborate the importance of our choice. Yet, less institutionalized fields like in other industries could display less influences from the field on the firm and future research could differentiate among degrees of institutional influences on firm-decisions to advance links among OMT and BISE. Firm size may also be an argument but as we were impressed that even a powerful player like BreatheCorp. was subject to strong institutional influences, we would suspect that smaller firms are even more subject to these streams of influence. However, we could not entirely control for this so future research could explore this linkage. Lastly, network position was special in our case as BreatheCorp. entered the health care sector from the outside. We could not control for whether a firm from within the health care sector would have faced the same challenges. Yet, we believe that this limitation does not render our overall argument that institutions matter for BISE obsolete since this is a more fundamental, theoretical point. The interesting question for future research would thus be whether institutions matter more or less once an insider from the industry is under scrutiny or not.

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