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Aligning Practices in a Pluralistic Healthcare Context using a Performance Improvement System

Short Paper

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Abstract

In this short paper we reconsider information technology (IT)-business alignment and explore the aligning of activities at the micro-level in a pluralistic healthcare context. This research-in-progress is based on the limited number of interviews undertaken thus far. More specifically, we investigate aligning in the activities associated with a performance improvement system at Northeast Care, a public healthcare network in the US. We build on Karpovsky and Galliers' (2015) framework in order to examine current aligning practices and identify new practices. Our preliminary findings outline the t activities adopted in different stages of aligning, along with the benefits and challenges organizational actors face. We provide empirical evidence that aligning occurs dynamically and that it is thus important to focus on the interplay between the aligning stages and the approach undertaken at each stage. We, therefore, contribute to the literature on strategic alignment and IT, and extend Karpovsky and Galliers' (2015) framework by incorporating additional activities and providing dynamic content.

Keywords: alignment; aligning; performance improvement systems; pluralistic context

Introduction

Over the past three decades, challenges associated with aligning information technology (IT) with business needs have been one of the key topics in information systems (IS) strategy research (Avison et al. 2004; Boynton and Zmud 1984; Chan and Reich 2007; Earl 1989). Alignment has been defined as the extent the mission, objectives and plans contained in the business strategy can be shared and supported by the IT strategy (Reich and Benbasat 1996). IT-business alignment can be challenging because businesses may focus on short-term results and take for granted that IT can relatively easily and immediately support strategic moves (Dao et al. 2011; Powell and Dent-Micallef 1997). Given scarce

resources and limited capabilities, however, IT needs not only to create platforms and infrastructures to support business needs (Peppard and Ward 2004; Tallon and Pinsonneault 2011). IT is also required to be proactive and provide innovative solutions that might question and change business strategy (Galliers 2011; Galliers and Baets 1988; Tallon 2007).

Despite extensive research on alignment, further study is still required. For instance, in reviewing past research, Karpovsky and Galliers (2015) note that scholars have often conceptualized alignment as a somewhat static construct. There is a danger in taking this view in assuming that once alignment is achieved, it becomes sustainable in the long term simply through the employment of strategic organizational mechanisms and actors such as boundary spanners and knowledge brokers (cf. Luftman and Brier 1999). However, the last decade has witnessed a number of radical technological changes affecting organizations and networks. These include, *inter alia*, (enterprise) social media, electronic medical records (EMR) systems, sensor technologies, predictive analytics (and big data), and the like.

The emergence of new IT artifacts, and more importantly their strategic use in organizations, challenges the view of alignment that describes what (and sometimes *prescribes how*) organizational mechanisms "should" be used to ensure business and IT are on the same page. Strategizing through IT innovations involves not just a successful (top-down) deployment but also a bottom-up development of such innovations. This (interactive) process involves designers, top management, but most importantly end users (Swan et al. 2007). One such example, which relates to healthcare (the context of this study) is about patients being able to review doctors' performance, pick their preferred nurse and request personalized modifications of the web platform they use to interact with their providers (Marabelli et al. 2017). Seeking innovation by using IT in a way that encompasses several stakeholders is challenging, yet it represents an opportunity, especially for large entities (e.g., networks), to use IT strategically with the support of all actors involved. Thus, we study alignment as a phenomenon of *becoming*, involving a number of organizational stakeholders, and not simply as a (macro) business/top management concern.

We therefore question what may be seen as the 'mainstream' view of alignment that refers to it as a static set of processes. We build on recent literature focusing on *aligning*, which is a dynamic view of the concept (cf. Karpovsky and Galliers 2015), and we propose that aligning should be looked at from a pluralistic perspective (Lusiani and Langley 2013). This perspective gives justice to how different organizational actors (or groups of actors) constantly interact in order to enable a strategic use of IT. Organizations increasingly operate in contexts of competing stakeholder demands, for example, on the part of government, management, employees, and the media (Smith and Tracey 2016). We refer to pluralist contexts as those in which actors pursue multiple objectives and in which politics plays a key role in shaping everyday strategy (Denis et al. 2007). These contexts are characterized by the co-existence of alternative, legitimate and potentially competing strategies within a single organization or network (Jarzabkowski and Fenton 2006). These pluralistic contexts are evident in practically any organization, and according to some are particularly prominent in healthcare networks, art organizations and voluntary organizations (Denis et al. 2007; Lusiani and Langley 2013).

For this study we focus on a healthcare setting. We report on preliminary findings of qualitative fieldwork conducted in a healthcare network headquartered in North America in which, in January 2017, a data-driven performance improvement (PI) system was introduced, aimed at streamlining all network processes, using Lean/Six-sigma. The aim of our study is to examine the aligning activities in this pluralistic context in which a PI system was adopted with a view to identifying process weaknesses and improve healthcare efficiency and quality. We adopt Karpovsky and Galliers' (2015) analytical framework and identify several aligning activities, thereby demonstrating the interplay between different aligning stages and the involvement and reactions of the stakeholders involved. Karpovsky and Galliers' (2015) framework has been utilized to explore aligning activities occurring in both top-down and bottom-up fashion. As such, the framework is deemed suitable to examine the roles and involvement of different stakeholders at the different aligning stages as well as the interplay between these stages. We therefore contribute to the IS strategizing literature (cf. Peppard et al. 2014) by demonstrating aligning as a dynamic process with particular focus on the interplay between different aligning stages and approaches adopted at these stages (top-down and bottom-up). The findings of the study allow for the revision and extension of the Karpovsky and Galliers' (2015) framework. As the study progresses we also aim to contribute to the literature and the framework through outlining the competing views and agendas of the diverse stakeholders in a pluralistic context.

In the next section, we summarize past research on alignment and introduce Karpovsky and Galliers' (2015) framework. We then present our research settings and methods, followed by our preliminary findings and discussion. We conclude by highlighting the initial contributions of our study, their potential implications for scholarship and practice, and present a research agenda for aligning research in pluralistic contexts.

Background

Although alignment has consistently ranked as one of the most important issues in organizations (Avison et al. 2004; Karpovsky and Galliers 2015; Queiroz 2017), to date there is still little consensus on what constitutes alignment, why it is needed and how it is achieved (Renaud et al. 2016; Street et al. 2017). In an attempt to provide greater understanding, a number of models on alignment have been developed and presented over the years, for example: the MIT90s model (Scott Morton 1991); the Strategic Alignment Model (SAM) (Henderson and Venkatraman 1989); the Strategic Alignment Maturity Model (SAMM) (Luftman 2000); the co-evolutionary model (Peppard and Breu, 2003), and the Activity Theory Model examining tensions and contradictions in alignment (Weeger and Ulrich 2016). Additionally, a subculture model has been introduced into the discourse places emphasis on culture/subcultures in alignment during implementation of a new system (Ravishankar et al. 2011). Different models and subcultures have been explained, and it is argued that alignment of IT/IS in organizations cannot be understood by looking exclusively at organizational-level factors (Ravishankar et al. 2011).

It is likely that in a pluralistic context the alignment of practices undergo different stages and activities, and different stakeholders and professional subcultures would affect the alignment of practices and use of systems. We therefore propose that it is important to explore specific aligning activities at a micro-level. In similar fashion, Karpovsky and Galliers (2015) argue that, as a means of addressing the ambiguities surrounding past research on alignment, it is relevant to focus on the dynamic unfolding of everyday aligning practices. That is, they suggest a shift from 'abstract' macro analyses of alignment processes, towards micro practices of aligning – day-to-day aligning activities in other words. They define alignment as "a continuous, ongoing process of aligning involving a series of activities resulting in adjustments in various dimensions and across various organizational levels" (Karpovsky and Galliers 2015, p. 137). In this paper, we follow this definition. Having systematically reviewed the extant literature, Karpovsky and Galliers (2015) identify various activities associated with aligning IS with strategic imperatives.

The *aligning as adaptation* stage is focused on evaluating the internal and external environments, where the alighting activities aim to fit in/adjust to the changing environment. Monitoring of the environment and any decision to implement a new system are usually undertaken 'top-down'. The *aligning as translation* stage is also seen as top-down in that the CIO's role is to ensure the alignment of IT with business needs. The *aligning as integration* stage is focused on communication, understanding different perspectives and integrating, bringing IT and people together to facilitate a smooth process of integration. This stage is associated with culture change as well as clarification and communication of change in roles as a result of new systems and processes. The *aligning as experience* stage includes activities focused on specific individual actions with regards to establishing newly implemented practices. These activities could be around resistance to change, politics, learning and decision-making.

Karpovsky and Galliers (2015) highlight the need for further research towards micro-level aligning activities within organizations and note that most studies focus only on one or two of the four stages in their framework (e.g., Thorogood et al. 2004; Wang et al. 2011). They imply that studying all four stages, jointly, and their interplay, would help in capturing the dynamism inherent in aligning processes. Thus, we respond to their call and adopt their framework with a view to testing its utility in pluralistic contexts. Our aim is, thus, to: i) provide a rounded picture of aligning activities within the different stages; ii) articulate the interplay between these stages; and iii) identify stakeholder views and involvement at each stage. We consider the healthcare context because it is a pluralistic in nature (generally operating at the network level), with a number of diverse stakeholders (and/or organizations or independent practices) involved. A prior study in the healthcare sector by Zacharia et al. (2009, p. 478) posed the question, "Which combinations of IT and business-level strategies are best suited for optimizing performance in healthcare organizations?". In this vein, in the last decade, several healthcare networks have adopted a lean approach to streamline processes and create efficiencies (Fraine et al. 2010; Koning et al. 2006). Lean, which derives from Six-Sigma and focuses on achieving process consistency (by minimizing

variation) in healthcare helps improving healthcare service delivery (patient focus) while containing costs (Vest and Gamm 2009). Improving healthcare processes can be achieved by measuring tasks using reports provided by EMR (Electronic Medical Record) systems. This is the case of Northeast-Care, the healthcare network that we studied. Details regarding the context and method are provided next.

Case Context and Methodology

Northeast-Care is a public healthcare network headquartered on the East Coast of the US that operates three hospitals and fifteen primary care units. In June 2016, Northeast-Care started a process improvement (PI) initiative by creating a dedicated business unit that reports directly to the CEO, hiring a lead person (a former operations management professor and Six Sigma black belt) and giving her sufficient resources (7 full-time, lean-trained individuals and 3 part-time consultants). The goal was to have the PI initiative overlook various healthcare processes. These processes included the emergency room (ER), routine/follow-up doctor visits, and billing processes. The PI initiative makes use of IT systems that extract data from the EMR system (EPIC) and create ad hoc reports, analyzed by the PI leaders in collaboration with the Chief Operating Officer (COO) and his staff. To understand the activities of alignment at Northeast-Care, we started by conducting ten exploratory interviews with several professionals including the COO, the PI Director (and her assistant), three doctors, the Chief Nurse of internal medicine, and three IT managers. We undertook these interviews in January-March 2018.

Given our exploratory approach, the interviews were conducted in an unstructured and open-ended fashion and accounted for people's feelings and viewpoints without necessarily pursuing data triangulation, with the exception of timeline events, consistent with the interpretive tradition (Walsham 1993; 2006). As other key actors were referred to by the initial interviewees, we arranged more interviews in line with the snowball sampling method, thereby ensuring the inclusion of a broad range of stakeholders (Rankin and Bhopal 2001). We also aimed to capture practices in understanding the use and interpretation of the new PI system through its planning, implementation and on-going use. The approach taken to collecting qualitative data involved a number of iterations between our fieldwork and relevant literature, assisting us in understanding any under-researched phenomena at hand (Kaplan and Orlikowski 2013). As a result, we were able to uncover a number of activities and position these as broad practices with reference to the alignment framework of Karpovsky and Galliers (2015). We used NVivo to analyze the data, and adopted a thematic coding approach involving multiple authors. This commenced by highlighting large chunks of text and reducing the data before coding in a more systematic and detailed manner to reveal distinct themes (Miles et al. 2014). The coding process aimed at identifying different aligning activities and the involvement of different stakeholders in these activities. These codes have been subsequently grouped following the four aligning stages of Karpovsky and Galliers' (2015) framework. We next present our preliminary findings and analysis of the data collected thus far.

Findings and Analysis

As indicated, we analyzed the aligning activities at Northeast-Care using Karpovsky and Galliers' (2015) framework, and mapped these in the four quadrants as shown in Table 1.

Table 1. Aligning activities at Northeast-Care

Aligning as translation Developing an IT solution(s) to improve performance, reduce errors and time wasting Including professionals who understand medical practice and can translate it to system metrics Transformation, role reconfiguration	**Aligning as integration** Bringing multiple stakeholders together Unifying processes, measurement Transition and change process Culture change, Role changes Communication, transparency
Aligning as adaptation Externally: Evaluating the environment, adapting to a new environment, including the necessity to provide metrics and meet targets Internally: preventing mistakes, providing unified processes, monitoring performance	**Aligning as experience** Resistance to change Power and politics Decision-making Organizational learning Comparison of performance and competition

In the remainder of this section we present (through quotes) prominent examples of these activities related to each quadrant and show the interplay between the stages and stakeholders involved.

The aligning activities of the Northeast-Care PI initiative were initiated because of external requirements and performance targets. PI system creates data (analytics) by accessing EPIC, the current EMR system. Hence, the initial stage of introducing PI (and associated analytics system) related to *aligning as adaptation* as necessary, not only in the healthcare network, but also to use the system to produce key metrics which could be used to meet certain external targets central to the healthcare context:

> *One of the PIs is meeting all team metrics and then standardize charts that the accrediting body or the regulatory body need … So that's one PI, so if for example, joint commissioning or Department of Public Health or the Department of Mental Health, what do they need? Then the second PI is of really quality metrics. There is* (sic.) *a lot of organizations like CMS which is the Centers for Medicare and Medicaid services that need the hospitals to meet certain requirements (PI Director)*

Internally, there was also a need to prevent mistakes and continually monitor performance whilst providing support and guidance for staff and patients. A prominent example of efficiency improvement was the use of MyChart, an EPIC web module that allows patients to access a portion of their EMR to capture performance data:

> *So, one thing is signing patients up for the patient portal which is My Chart so it's like accessing … parts of your own record through an app or online and we can send results and messages and things more like real time and not worry about things taking two weeks in the mail … (Family Medicine Physician Assistant)*

The aligning as adaptation stage could be considered the initial stage, but it is also on-going as metrics and changes in the environment are continuously monitored throughout. Thus, aligning as adaptation is linked to the aligning as translation stage, where the development and the modification of the system is affected by medical practices but also by environmental variables. The aligning as adaptation stage is predominantly driven by the top management but it also accounts for external factors such as funding and government regulations, and can therefore be influenced by external stakeholders. At the *aligning as translation* stage the PI system was developed and modified to account for internal and external requirements. Specifically, this involved finding an appropriate IT solution for aligning processes to improve performance and reduce inefficiencies. Again, Northeast-Care was able to exploit EPIC to analyze performance data:

> *We started in ambulatory, we should go to the acute side of the house. And eventually into the billing side of the house which we're starting to do this year. So that's been from 2009 forwards. So, there's stages in there where we took all the ambulatory stuff and go live. We finalized that. (Senior Director for Applications)*

The development of the new PI system was fulfilled with the intention of not solely being driven by IT managers and staff. Crucial to aligning was the inclusion of professionals with extensive knowledge of the complexities of healthcare, who could help inform practice and translate this into key metrics for the PI system. Thus, whilst this stage is predominantly driven by top management and IT, there is also bottom-up input from selected professionals:

> *So, the quality department has had a lot of quality improvement efforts and each of the departments and unit's kind of have their own ideas of their quality improvement efforts and they try to do them in a standard way. But we really approach it with a problem-solving lens and create this multidisciplinary team to really get everybody's story and look at as much data as possible, to be as evidence based possible, to really see where all the, you know, tiny operations or problems that could get in the way of solutions and how can we address them. (Quality Manager, who works in the PI initiative)*

As a result, we observed a continuous interplay between aligning as translation and aligning as adaptation stages. The introduction of the PI initiative also meant a reconfiguration of roles, where dedicated performance managers established better practices for working with diverse professional groups within the network in order to gain their input. This also has relevance to *aligning as integration*, particularly

where performance managers were tasked with involving these diverse professional groups to facilitate a unified process of transition and use of the new system:

> *[The system] is designed to help [Northeast-Care] develop a process of improvement methodology and a framework that the whole organization can connect to. So that's the case we're working on. How do we make [Northeast-Care] an organization that's committed to practice improvement and thinks in terms of classic improvement methodologies. (PI Director)*

The interplay between the aligning as integration, translation and adaptation stages is evident in the continuous communication reiterating the need for the introduction of the PI initiative and the benefits of such system, with increased involvement from different stakeholders. This meant performance managers having foresight with regard to potentially competing demands and expectations of professional groups, and demonstrating their own 'power' over the situation, particularly through communicating concisely, being democratic and transparent, whilst devising clear and deliberate procedures:

> *Performance improvement is very different than the way quality approaches data, like quality will go in terms of the physicians like these are the things that you've not done with your patients. But I think they don't appreciate that kind of information. Like their own data showing performance. There's a bit of a resistance to it. As for performance improvement, what we've been doing is we really only go in when the unit invites us. We don't go in when the unit hasn't invited us and we try our best to engage … there's resistance of course but our … goal is to make sure we have buy-in. (PI Director)*

Thus, Northeast-Care's approach is to attempt to include all stakeholders in meetings and to communicate clearly the culture changes required with a view to ensuring a smooth integration process. Through the continued use of the system, performance managers gained a more coherent sense of know-how relating to the system and its management given the diverse professional group users. These practices are conducive to *aligning as experience*. The inherent resistance to change that is common in implementing new systems and processes required attention, as did managing power and network politics, whilst attempting to ensure the decision-making rationale was clear and consistent:

> *There were a lot of individual conversations with the performance improvement teams like doc to doc, nurse to nurse but also then cross groups talking, cross leaders – you have to engage the leadership first. But I think ultimately if you feel it's going to make a change for the better people are generally willing to be curious about it and then when you've more concrete things to show that helps too … we really are going to involve everybody and pointing to the various meetings or whatnot where we're asking everyone, and maybe you can't make it but your colleagues did and you can let them know what you want but having everyone have an opportunity to have a voice. (Family Physician)*

This stage is demonstrated to be democratic and bottom-up as a way of managing the competing demands and expectations of professional groups. Aligning here also required a focus on organizational learning and being open to workarounds, which suited the needs of Northeast-Care and its stakeholders:

> *[The] projects which are for the most part bottom-up but are hopefully aligned somehow, I think they are usually aligned with the organizational goals, can be anywhere in the institution. (Pediatrics Physician)*

These preliminary findings provide new insight into the aligning activities of the four stages of Karpovsky and Galliers' (2015) framework. Additionally, they provide an indication of the interplay between these stages and stakeholder involvement in each.

Discussion, Implications and Future Research

Our findings show that in *aligning as adaptation*, the internal and external environment was assessed and the need for a new system was perceived. We outline this as the initial stage, yet one which is on-going in nature as the team constantly reviewed the new system, its use, metrics and measurement and aligned these with any external requirements. This stage was predominantly driven by top management. After assessing the environment and deciding to introduce the new PI system, Northeast-Care focused on

system development, *aligning as translation*. This stage combines a top-down and bottom-up approach with the team including members from different professions and different stakeholders to help translate medical practices into key metrics for the PI system. At the same time as developing the system, *aligning as integration* commenced, where frequent meetings were held and messages were sent out to all stakeholders with a view to ensuring smooth transition and culture change. This stage was driven by top management but involved as many stakeholders as possible to provide a smooth, unified process of transition. The final stage concerns the use of and interactions with the new system, *aligning as experience*. This stage was bottom-up in nature, revealing any resistance to change, power issues, learning, competition between stakeholders and use of the system in decision-making processes. Based on stakeholder reactions in using the system, reiteration through other stages might follow; for example, adjusting to the new internal environment (*aligning as adaptation*), or increased communication concerning benefits arising from using the new system (*aligning as integration*). The continuous involvement of different stakeholders in the PI initiative could lead to further adjustments to the metrics that the various systems offer, at various aligning stages. This would arguably improve process performance at the inter-unit level (i.e., where several different stakeholders are involved).

To summarize, based on our preliminary findings, we posit that aligning of practices in pluralistic contexts emerges over time and in a set of distinct activities. This suggests that, in the context and use of the PI system, different activities are crucial to aligning; from initial scanning of the external environment and assessing the needs for a new system, to the new system being developed, introduced and integrated, through to the system's on-going use for PI and decision-making. Therefore, aligning is outlined as a dynamic process, formed by distinct activities, yet interwoven and continuously revised in the on-going development and deployment of the system and is a major contribution of our study thus far. We illustrate this in a revised aligning analytical framework as presented in Figure 1.

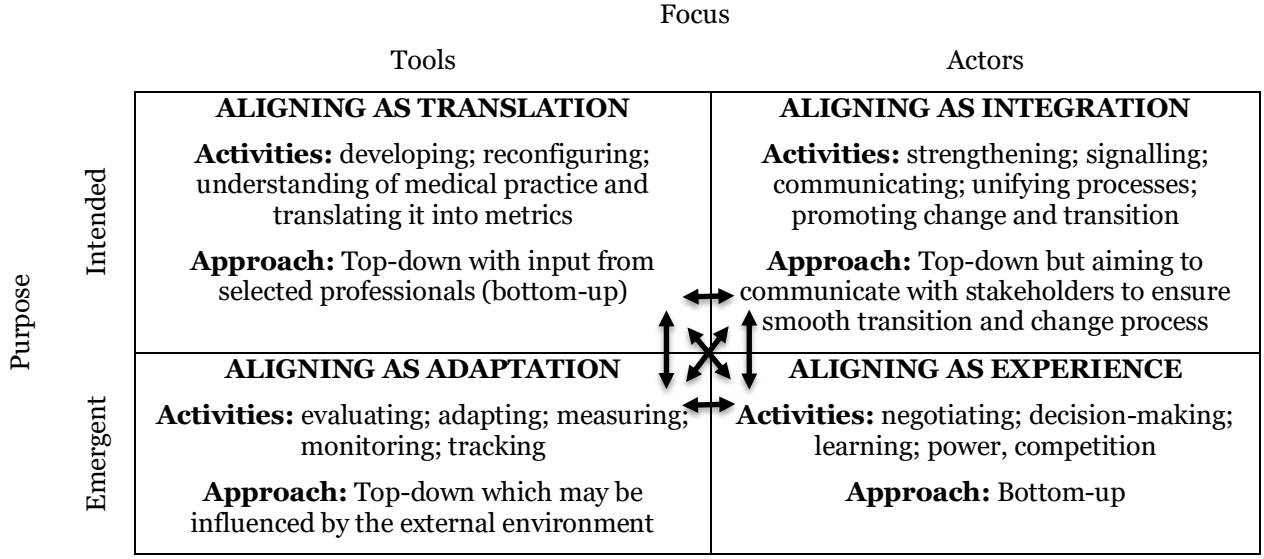

Figure 1: Dynamic Aligning Analytical Framework

In our future work we plan to undertake additional data collection in the Northeast-Care network with a view to further examining these preliminary ideas and adapting the revised framework as necessary. We expect that our on-going research will open up new research opportunities to improve our understanding of the dynamic nature of aligning in pluralistic contexts. Longer exposure to fieldwork (with the ultimate goal of reaching data saturation) will help us identify additional aligning practices and associated activities. This will enable us to extend existing frameworks. Our ultimate aim is to contribute to the IS strategizing literature concerned with learning more about how organizational networks go about aligning, considered as an emergent and constantly changing phenomenon. Since most organizational settings are characterized by a plurality of stakeholders (often with conflicting interests), we believe our healthcare focus could be translated to other settings. Our research also has the aim of informing practitioners who seek to align their business and IT strategies, particularly those managers working in complex, dynamic environments and networked settings, similar to that of Northeast-Care.

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