ORGANIZATIONAL TEMPORALITIES AND RADICAL DIGITAL TRANSFORMATION: A STUDY OF OPEN GOVERNMENT IN SAUDI ARABIA'S IT-BASED ECONOMY

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Research in Progress

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Abstract

The Information systems (IS) literature has discussed time in some detail, including how Information Technology (IT) enables the bridging of problems associated with temporal distance in IT-mediated teams, facilitating teams’ decision-making process, speeding up business processes as well as stretching time through enabling actors to multitask by utilizing IT artefacts. However, there has been a tendency to focus only on time as a linear objective construct, thus neglecting its subjective and socially constructed nature. In this paper, we argue that this subjective and socially constructed characteristic is deserving of more attention in IS literature. To examine the interplay of objective and subjective views of time whilst undergoing digital transformation and its effects and outcomes, a qualitative, comparative case study approach is embraced here to understand how Saudi governmental organizations are implementing a new open government initiative and digitally transforming with time. In this context, we explore how key actors act upon objective and subjective temporalities during the Saudi country-wide transformation of the digital economy— the Saudi Arabia Vision 2030 open government initiative.

Keywords: Temporalities, Digital Transformation, Subjective time, change.

1 Introduction

Time and Information Systems (IS) research have a long history. Nevertheless, IS literature has traditionally considered time as a linear objective construct. For example, IS research has focused mainly on how Information Technology (IT) bridges the problems of temporal distance in IT-mediated teams (Dennis et al., 2008; Cummings et al., 2009; Espinosa et al., 2015), facilitates team decision-making (Dennis et al., 2010), extends time and enables multitasking (Fortunati, 2002), and speeds up business processes (Sarker & Sahay, 2004; Lee & Liebenau, 2000; Lee, 1999). However, the simple objective “abstract, uniform and unitary time of the clock” (Fortunati, 2002, p. 517) is no longer satisfactory because contemporary IT artefacts allow time to be stretched and provoke new time practices and processes (Hörning et al., 1999; Shen et al., 2015) which implies the existence of another type of time, subjective time, that is a socially constructed version of time assuming an active role of actors (Biesenthal et al., 2015, Shen et al., 2015; Hernes, 2014; Orlikowski & Yates, 2002). Open phenomena, which have become increasingly prominent in the IS field (e.g. Schlagwein et al., 2017) are also relevant to time especially as openness is a continuum of meaningful action and performativity over time and thus has a processual, temporal nature (Tavakoli et al., 2017). In fact, Schlagwein et al. (2017) argue that we cannot study and analyse open phenomena without looking at the IT they are implemented through. Therefore, investigating the temporality surrounding open phenomena is essential to understand how such phenomena (that are “often so deeply embedded in IT” (Schlagwein et al., 2017, p. 297) develop over time.
However, IS research seems to still favor the aforementioned objective view of time (Shen et al., 2015) and few studies can be found on the interplay between objective and subjective time in organizations (Orlikowski and Yates, 2002; Saunders and Kim, 2007). This critical shortcoming in the extant literature calls for research focusing on how actors perceive and act upon the different co-existing temporalities within their organization when undergoing digital transformation needed to achieve their openness. It also interrogates the complexities of how such temporalities interplay, how this interplay impacts digital transformation in organizations and the role of IT in orchestrating the interplay between objective and subjective time.

In our research-in-progress, these key areas are examined in relation to intensive processes taking place as part of the country-wide imposed open government initiative by the Government of Saudi Arabia, especially as Saudi moves towards becoming a digital and more diversified economy, and one less reliant on oil as per its future plan named “Vision 2030”. Open government, like other open phenomena in IS, represents increased notions of transparency, collaboration and participation and in this case such notions relate to government directives and action. This includes the right for citizens to have increased access to information about, and potentially contribute to, governmental initiatives. Open government often revolves around large transformation projects and involves stages of internal (between government ministries and stakeholders) and external (with citizens, other public and private organizations) data sharing and consultation. According to the openness initiative taking place, the government entities will need to adapt their processes and work practices to follow open principles of transparency, participation and collaboration to meet Vision 2030’s anticipated goals by the specified time frame. This movement toward open government requires process adaption not only within each government entity but also extends to other entities that have shared responsibilities and therefore contour accountability of specific goals. Park & Oh (2019) assure that open government in developing countries has been rarely researched although these countries are showing a great interest and willingness in such movements. For example, 57% of the Open Government Partnership (OGP) member countries are developing ones (Saudi Arabia is not one of them yet) (Park & Oh, 2019). Nevertheless, Alanazi et al. (2012) found through conducting analysis of the national E-government portals of Middle East countries that Saudi Arabia has an evidence of a high-level maturity in open data implementation practice. Yet, they found that United Arab Emirates scored higher.

The structure of this in-progress paper is as follows. The next section discusses the theoretical basis of the research, by providing an overview of three key streams of literature. The third section provides a contextual background of the research setting, followed by a section discussing the research design and methodology followed by some preliminary findings. The final section discusses the expected contributions that address the identified gaps in knowledge and paucity of research in time studies in IS and organizations literatures. In doing so, we also document how we intend to take this research-in-progress forward.

2 Theoretical Background

This theoretical background focusses more extensively on openness, time, change, and IT. This review is divided into three streams: (i) Objective versus Subjective views on time and openness, (ii) time and IT, and (iii) IT and change. These three streams together provide a background for developing insights into how people in organizations experience open phenomena under specific timeframe pressure in a collective transformation mission. Therefore, since we found that IS literature has mainly been attached to objective view of time ignoring the existence of other types, we focus in the first section of the theoretical background on scanning the different views of time and borrow these from the organization studies literature. We specifically shed light on objective and subjective views as our main investigation of temporalities. In the second part of the review, we look at the connection between these two temporalities to IT because openness is inseparable of IT, and in the final section, we look at how IT was attached to change in general (and perhaps this would help us in identifying how openness (which is usually done through IT) is affecting the whole process of change in these organizations.
2.1 Objective VS Subjective Time and Openness

Time is not a new concept in the management and organization studies literature. It was, for example, discussed in Frederick W. Taylor’s seminal works on time and motion studies in the 1880s. Here, it was concerned with finding the efficiency in conducting human related tasks and activities (Harper & Mousa, 2013). Ever since, time has been conceptualized as an organizational resource to be planned and managed to ensure the most effective and productive way to spend it (Doob, 1971; Barney, 1991). Research has discussed a variety of time forms co-existing and taking place within organizations. This includes the notion of time in different stages of open activities in organizations, especially those enabled by contemporary IT (Schlagwein et al., 2017; Tavakoli et al., 2017). However, recently there have been varied debates in how scholars might conceptualize and perceive the concept of time in organizations (Orlikowski & Yates, 2002; Biesenthal et al., 2015, Shen et al., 2015), and its nature as a continuum in relation to openness (Benlian et al., 2015). Time, and its importance to IS, has been emphasized as “a silent visitor to the research…” the researcher implicitly suggests that a change occurs over time, but does not explicitly discuss the role of time” (Saunders and Kim, 2007, p. iii). Such a statement acknowledges how time remains black boxed compared to other topics, and hence, remains undertheorized. In open phenomena, there is also much to be done to focus more explicitly on time and its relevance to key temporalities in openness and how it evolves. This neglect of time is particularly true in the case of subjective time as we see the treatment of time as objective and abstract since research does “not involve the human actor as central” and conceptions are not dependent on how actors conceive of time (Sahay, 1997, p. 239). To address this gap, we extended our literature review to studies of time in management.

The objective view conceptualizes time as linear where past, present, and future are separate and not related (Orlikowski & Yates, 2002; Biesenthal et al., 2015, Shen et al., 2015). In the subjective view, however, the individual links the past, present, and future and draws a comprehensive image from the three (Vesa & Franck, 2013; Dodd et al., 2013). Thus, the subjective view provides a language to capture subjective perceptions of time when it is not possible to separate the past and future from the present using objective units due to their involvement in the present (George & Jones, 2000). Other terms used in the literature to describe subjective time, including in work on openness, include: ‘ongoing temporality’ (Hernes, 2014) and ‘process time’ (Reinecke & Ansari, 2017). The objective view is sometimes referred to as “chronos” while the subjective view is referred to as “kairos” (Biesenthal et al., 2015; Roe, 2008; Ciborra, 1999). Orlikowski and Yates (2002) further state that chronos is time that can be measured quantitatively by specific units, not by its purpose, while kairos is measured by the human activities and goals achieved. Time as conceptualized by the objective view is independent of the actors or any other influencers. Clocks and calendars therefore are considered essential components in measuring time objectively. In this perception, people treat time as money and therefore use the same words to describe time as they use to describe money, taking “for granted that time is a quantity which can be measured, allocated and cut in a controlled, structured and planned fashion” (Ciborra 1999, p. 86). People holding this perception of time prefer to perform one task at a time according to the tasks allocated to time units. Zerubavel (1981, p.7) emphasises the objective view as: “unlike many non-Western civilizations, where events and activities are temporally located in a relatively spontaneous manner, we tend to ‘schedule’ them; that is, routinely fix them at particular prearranged, and often standard, points in time”. In this light, Blount and Janicik (2001) discuss how culture (among other factors) affect the process by which people choose their temporal referents. This objective (clock) time is valued more strongly in North American and Northern European nations while Latin Americans, Native Americans, and Southern European nations value event-based time. While the former view is more precise, and events have a clear and specified beginning and ending, the latter view is more flexible. In contrast, the subjective view of time emphasizes the role of actors who socially construct time since we cannot understand time by looking at it but instead by analyzing how people are involved in everyday life (Hörnning et al., 1999). Hence, time is described as a “social entity” that is formed by organizational members as a collective social effort. As stressed by Durkheim (1915), social rhythms impact how people collectively experience time and highlight its intersubjective nature where individuals share a similar sense of experiencing time due to their involvement in common events and activi-
ties. Consequently, recent studies have begun to treat time as internally subjective rather than externally objective because it differs among individuals, organizations, cultures, and societies (e.g., Reinecke and Ansari, 2017).

2.2 Time and IT

IT objects such as mobile phones can allow time to be stretched and offer a double or even triple life for time by allowing actors to perform multiple actions (Ivaturi and Chua, 2016). This means IT objects use the same objective time, hence redefining the social conception of time altogether (Fortunati, 2002). However, we should not take for granted that “technologies do both: they constrain, and they enable, they irritate and provoke new time practices” (Hörning et al., 1999, p. 305). Within the IS field, research on time has been somewhat ignorant in focussing only on established or dominant time dimensions, such as – linear, abstract, and quantitative variable (e.g., clock) views of time (Boland et al., 2004; Shen et al., 2015). Further, much IS research has focused on how technology is bridging the problems of temporal distance (Dennis et al., 2008; Cummings et al., 2009; Espinosa et al., 2015). It has been argued that IT shapes actors’ perception and behavior associated with time (Ivaturi and Chua, 2016), and has potentially dramatic impacts on time-related organizational phenomenon including team work and coordination (Shen et al., 2015), decision-making and entrainment (Dennis et al., 2010; O Riordan et al., 2013), design and synchronization of organizational routines and practices, the design and use of work activities, and organizational communication (Ivaturi and Chua, 2016; Massey et al. 2003; Pavlou & ElSawy, 2006). However, in this paper we argue that scant research on the subjective view of time and interplay between the two views of time has been conducted.

Although Heidegger (1982) suggests that the objective and subjective views of time could meet at some point, our knowledge on the connection between IS and different organizational temporalities and the interplay that occurs between these temporalities is still lacking. Thus, increasing calls now exist for research addressing these gaps (e.g. Ivaturi and Chua, 2016; Wajcman, 2008; Boland et al., 2004; Lee and Liebenau, 2000). This considered, Sahay (1997) reveals that having been dominated by the positivistic paradigm for decades, the IS field witnessed the acceptance of interpretivism as a shift in IT research in organizations came to prominence in the late 1990s. Such acceptance should enable a better investigation of the role of time in defining the social context and shaping the interpretations of IT in organizations. The interpretive approach allows the subjective meaning that actors attach to IT to be examined. A vital consideration in this approach is that there is no single cause for a particular result. Rather, it is the interplay between IT artifacts and the human agency in dealing with them (Markus and Robey, 1988). When actors interact with IT within a specific organizational context, they attach a particular shared meaning to the technology away from a technology’s technical properties (Walsham, 1993; Orlikowski and Gash, 1994; Robey and Azevedo, 1994).

Within IS research, the relationship between time and IT was deliberated especially in the context of IT-mediated teams (Shen et al., 2015; Massey et al., 2003). For example, there is a long history of research on the role of IT in facilitating distributed work (Cummings et al., 2009) and in restructuring the temporal and spatial boundaries in teams’ decision-making process (Dennis et al., 2010). In Dennis et al. (2010), for example, team members adopted Instant Messaging (IM) technology that was not purposely designed for decision-making, in a collective manner that made this usage a norm among the members. Although the same conversation using IM could have taken place before or after the meeting, the use of IM during the meeting, and in a quiet manner between two individuals, altered the individual behavior and hence had an impact on the team decision. This provides strong evidence that IT could potentially play a significant role in altering the temporal and socio-spatial boundaries faced by teams. Traditionally these boundaries, in traditional meetings for example, cause the decision-making process to be longer due to necessary phases, such as gathering relevant information, sharing said information with members, discussing the information, and then reaching a collective decision. However, Dennis et al. (2010) illustrate how the use of IM enabled members to perform these phases simultaneously.
Nonetheless, the objective view of time continues to be noticeably favored. In the context of IT-mediated teams for example, Shen et al. (2015) found that although the experience of time varies from one team to another and uses a variety of technologies, subjective time remains elusive. This disregard in dealing with the different temporalities that might exist within IT-mediated teams makes it difficult to assess the real implications and complexities of having co-existing temporalities functioning at the same time. Simply having the IT capability available does not guarantee that it will be utilized in the way it is intended for (Dennis et al., 2008). Primarily, this could be because people differ in their perception of time and how to use their time in their embedded culture and environment (Graham, 1981).

### 2.3 IT and change

Many scholars agree that IT plays a significant role in achieving the objectives of organizational change (Turner, 1998; Hammer, 1990; Earl, 1989; Drucker, 1988). It could be argued that it is a tradition for scholars and practitioners studying or involved in change processes to consider and include IT as a major concern (Dhurkari, 2017). For example, Leonardi (2007) argues that the informational capabilities of IT are necessary for organizational change to take place. However, it is also important to consider that any IS strategy depends upon how it is enacted (Arvidsson et al., 2014). Similarly, and building on this point, Orlikowski (1996, p.65) defines organizational change as “an ongoing improvisation enacted by organizational actors trying to make sense of and act coherently in the world”. Enactment is thus essential as being the intersubjective process between the active actors within the organization to carry out the sensemaking of the change (Weick, 1969). Likewise, “Our theories concerning reality are ways of making sense of the world, and shared meanings are a form of intersubjectivity rather than objectivity.” (Walsham, 2006, p. 320). Using such enactment, those actors understand and explain as well as affect their work surroundings. In other words, they affect the IS strategy outcomes through their enactment.

Implementing IT changes in organizations is particularly challenging because in many cases it is not developed and used by the same actors thus requiring insights into inter-organizational collaboration, interplay and orchestration of possibly radically different organizational rhythms (Durkheim, 1915). For example, processes of IT change could be designed by one organization, built by another, and used in practice by a third one (Orlikowski, 1992). This might be particularly true in the case of dispersed and widely-distributed open initiatives (Tavakoli et al., 2017). The assumptions and expectations communicated to actors of the IT system play a significant role in how those actors actually use the system and adapt to new practices rather than just utilizing the system as a slightly better tool embracing the ‘same old’ practices (Beaudry & Pinsonneault, 2005; Orlikowski & Gash, 1994). This suggests the importance of establishing and maintaining a strong connection between the strategy level and those actors who are implementing a new IS. Maintaining such a connection would typically be sufficient through change agents or mediators, and in many cases, these are middle managers in organizations (Balogun & Johnson, 2005; 2004). In our case study, and in exploring Saudi Arabia’s Vision 2030, this connection can be referred to as the ‘Vision Realization Offices’ (VRO). A VRO, as we expand upon in our case, is established within each targeted organization to play a vital role in the transformation. In the work of Arvidsson et al. (2014), for example, actors implemented a system as planned but without having a clear understanding of the goals. They felt that they should be implementing the new system only as part of their jobs and by the direction of top management which led actors to ‘strategy blindness’.

The IT-mediated change in our case of Vision2030 is of a large-scale and radical, since the realization of the Vision builds on open principles of transparency, collaboration and participation (Schlagwein et al., 2017) and the introduction of drastic modifications to collective social and organizational rhythms (Durkheim, 1915). It is also important to consider that the change is strategic, complex and built upon highly interrelated activities because the affected entity is not an individual or a sole organization, but almost all of the governmental organizations of the country. This is coordinated by a specially designed orchestrator titled the ‘National Digitization Unit’ (NDU). Such orchestrators are commonly studied in research on openness, particularly in the open innovation literature (e.g. Chesbrough et al.,...
2006). The NDU is a center of excellence that was “mandated to accelerate the efforts to achieve the Vision 2030 objectives”, as they define themselves in their webpage, and seemingly has been given the important role of mediating the initiative and ensuring that the entire ecosystem transforms through and with the digital economy in Saudi Arabia through a synchronous process and at an appropriate pace. The unit is taking the ambitious role of “enabler, disruptor, incubator and guardian of a portfolio of programs, engaging with various governmental and private stakeholders in the national digital ecosystem”, also as mentioned in their webpage.

3 Research Setting

According to Vision 2030, which was first announced in April 2016, most if not all government organizations will be actively involved in open government transformation project and need to adapt their processes and practices to meet the anticipated goals within a specified time frame. Several specificities make this setting particularly well suited for studying open government, and the role of time and temporality in radical IT-driven organizational change. First, the change is driven by the vision and the time frame is deeply embedded and explicitly directed towards the future (as emphasized in the name Vision 2030). It is, however, taking place now in the present and is designed to be radically transformative to the organizational practices in the past, its present sense-making, and forward planning and strategizing. The research context thus provides a dynamic and unique opportunity to investigate the rich processes and organizational implications of the interplay between different co-existing temporalities. Since both the context of this research (Vision 2030- implying IT leadership and digital transformation), and many studies of organizational change, emphasize the role of IT in the change (Dhurkari, 2017; Leonardi, 2007; Orlikowski, 1996), this research will help us in expanding our knowledge about how organizational actors make sense of such change, while perceiving and acting upon the subjective time view and in expanding this research-in-progress. Following the above specificities of the case and insights from the literature review on organizational temporalities, time and IT and change, the following conceptual framework will underline our study (see Figure 1).

![Figure 1](image-url)  [Figure 1. Conceptual framework of the connection between different temporalities and digital transformation processes in open government]

This framework conceptualizes the connection between co-existence temporalities and the digital transformation process in the organization. While the organization is undergoing imposed IT change and the actors are trying to enact the new IS in order to implement the change, they are confronted by objective time which has specific schedules and timeframes that are linked to specific strategic goals and Key Performance Indicators (KPIs). At the same time, those actors are also confronted by subjective time which is constructed and impacted by many factors such as organizational culture and the experience of actors (which related to and builds upon their past and their future in the organization). We conceptualize that the interplay of these two different temporalities affect the transformation process while at the same time the transformation process itself affect this interplay which makes is a complex situation for actors to comprehend.
4 Proposed Methodology

This research is of an exploratory nature and therefore it uses an inductive approach, which according to Yin (2011), leads the theories to emerge from the data and gives the researcher deep insights about the investigated phenomenon. The IS research in general was dominated by the positivist ontology for a long time (Orlikowski & Baroudi, 1991). However, the interpretivism paradigm is advancing in this field and this might be because interpretivism “attempts to understand phenomena through accessing the meanings participants assign to them” (Orlikowski & Baroudi, 1991, p. 5). Therefore, in order to explore how actors in governmental organizations enact and perceive the interplay of objective and subjective time while undergoing digital transformation, and the effect of this enactment of the interplay in transformation, a qualitative case study analysis is utilized (Walsham, 2006; Stake, 2013, 1995). The use of this approach is appropriate as we seek to closely study the phenomenon in its real environment. In actioning multiple case studies, this enables researchers to also develop a better understanding of a complex phenomenon and associated data analysis (Stake, 2013; Yin, 2015). Case studies are used to provide an understanding of real life through presenting a rich holistic description and analysis of a specific unit with specific boundaries in a specific context (Merriam, 2009). Case studies are also featured for their ability to answer the ‘how’ and ‘why’ questions (Myers, 2009). In order to decide whether case study is an appropriate approach for the research, Benbasat et al. (1987, p. 372) suggest answering four questions:

![Figure 2: Benbasat et al. (1987) approach to determine the appropriateness of case study](image)

The case will be examined mainly through semi-structured interviews as the primary data source, as they allow participants to describe their perceptions freely (King, 2004). These interviews will be supplemented by other methods including written documentation (internal project reports, official announcements, newspaper clippings, archival records, organizational charts, and meeting minutes). The use of such several methods is an effective strategy to ensure the triangulation of data which qualitative researchers especially need to test the validity of data (Carter et al., 2014; Silverman, 2013; Rothbauer, 2008). Using multiple methods also provides a more holistic perspective, validates the data, and enables each method to compensate for the shortcomings of the others (Jick, 1979).

The interviews will be mainly with three different categories of actors who are involved in the transformation process within some specific projects in selected government ministries (VROs, ministry’s employees, and NDU). The analysis of the data will follow the comprehensive approach Strauss and Corbin (1990) that include three coding procedures: open coding, axial coding, and selective coding. This approach is specifically suitable for such research that intends to explore and build theory from data because it allows flexibility and adds rigor (Sarker et al., 2000).

Our preliminary findings, based on five in-depth interviews (ranging from 1 hour to 3 hours, with NDU officer, Ministry employees and VRO agents) and reading through secondary data sources (e.g. the Vision initiative, Ministry plans and project presentation, etc.) illustrate that both organizational and technological factors affect how temporalities are enacted, interplay and how changes to digitization proceed. For example, as an employee from the NDU orchestrating organization states:
When the establishment of NDU was first announced and it was linked to the countrywide digital transformation, we got too many government organizations coming to us for help... we have limited capacity, so we had to assess the situation and decide who would be the priority.

Likewise, a VRO change agent emphasis even more dramatic organizational impacts:

We are changing into a corporate mindset, this has never been done in the government. So, people who are still using the past old mentality... and... cannot cope with change... will have to be replaced because we do not have time to stop and convince them.

At the same time, a Ministry executive who works at one of the projects initiatives states:

People of the VRO do not understand how we really work, they expect specific outcomes in a specific time, which is impossible for technical reason, but they just simply do not understand these technicalities.

5 Intended Contributions and Conclusion

This research, although at an early stage, is expected to make significant theoretical contributions to IS; particularly related to openness and open government, time and IT-driven organizational change, and transformation. Specifically, we intend to better understand how the interplay between objective and subjective time unfolds during major organizational transformation and affects new aspects of implementation and change in an open governmental initiative. Furthermore, by theorizing technological mediation in the context of openness and organizational change, this research will contribute to a better understanding of the role of technology in mediating change and orchestrating aspects of time interplay. Much research effort in the IS field, and also in organizational studies, denoted the existence of both objective and subjective time within the organization and we can observe the increased calls to take time seriously in organizations. Nevertheless, the interplay between these two remains under-theorized and thus seriously undermines our knowledge regarding the role of time during openness and digital transformation. Furthermore, the role of technology and digitization in effecting this interplay has been missing especially within an imposed organizational change context where time plays a crucial role.

In sum, we argue here that our research provides a great opportunity to address the above gaps. Additionally, the proposed research is expected to contribute to practice by providing insights for organizations on how to deal with aspects of time interplay and improve the implementation of complex organizational and inter-organizational designs of large initiatives, development and IT-mediated changes.

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