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Mylène Struijk

Tilburg University, Netherlands, m.struijk@tilburguniversity.edu

Spyros Angelopoulos

Durham University, United Kingdom, spyros.angelopoulos@durham.ac.uk

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DIGITAL TRANSFORMATION GOVERNANCE IN META- ORGANIZATIONS: A CASE OF MACROCEPHALY

Mylène Struijk

*Tilburg University, Tilburg, The Netherlands
M.Struijk@tilburguniversity.edu*

Spyros Angelopoulos

*Durham University, Durham, United Kingdom
Spyros.Angelopoulos@durham.ac.uk*

Abstract

While governance has been a key topic in the extant Information Systems research agenda, only scant attention has been paid to the concept during digital transformation (DT) endeavours. To address that lacuna, we examine DT governance in the context of a meta-organization, which allows us to unearth informal governance mechanisms due to the absence of formal authority. While our study is still in progress, we have collected a wealth of archival, interview, and observational data at a multinational military meta-organization engaged in a DT endeavour. The preliminary findings of our study point us to introduce a new concept, which we refer to as macrocephaly, where the head of an organization is too large for its body, hampering effective and efficient decision-making. We also showcase that the varied background of the meta-organization members in terms of digital experience and their different incentives and expectations of the DT endeavour further complicates decision-making.

Keywords: Meta-Organizations, Digital Transformation, Governance

1 Introduction

The development and implementation of information systems (IS) projects are becoming increasingly complex as part of larger digital transformation (DT) endeavours, which aim to radically change various organizational properties (Vial, 2019). During such endeavours, organizations try to achieve a substantial shift towards digital ways of conducting business (Angelopoulos et al., 2023), thereby experiencing conflicting demands for stability and change (Christensen et al., 2016), as reflected in the low percentage (16%) of organizations that consider themselves successful in such endeavours (De la Boutetière et al., 2018). Moreover, most DT endeavours are perceived to be more costly than anticipated, extending expected schedules, and delivering less than needed.

While such complexity is faced by organizations in general, the unique characteristics of meta-organizations can give rise to additional challenges. Meta-organizations comprise “multiple legally autonomous entities” (Gulati et al., 2012, p.571) and combine organizational and market mechanisms (Constantiou et al., 2017). The members of meta-organizations participate voluntarily, they have different incentives to do so (e.g., Valente & Oliver, 2018), and keep their autonomy, thereby resulting in co-opetition. Contemporary examples of meta-organizations include digital platforms ecosystems such as Uber and AirBnB, but also more traditional ones, such as labour unions and multinational military organizations. Meta-organizations that fall under the latter category—as applies to any pre-digital organization (Chantias et al., 2019)—are increasingly pressured to adopt digital technologies to remain relevant. In contrast to traditional organizations, however, meta-organizations are subject to complex co-opetition, reliance on a large number of stakeholders, a weak organizational structure, as well as the absence of formal authority, which make their DT endeavours even more complex.

Such characteristics posit the question as to what extent insights from traditional organizational theories and the contemporary IS literature can be applied for studying meta-organizations (e.g., Gulati et al., 2012). Concurrently, the study of such characteristics can unearth novel insights into their influence on DT endeavours. For instance, the co-opetition between members of meta-organizations and the absence of a formal authority can provide unique opportunities for examining the implications of more informal governance mechanisms on the overall outcome of DT endeavours. While governance has

been a key research topic in the extant IS literature (e.g., Weill & Ross, 2005) and has recently sparked new interest in the context of organizations that have been successful in their DT endeavours (e.g., DeLone et al., 2018), governance during DT endeavours has received scant attention to date. Given that most DT endeavours seem to fail despite the fact that they can significantly improve organizational performance (e.g., Feliciano-Cestero et al., 2023), it becomes timely and topical to understand how DT-related decisions are made (e.g., Koukouviniou et al., 2022). Compared with traditional IT implementation endeavours, DT ones are likely to affect various stakeholders beyond focal organizational boundaries and have a disruptive and widespread impact (Vial, 2019).

To address that lacuna, we examine DT governance specifically in the context of meta-organizations. We zoom in on the role of the various decision-makers engaged in co-competition through the meta-organization, thereby having different incentives and objectives, and elucidate the implications for employees directly involved in DT endeavours when no formal authority exists. We conduct a longitudinal case study at a multinational military organization (henceforth: AirTrans, a pseudonym), where we i) collected organizational documents for a period of over ten years since the founding of this meta-organization, ii) conducted 60 semi-structured interviews, and iii) closely observed organizational actors at various levels over a period of three years. While our case study is within a military context and, therefore, with a strict organizational hierarchy, we find that the meta-organizational nature of AirTrans was stronger than its military one, which portrayed a barrier to effective and efficient DT governance. DT initiatives were driven bottom-up, while decision-making had to occur at the top of the meta-organization. More specifically, since no single actor had full formal authority over the DT endeavour, a high number of decision-makers were involved, which represented a barrier to the DT endeavour. We refer to this as *macrocephaly*, where the head of an organization or team is too large for the body, thereby hampering decision-making. In sum, meta-organizations possess unique characteristics that affect DT governance and slow down decision-making, thereby hampering the successful realization of DT endeavours.

2 Background

2.1 Meta-Organizations

Meta-organizations represent an alternative organizational design to the traditional ones, and they consist of multiple entities that are legally autonomous and, therefore, not bound by formal employment contracts (Gulati et al., 2012), yet working together towards a shared system-level goal (e.g., Ahrne & Brunsson, 2008; Chen et al., 2022). Such an alternative organizational design incorporates unique and often paradoxical characteristics that make it distinguished from traditional ones, thereby increasingly making the insights from traditional organizational theory assumptions questionable.

While the members of a meta-organization work together towards a shared system-level goal, they have different incentives, which often include forms of achieving synergies or technological complementarities (Thorelli, 1986) or to better handle complexity (Valente & Oliver, 2018). The various incentives of the meta-organization members affect their level of informal authority, which is often linked to the extent to which they bring in specific qualities, such as expertise, reputation, and key resources (e.g., Dahlander et al., 2016; Lee & Cole, 2003), thereby determining their bargaining power. Due to the absence of formal employment contracts, authority within meta-organizations is arranged through informal mechanisms (Gulati et al., 2012), and such a lack of formal structure is often perceived as structurally weak because of the members' interdependence, yet increasingly relevant and important in addressing collective issues (Ahrne & Brunsson, 2005; Berkowitz & Dumez, 2016), which seem to be increasingly focused on bringing together the demand-side actors with the supply-side ones.

Digital platform ecosystems are emerging rapidly as a novel way of matching demand-side actors with supply-side ones by relying on digital technologies. The supply-side actors are often direct competitors while contributing to the same shared system-level goal. Besides that, members of the meta-organization can also compete in certain areas with the meta-organization itself (Ahrne & Brunsson, 2008). Hence, meta-organizations and their members are often subject to complex co-opetition patterns. In terms of competition between various meta-organizations, different perspectives have emerged in the literature on the topic. More traditionally, when talking about meta-organizations such as labour unions, the members had little incentive to join other competing meta-

organizations (Ahrne & Brunsson, 2005). Recently, however, there is increasing competition between meta-organizations (e.g., Kretschmer et al., 2022), partially caused by shifts in the relevant regulations and laws (Gawer, 2021). Consequently, meta-organizations tend to implement specific governance and control mechanisms to address the various types of competition (Constantinides et al., 2018; Kretschmer et al., 2022).

2.2 Governance during Digital Transformation

DT can be defined as “*a process that aims to improve an entity by triggering significant changes to its properties through combinations of information, computing, communication, and connectivity technologies*” (Vial, 2019, p.133). Hence, we focus on the combined effects that digital technologies can have on organizational properties, thereby potentially replacing or complementing existing ones (Verhoef et al., 2021). While the adoption of digital technologies can trigger changes to such properties, their successful implementation also requires initial organizational changes, such as systematic changes in organizational structure, roles, and ways of working (e.g., Eggers & Park, 2018; Parviainen et al., 2017). Transformational changes, however, are often resisted in practice, as organizations need to balance the exploitation of existing capabilities with the exploration of new ones (Sebastian et al., 2017), but tend to favour the exploitation of those that have been proven successful. In failed DT endeavours, existing resources and capabilities often represent a liability for organizations, as their transformation can be constrained due to high levels of path dependency (Srivastava & Shainesh, 2015). Hence, organizations are often rooted in inertia, making it difficult to realize the necessary changes for a successful DT (Vial, 2019), while the acceleration of change caused by the implementation of novel digital technologies can result in increased levels of organizational complexity (Loonam et al., 2018; Matt et al., 2015).

Organizational actors, thus, must find ways to deal with such complexity, and make decisions on the strategic, tactical, and operational level. The literature acknowledges that DT is often driven by top-down initiatives (e.g., Gong & Ribiere, 2021), while top management involvement represents a key success factor for efficient decision-making (e.g., Matt et al., 2015). As DT is such a novel and complex process, however, organizations might be unable to rely on traditional decision-making (Wrede et al., 2020).

Governance related to IT refers to processes, structures, and mechanisms for IT decision-making (Van Grembergen et al., 2004), and is primarily concerned with who is responsible and accountable for IT decision-making with the aim to encourage desirable behaviour (Weill & Ross, 2005). In a similar vein, here we define DT governance as *decision-making processes, structures, and mechanisms related to the DT endeavour*.

3 Methodology

3.1 Case Organization

We conducted a longitudinal, in-depth case study at AirTrans, a multinational military organization. The case organization was established 12 years ago and serves various participating nations by pooling together their air transport resources and assets, aiming to plan and execute military air transport missions effectively and efficiently. Such missions include, *inter alia*, cargo transportation, air-to-air refuelling, as well as medical evacuations. AirTrans is not a legal entity, and the employees at its headquarters (HQ) are provided by the participating nations with an average tenure period of three years. AirTrans, therefore, can be clearly classified as a pre-digital meta-organization.

The general governance structure of AirTrans is clearly documented, where an external air transport committee represents the highest decision level. This committee is composed of the air chiefs of the participating nations that together decide on the strategy of AirTrans (the strategic directives in our archival data) and gets advice from an advisory group consisting of representatives of the nations and a budget committee. Furthermore, AirTrans has a strong hierarchical organizational structure on paper, with many high-ranked leadership positions that command a total of around 150 employees provided to the HQ by the different participating nations. The command group consists of three generals with a tenure period of two years, while all the participating nations also provide at least one colonel. While the internal governance mechanisms are less clearly defined, decisions must be made by a section head, followed by a branch head, then a division head (and deputy head), and finally the command group. For some decisions, all senior national representatives need to agree. Therefore, AirTrans must satisfy many multinational stakeholders, is subject to multinational laws, rules, regulations, and expectations, and is dependent on multinational inputs and investments.

Such a multinational dependency is also reflected in the underlying IT infrastructure of AirTrans. Upon its foundation, AirTrans could use the IT infrastructure and services of the host nation, which were deemed sufficient at the time. However, their inadequacy for the multinational and complex structure of AirTrans, as well as the volatile environment in which it operates soon became apparent. Besides that, AirTrans was subject to increasing pressures from internal as well as external actors to optimize the IT infrastructure and adopt digital technologies. Hence, AirTrans initiated a DT endeavour several years ago, which revolved around a new, independent, and modular IT infrastructure with a high fault tolerance, supported by redundant, highly available services. Such an infrastructure had to be complemented with certified gateways, allowing secure information exchange from various (mobile) locations around the world so that AirTrans could transform into the key centre of expertise in air mobility, offering fast and scalable solutions to deal with crisis situations. To do so, AirTrans needed to adopt new digital technologies, including mobile, cloud, as well as novel analytical tools.

This case organization is especially relevant as our focal phenomenon of interest is the unfolding of DT in the context of meta-organizations. AirTrans is a meta-organization that has been engaged in a DT endeavour for many years. Due to its highly complex environment consisting of many stakeholders, we had the opportunity to examine different pressures, incentives, and perspectives with regard to the DT endeavour.

3.2 Data Collection and Analysis

We conducted 60 semi-structured interviews (all audio-recorded and transcribed, with an average duration of 51 minutes) with 34 employees from the participating nations based at the HQ of AirTrans. We have also observed the employees from the participating nations at AirTrans and we had numerous informal discussions with them for a period of three years, from 2019 to 2022. To select the participants of our study, we used a purposive sampling approach to ensure that we would recruit employees from different nations, with different military ranks, and different roles in the organization (Thornhill et al., 2009). Our interview protocol was semi-structured and included questions about the participating nations, the purpose and value of AirTrans, its organiza-

tional structure and organizational mechanisms, and the DT endeavour, while also allowing us to ask follow-up questions. To ensure that the participants of our study could share all their experiences without interference, we used a story-telling approach during the interviews (Czarniawska, 2004). When it comes to the data analysis, currently we are coding the interviews, having started with the individual experiences of our interviewees, followed by more abstract conceptual categories and themes to identify patterns. In doing so, AirTrans has provided us with access to all organizational documents from its foundation onwards, which included strategic directives, minutes of various meetings, and public statements. This resulted in a total number of 1065 documents, of which 308 were relevant to our case study. Whilst we present significant preliminary findings that have timely implications for DT governance, we are still in the process of coding these documents to identify themes and develop a timeline of the DT endeavour.

4 Preliminary Findings

We find that the DT endeavour of AirTrans seem to have initiated from the lower levels of the organizational structure, primarily from employees working at the communications and information systems (CIS) branch. Formally, the endeavour initiated by the CIS branch for setting up an new IT infrastructure that would allow AirTrans to become less dependent on the one of the host nation, and ensure that they could implement and adopt necessary novel digital technologies. Originally, all IT solutions had to be selected by the host nation, while the multinational needs of AirTrans were very different and required other than the provided solutions. The meta-organization nature of AirTrans would result in shorter decision-making cycles and flexibility when it comes to investing in IT. Becoming more independent from the host nation services, therefore, was expected to result in increased innovation and faster transformation. In practice, however, the decision-making related to the DT endeavour at AirTrans was found to be very slow and inefficient. Hence, before any DT-related information reached the top management of the organization, various meetings had to be scheduled, and to take place to decide whether to put an initiative on the discussion agenda. This also becomes apparent from the discussions that were taking place in the formal meetings, as revealed from the meeting minutes that we had at our disposal for analysis. Consequently, many

decision-makers were involved in the planning of the DT endeavour, which was resulting in numerous debates and continuous postponing of actual decision-making.

Besides the large number of decision-makers involved in the DT planning, the lack of formal authority is noticeable and affects the efficiency of decision-making, which was based on consensus rather than on authority. From their DT workgroup meetings and preparations, it became clearer that the meta-organizational nature of AirTrans overtakes its military one and presents additional challenges. Hence, decisions are made with national incentives and interests in mind, instead of focusing on the potential new value they can create through the DT endeavour. Moreover, the participating nations are not equally mature in using digital technologies, leading to different perspectives on the direction of the DT endeavour. Most interviewees attributed the meta-organizational challenges and their potential solutions to management and decision-making.

Hence, our preliminary findings indicate that meta-organizations possess unique characteristics, such as the different autonomous members involved and the lack of formal authority, that complicate DT governance. A key finding of our study is that too many decision-makers are involved in the DT endeavour due to the lack of formal authority, resulting in what we refer to here as *organizational macrocephaly*. In such a situation, the head of an organization or a team is too big for the body, resulting in inefficient decision-making. The complexity of the DT endeavour, combined with the various experiences and expectations of the involved actors, further extends the decision-making process. While our work is still in progress, we expect that our findings contribute to the extant IS literature by examining governance *during* DT endeavour, and the broader management literature by examining the implications of meta-organizations for governance. Such insights are especially timely and topical now that meta-organizations, such as digital platforms ecosystems, are rapidly emerging (e.g., Altman et al., 2021; Chen et al., 2022; Gawer, 2014; Kretschmer et al., 2022), and the extant relevant literature is increasingly interested in understanding governance mechanisms.

5 Limitations and Future Research

While AirTrans is a pre-digital meta-organization, it represents a unique organizational setting of significant operational complexity, and our findings, thus, might relate to factors that influence DT governance in the context of multinational military organizations. When it comes to the remaining work for this research project, we are currently immersed in the data analysis of both the interviews as well as the organizational documents to further refine our findings, while we are also extending our data collection as AirTrans is further progressing with its DT endeavour. In doing so, we expect to present governance mechanisms and processes related to the DT endeavour, as well as the dynamic changes that have been occurring at AirTrans during that period to improve our examination of governance during DT endeavours. For instance, AirTrans has already implemented various technological solutions that have transformed its operations, such as mobile and cloud solutions (e.g., Struijk et al., 2020; 2023). We aim to further unpack how the experiences with the implementation of such technologies affect DT governance. AirTrans is currently changing its approach towards the DT endeavour by implementing a formalized program and project management, thereby already reducing the number of decision-makers involved in the DT endeavour. Such a development allows us to further observe and examine the strengths of such approaches in a context characterized by complex governance due to increased co-opetition. We call for future studies to further elucidate the topic of DT governance through research within the context of other pre-digital as well as digitally native meta-organizations.

6 Conclusion

In this research project, we embarked on an examination of DT governance in the context of a meta-organization, which enabled us to unearth informal governance mechanisms due to the absence of formal authority. While our research project is still in progress, we have already collected a wealth of archival, interview, and observational data at a multinational military meta-organization engaged in a DT endeavour. The preliminary findings of our research project point us to the introduction of a new concept, which we refer to as *macrocephaly*, where the head of an organization is too large for

its body, hampering effective and efficient decision-making. In doing so, we also showcase that the varied background of the meta-organization members in terms of digital experience and their different incentives and expectations of the DT endeavour further complicates DT decision-making. In sum, our work delineates that meta-organizations possess unique characteristics that affect DT governance and slow down the relevant decision-making, thereby hampering the successful realization of DT endeavours. Our work extends insights into DT challenges and contributes to the contemporary IS research agenda (Struijk et al., 2022) with significant contribution also for IS practice (Davison, 2022), primarily focusing on governance during DT endeavours. Concurrently, our work is in line with recent calls in the literature to elucidate IS phenomena through the collection and analysis of rich qualitative data (Monteiro et al., 2022). While we are immersed in finalizing the analysis of our collected data to present governance mechanisms and processes related to the DT endeavour, as well as the dynamic changes that have been occurring at the case organization during that period to improve our examination of DT governance, we call for future studies to further elucidate the topic through research within the context of other types of meta-organizations.

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