Managing the Paradoxical Tension between Digital and IT

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Abstract: Digital transformation promotes an innovative, agile, and user-centric approach, which is contrasted with traditional government-centric information technology (IT). This distinction is also reflected in organizational design, with emerging new roles and units focusing on digital transformation. These new roles and units need to operate in an existing, already complex IT landscape, characterized by interdependent levels of government, each with centralized and decentralized IT departments. This research-in-progress aims to investigate, through an interpretive multiple-case study, how digital government units manage the paradoxical tension between digital and IT. The final study will contribute to an organizational design focus in the 'digital versus IT' debate.

Keywords: Digital transformation, digital unit, organizational paradox, paradox management

1. Introduction

The word 'digital' becomes increasingly pervasive in the e-government discourse, and is often contrasted to more traditional information technology (IT). Digital is linked to an agile, user-centric approach (Clarke, 2020; Mergel, Ghanapti & Witford, 2020) and platform models (Dunleavy et al., 2006; Fishenden & Thompson, 2013). Its innovative character is highlighted in terms such as digital public service innovation (Bertot, Estevez & Janowski, 2016) and digital transformation (Mergel, Edelmann & Haug, 2019; Pittaway & Montazemi 2020).

The distinction between digital and IT is also reflected in organizational design, with the emerging Chief Digital Officer (CDO) role (Horlacher & Hess, 2016; Singh, Klarner & Hess, 2020; Tumbas, Berente & Vom Brocke, 2018) and the establishment of digital innovation labs and digital units (Clarke, 2020; Mergel, 2019) in addition to existing Chief Information Officer (CIO) functions and IT departments.

The governmental IT landscape was already complicated, with IT departments at different levels (local, regional, national, international) which are often interdependent. For example, local governments are in an ideal position to deliver enhanced digital public services, but lack integrated enterprise systems (Pittaway & Montazemi, 2020). In addition, even within one level centralized and decentralized CIO offices often co-exist (Mergel, 2019).

Reaching the expectations of digital and digital transformation - whether they are to be realized in separate digital units or in existing IT departments - causes a paradoxical tension. Two modes of working, digital transformation and traditional IT support, are needed, but both can be at odds with each other as well (Gartner, 2015).

Previous research has investigated the paradoxical tensions - "persistent contradiction between interdependent elements" (Schad et al. 2016) - linked to digital transformation (Gregory et al., 2015; Soh et al., 2019; Svahn, Mathiassen & Lindgren, 2017; Wimelius et al., 2020; author, date) and the paradoxical tension between the CDO function and IT function (Tumbas et al. 2018), but with a predominant focus on individual private sector organizations. In the e-government context, previous research has investigated the set-up of separate digital units (Mergel, 2019), but has not focused on how these units manage the tensions with existing IT departments. Moreover, a growing body of literature investigates national digital teams (Clarke, 2020; Mergel, 2019) and national digital strategy, but less attention has gone out to the regional level, which is characterized by complex alignment challenges.

Therefore, this research-in-progress aims to answer the research question: How do regional digital transformation units respond to the tension between digital and IT? Although paradoxes cannot be resolved (Poole & Van de Ven, 1989), several responses are possible. Coping mechanisms include acceptance and working through, spatial or temporal separation, synthesis, or a combination of these approaches (Schad et al., 2016; Jarzabkowski et al., 2013). To answer the research question, an exploratory multiple-case study will investigate how digital teams in different regional government organizations enact their digital role in relation to existing IT functions and departments.

The final article will contextualize digital transformation paradox research for the public sector. It will contribute an organizational design focus in the 'digital versus IT' debate in public administration and e-government literature, and draw attention to alignment challenges at the regional government level.

2. Literature

2.1 IT versus Digital

Digital transformation is "a process wherein organizations respond to changes taking place in their environment by using digital technologies to alter their value creating processes" (Vial, 2019). In the public sector, digital transformation is defined as "a holistic effort to revise core processes and services of government beyond the traditional digitization efforts. It evolves along a continuum of transition from analog to digital to a full stack review of policies, current processes, and user needs and results in a complete revision of the existing and the creation of new digital services. The outcome of digital transformation efforts focuses among others on the satisfaction of user needs, new forms of service delivery, and the expansion of the user base" (Mergel et al., 2019). Both definitions emphasize how digital transformation is more than the mere digitization of processes and services, and recognize the importance of structural changes.

In some cases, digital transformation is considered a shared responsibility for the organization as a whole (Svahn et al., 2017). But often, a separate independent unit is created which is responsible for digital transformation (Maedche, 2016; Sia, Soh & Weil 2016) and for creating "networked and agile IT governance structures in addition to the existing IT governance organizational units" (Mergel, 2019). Examples include national digital service teams such as the Government digital service team (UK), the US Digital Service and 18F (USA), the Australian Digital Transformation Agency, the Canadian digital service team, the Estonian chief information office, the Danish agency for digitization, Team digitale (Italy) and D9 (Finland) (Clarke, 2020; Mergel, 2019). In both cases, whether or not the mandate for digital transformation is given to a separate independent unit, cross-functional and cross-level changes across organizational elements will be necessary (Gong, Yang & Shi, 2020).

Digital transformation introduces a new logic and requires more alignment across silos at the same time, providing a context naturally characterized by 'both/and' tensions (Smith et al., 2016). It requires an IT function focused on stability, speed and experimentation (Haffke, Kalgovas & Benlian, 2017), characterized by both traditional IT and digital logics (see Table 1).

Table 1: IT versus digital logic (Clarke, 2020, p. 363)

Traditional Approaches to Government IT ('e-government')	Current Digital Government Orthodoxy
Waterfall design, the long release cycle	Agile, iterative design
Government-centric (focused on adhering to internal government standards, processes and needs)	User-centric (focused on identifying user needs, and tailoring government standards and processes around these needs)
Limited reliance on data in decision making and design	Heavy reliance on data-driven decision making and design
Managing legacy contracts with a small number of big IT providers	Building in house and procuring with a competitive, pluralistic market
Favors proprietary solutions	Favors open source solutions
Siloed ('one use', department/initiative specific project development and IT management)	Horizontal, platform models ('multiple use', whole of government project development and IT management)
Risk-averse, process-first, hierarchical organizational culture	Hacker, delivery-first, 'flatter' organizational culture

2.2 Dealing with Paradoxical Tensions

The tension between traditional IT and digital is a paradoxical tension, a "persistent contradiction between interdependent elements" (Schad et al. 2016). Both digital transformation and traditional IT

support are needed, even though both are sometimes at odds with each other (Gartner, 2015). In other words, IT and digital are "contradictory yet interrelated elements (dualities) that exist simultaneously and persist over time; such elements seem logical when considered in isolation, but irrational, inconsistent, and absurd when juxtaposed" (Smith and Lewis 2011).

The paradoxical tension between traditional IT and digital logics exists within IT departments, but also between digital units and IT departments. Although digital units want to operate under the digital logic of action, they are not strictly isolated from the more traditional IT departments: they do projects for IT departments and have IT professionals work in digital units on initiatives relevant to their mandate (Clarke, 2020).

Paradoxical tensions cannot be resolved (Poole and Van de Ven, 1989), but coping mechanisms for managing the paradox include acceptance and working through, spatial or temporal separation, synthesis, or a combination of these approaches (Schad et al. 2016; Jarzabkowski et al. 2013).

A nascent body of research studies paradoxes in the digital transformation context and has identified responses to digital transformation paradoxes. Responses include blending and balancing (Gregory et al., 2015), being defensive and receptive (Soh et al., 2019), and integrating, splitting, pretending and avoiding (Wimelius et al., 2021). In the context of this study, especially the approaches for navigating tensions between digital and IT logics of action are interesting. Based on interviews with CDOs in 35 private sector organizations, Tumbas et al. (2018) identify different approaches for managing the tension between digital and IT logics of action:

- Grafting, which enables digital initiatives by tightly linking these new practices and capabilities with an existing functional unit
- Bridging, which involves establishing links between existing functional units to achieve a new digital initiative
- Decoupling, which describes how new digital initiatives are separated and insulated from the existing functional units to achieve a new digital initiative

The approaches for coping with the paradoxical tension between digital and IT (grafting, bridging, and decoupling) have been identified in single private organizations where a CDO role was introduced in addition to an existing CIO function and department. In the government context, the list of approaches for managing the paradoxical tension might have to be adapted and expanded to better reflected the complex landscape. For example, centralized digital service teams might apply grafting approaches in several ways: by tightly linking new practices and capabilities with an existing centralized IT department, or with existing decentralized IT departments part of individual government agencies. Digital service teams could engage in bridging approaches and link existing functional units within one or several government agencies, at one or several different levels of government. A centralized or decentralized IT department could decide to decouple digital initiatives in separate units.

3. Methodology

The goal of this research-in-progress is to understand how digital units respond to the paradoxical tension between digital and IT. The study uses an interpretive approach (Klein & Myers, 1999; Walsham, 1995) which values "in-depth access to people, issues, and data" (Walsham, 2006). With the aim to understand the paradoxical tension from different perspectives, an exploratory single-case study approach will be used.

For this research-in-progress, a critical case (Flyvbjerg, 2006) was selected at the Flemish regional government level in Belgium, a federal state. The case of Digitaal Vlaanderen, the Flemish government agency providing IT and digital services to regional and local government, is considered critical for three reasons. First, the Flemish region has the ambition to become a top performer, even though it is at a rather average position in Europe today. Belgium is ranked 9th out of 28 EU member states in the Digital Economy and Society index, and 16th when it comes to the digital public services dimension (European Commission, 2020). The Flemish region, however, has expressed clear ambitions: moving from the 12th place to the top 5 in the digital public services dimension of the DESI index by 2024 (Digitaal Vlaanderen, 2021). In this context, where the full potential of digital for transformation still has to be recognized, the tensions between digital and IT might be most pronounced. Second, Digitaal Vlaanderen is a new agency which was established in 2021 by merging Informatie Vlaanderen (responsible for digital) and Het Facilitair Bedrijf (responsible for IT). We expect that during such a reorganization, dealing with the tensions between digital and IT is an important issue. Third, Digitaal Vlaanderen provides services to other regional and local administrations, some of them with an own IT department or a digital unit. The agency operates in a context characterized by the need for inter-organizational and multi-level collaboration and coordination. It provides a context which differs greatly from the single private organizational context in which the management of paradoxical tensions related to digital transformation has been investigated up to now. As a result, it provides a promising context for identifying refinements or additions to the approaches for managing the paradoxical tension between digital and IT.

Data will be gathered through interviews with the administrator-general responsible for Digitaal Vlaanderen (who was also the administrator-general at Informatie Vlaanderen) and the former administrator-general at Het Facilitair Bedrijf. This will be complemented with interviews with key public servants who assisted in the merger. In the final study, the central perspective of Digitaal Vlaanderen will also be complemented with the decentral perspective of CIOs and key personnel of IT deparments in other government agencies of the Flemish region, who are supported by Digitaal Vlaanderen.

The aim of this study is to explore whether the approaches for dealing with the paradoxical tensions between digital and IT in private sector organizations (grafting, bridging and decoupling) still hold in the more complex public sector context, or whether additions to this theory are necessary. Therefore, data analysis will occur through a dialogical process between data and theory (Walsham, 1995; Klein & Myers, 1999).

4. Conclusion

In this research-in-progress, the aim is to explore how regional digital units manage the tensions between digital and IT, to refine or add to organizational paradox theory. The final research will not only contextualize digital transformation paradox research for the public sector. It will also bring a focus on organizational design elements in the public administration and e-government literature focusing on digital transformation.

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Lieselot Danneels is Assistant Professor of e-governance at Ghent University, Belgium. In her research she examines digital transformation in government. She is particularly interested in organizational design for digital transformation, (open and big) data as a platform, and smart city ecosystems. Her research is published in Government Information Quarterly, Cutter IT Journal, and in the proceedings of several renowned e-government conferences.