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## **Same But Different**

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*Published in:*

Journal of the Association of Information Systems (JAIS)

*DOI (link to publication from Publisher):*

[10.17705/1jais.00770](https://doi.org/10.17705/1jais.00770)

*Publication date:*

2023

*Document Version*

Publisher's PDF, also known as Version of record

[Link to publication from Aalborg University](#)

*Citation for published version (APA):*

Noesgaard, M. S., Nielsen, J. A., Jensen, T. B., & Mathiassen, L. (2023). Same But Different: Variations in Reactions to Digital Transformation Within an Organizational Field. *Journal of the Association of Information Systems (JAIS)*, 24(1), 12-34. <https://doi.org/10.17705/1jais.00770>

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# Same but Different: Variations in Reactions to Digital Transformation Within an Organizational Field

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## Abstract

Researchers and practitioners are increasingly interested in understanding how organizations transform their value propositions and practices using digital technologies. While the extant literature offers important empirical and theoretical insights into digital transformation in individual organizations, we know little about how adopting organizations within an organizational field react differently over time to the same digital transformation initiative. This is unfortunate, as such insights could help scholars and managers understand option repertoires and constraints in handling digital transformation ideas that travel into organizations. Against this backdrop, we had access to a unique case over an eighteen-year period, which shows how organizations within the Danish home care field reacted differently to a nationwide digital transformation initiative on mobile technology use. To analyze this case, we applied *virus theory* as a promising perspective for examining how and why the same digital technology and transformation idea occasions different reactions in similar contexts. Our analysis highlights the emerging, fluctuating, and consequential nature of digital transformation within the Danish home care field, which has led to very different reactions across adopting organizations. Drawing on this analysis, we contribute to the expanding literature on digital transformation by providing theoretical and practical knowledge about variations regarding how organizations within an organizational field react over time to digital transformation ideas.

**Keywords:** Digital Transformation, Organizational Field, Organizational Reaction, Virus Perspective, Longitudinal Case Study

Walter Fernandez was the accepting senior editor. This research article was submitted on August 13, 2020 and underwent three revisions.

## 1 Introduction

Academics and practitioners are increasingly engaging in conversations about digital transformation (Sebastian et al., 2017; Vial, 2019) as a long-term change process that transforms organizations from one state of operation to another through digital technologies (Baiyere et al., 2017). The rapidly expanding literature on digital transformation (Hanelt et al., 2020) has stressed the strategies and processes involved in changing an organization's core business processes through digital

technology (Singh & Hess 2017; Vial, 2019; Weill & Woerner, 2013). On the strategic level, the focus has been on the important role of top managers in conceiving and carefully planning the different stages of digital transformations (Bharadwaj et al., 2013; Hess et al., 2016; Valdez-de-Leon, 2016). On the process level, research has highlighted the importance of cultivating an experimental mindset across the organization to facilitate change (Kane, 2019), including the management of inertia and resistance to change (Karimi & Walther, 2015; Selander & Jarvenpaa, 2016; Wessel et al., 2021).

Appreciating this work as foundational to understanding and managing digital transformations, more focus should be directed toward understanding the dynamic interaction between strategic choices and process activities that underpin organizations' digital transformational efforts (Wessel et al., 2021). There is, however, a dearth of studies that investigate these interactions and their consequences regarding how the same digital transformation initiative may occasion different reactions across organizations and over time. To engage this conversation, we were inspired by *virus theory*, proposed by Røvik (2011). Despite the negative connotation of the name, this theory is promising, as it takes the analysis beyond adoption-rejection thinking toward underscoring the active role of “the virus” and “the host” in transforming ideas into new and different forms across organizations and over time. The theory not only centers our attention on what digital transformation is and how digital technologies diffuse across and within organizational fields but, importantly, it also zooms in on how “they function in hosts” (Røvik, 2011, p. 633). As such, and in line with Barley's seminal study on the adoption of CT scanners in radiology (1986), virus theory provides a promising vocabulary for examining how and why the same digital technology and transformation idea occasions different reactions in similar contexts.

Virus theory (Røvik, 2011) has been applied in organizational research to offer an alternative perspective on the diffusion of management accounting innovations (Johanson & Madsen, 2018), the institutionalization of a balanced scorecard (Madsen & Slåtten, 2015), the processes of institutionalizing strategic communication (Kjeldsen, 2013), and the implementation of process management (Quist & Hellström, 2012). It has yet, however, to play a prominent role in digital transformation and information systems (IS) research. Inspired by virus theory's vocabulary of infection, incubation, mutation, replication, immunity, and dormancy, we examined variations in organizational reactions to digital transformation within an organizational field by addressing the following research question:

**RQ:** How do adopting organizations within a field react to the same digital transformation initiative?

To address this question, we report the findings from a longitudinal case study of a digital transformation initiative within Danish home care aimed at modernizing the entire organizational field by introducing mobile technology for frontline staff. The initiative was presented as a home care revolution (D1<sup>1</sup>) and major change (D2) reflecting its transformative potential in reconfiguring home care work practices.

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<sup>1</sup> All directly used documentary material from the digital transformation case on mobile technology is referenced in

Building upon the most-similar case study method (Gerring & Cojocaru, 2016), we selected this digital transformation initiative due to its similarities in terms of structure (the home care field), technology (mobile technology), task (care work), and users (caregivers), thereby constituting a unique case (Flyvbjerg, 2006) to compare the different ways in which three home care organizations reacted to the same digital transformation initiative over time. While all three organizations were “infected” by adopting mobile technology, their subsequent reactions differed. The first organization reacted through replication followed by mutation, where management initially adopted a control-based mobile technology use regime and later morphed it into a trust-based regime. In the second organization, the infection of mobile technology turned into a reaction of immunity followed by dormancy, in which the organization decided at an early stage to abandon mobile technology before revitalizing it. The third organization reacted through incubation and then replication, in which the digital transformation initiative matured through a slow-paced transformation with a series of incremental changes and adaptations. Based on these insights into the emerging, fluctuating, and consequential nature of the digital transformation, our virus-inspired analysis brings sensitivity to the undertheorized phenomenon of variations in how adopting organizations within an organizational field react to the same digital transformation initiative.

We proceed with a literature overview reviewing how scholars have investigated organizational reactions to digital transformation. Highlighting the shortcomings of this research, we propose virus theory as an alternative perspective for studying the dynamic nature of organizational reactions to digital transformation initiatives within organizational fields. We then describe the methodology and longitudinal case study context before analyzing how the three home care organizations reacted differently to the same digital transformation initiative over time. We conclude by discussing the contributions and practical implications of our study, along with its limitations and suggestions for future research.

## 2 Organizational Reaction to Digital Transformation

While there is debate in the IS literature about what digital transformation is and is not (Gong & Ribeire, 2021; Lanzolla et al., 2018; Vial, 2019; Wessel et al., 2021), we follow the broad definition by Hanelt et al. (2020) that considers digital transformation “organizational change that is triggered and shaped by the widespread diffusion of digital technologies” (p.

the Appendix. We use the format (DX) to refer to the documents, where X stands for the document number.

2). From this perspective, the focus is not on software upgrades or IT projects, but rather on organizational change initiatives enabled by digital technologies—such as artificial intelligence, digital platforms and mobile solutions—that have major influences on how organizations operate to deliver services and value (Andriole, 2017; Hanelt et al., 2020; Vial, 2019).

Although rapid technological development for many organizations represents an opportunity to change existing or create new value propositions (Remane et al., 2017), well-established organizations often consider digital transformation an existential threat (Sebastian et al., 2017). Consequently, digital transformation initiatives create not only opportunities for learning and performance gains but also the potential for misalignment “between the incumbent institutional regime and the institutional logics embedded in the new system” (Gosain, 2004, p. 165), which may negatively affect organizational performance (Strong & Volkoff, 2010). As such, engaging in digital transformation is not a simple matter for most organizations, and research underscores that it is often emergent and loaded with tensions rather than straightforward and planned upfront (Baiyere et al., 2017; Smith & Beretta, 2020). This view on digital transformation corresponds to the theoretical approach used in this paper, as viruses do not plan their contagion processes (Røvik, 2011).

The literature on organizational reactions to digital transformation covers three perspectives: strategy-oriented, process-oriented, and impact-oriented (see Table 1). The first perspective emphasizes the strategies that organizations pursue as they react purposefully by exploring opportunities afforded by digital technologies (Vial, 2019), or as they react to technology as a source of digital threat (Ravasi & Schultz, 2006). Research has demonstrated the different ways that environmental change drives organizations to embark on digital transformation (Haslam et al., 2021; Sebastian et al., 2017; Wessel et al., 2021). This literature emphasizes how top management strategizes digital transformation (Bharadwaj et al., 2013; Hess et al., 2016; Singh & Hess, 2017; Weill & Woerner, 2013) by addressing complexities and uncertainties through careful planning at the different stages of transformation (Valdez-de-Leon, 2016). From this perspective, variation in reactions to digital transformation is reflected in an organization’s strategic choices (Bharadwaj et al., 2013) and in how it chooses to align its digital and business strategies to facilitate change (Chan & Reich, 2007; Li et al., 2016). Overall, the strategy perspective focuses on organizations’ intentional reactions to digital transformations, with little emphasis on the consequential changes resulting from implementation dynamics.

The second perspective moves from a strategic to a process level, with a focus on how organizations react to digital technology by (re)structuring their operations as part of the digital transformation initiative. Some studies emphasize the importance of developing dynamic capabilities (Teece et al., 1997) to be able to sense, seize, transform, and react to pressures from digital transformation initiatives (Karimi & Walter, 2015; Orlandi, 2016; Warner & Wäger, 2019). Other studies stress the need to cultivate an experimental mindset across the organization to facilitate change (Kane, 2019), including how managers make use of tailored change-management procedures to help overcome inertia and cope with emergent tensions, workarounds, and paradoxes in digital transformation (Alter, 2014; Currie & Guah, 2007; Smith & Beretta, 2020; Svahn et al., 2017; Tallon et al., 2019). As digital transformation imposes (un)intended changes on organizational work processes, the transformation agenda risks being derailed if such changes are not addressed (Gosain, 2004; Wessel et al., 2021). From this perspective, variation in reactions mainly concerns how stakeholder groups, due to differences in mindsets and identities, perceive digital transformation initiatives in different ways. For example, research has shown that different user groups perceive the same digital technology differently depending on their technological frame of reference (Young et al., 2016). Similarly, digital transformation processes may vary in terms of the impositions they create (Vial, 2019), as well as the reconciliation actions that resolve such impositions (Strong & Volkoff, 2010).

The third perspective emphasizes the effect that organizational reactions to digital transformations have on organizational performance. Several studies have highlighted positive outcomes from digital transformations in the form of business improvement, competitive advantages, and performance gains (Fitzgerald et al., 2014; Vial, 2019; Wessel et al., 2021). Since digital transformations often entail a redefinition of the value proposition, the outcome may be a new organizational identity, as reflected in a case study of a manufacturing company that changed its public perception from that of a hardware company to that of a digital service provider (Baiyere et al., 2017; Wessel et al., 2021). Other studies have focused on negative outcomes, such as the surveillance of employees (Kensbock & Stöckmann, 2020) and the substitution of labor (Dengler & Matthes, 2018). In addition, studies have highlighted that digital transformation initiatives change none or few of the practices associated with the initiative (Mignerat & Rivard, 2015; Noir & Walsham, 2007), as they are exclusively adopted in a ceremonial way (Meyer & Rowan, 1977). Concerning variations, several contextual factors, such as organizational type and inertia, come to bear on the effect of digital transformation initiatives (Vial, 2019).

**Table 1. Research Perspectives on Organizational Reactions to Digital Transformation**

	<b>Strategy</b>	<b>Process</b>	<b>Impact</b>
<b>Focus area</b>	How organizations choose directions in digital transformation, stressing the role of top managers	How organizations develop capabilities and mindsets and handle inertia in digital transformation	How digital transformation can have positive and negative effects for organizations
<b>Theoretical perspective</b>	Digital business strategy Maturity model Alignment	Dynamic capability Digital mindset Change management	Performance Efficiency Surveillance Decoupling
<b>Variation in reaction</b>	Differences in strategic choices	Differences in stakeholder group perceptions	Differences in effects due to contextual factors
<b>Key sources</b>	Bharadwaj et al., 2013; Valdez-de-Leon, 2016	Kane, 2019; Warner & Wäger, 2019	Vial, 2019; Wessel et al., 2021

Table 1 shows that the expanding literature on digital transformation has contributed valuable insights into how organizations react to digital transformation initiatives through strategic choices and process activities, with different effects on organizational performance. As such, existing research acknowledges variations in organizational reactions, as digital technologies interact with organizational antecedents to produce different outcomes in terms of efficiency and performance. Hanelt et al. (2020) acknowledge these insights but call for future studies that investigate contradictions and variations in digital transformation. Thus, although the reviewed literature provides general insights into variations in organizational reactions to digital transformation and recognizes the emergent nature of the digital transformation process (Baiyere et al., 2017; Smith & Beretta, 2020), the question of how the same digital transformation initiative within an organizational field can lead to different reactions across organizations and over time is relegated to the background. This is regrettable, as insights into such variations can provide scholars and managers with important knowledge about option repertoires and constraints in handling digital transformation ideas that travel into organizations. In the following section, we introduce the virus perspective as an appealing theoretical perspective from which to begin understanding different organizational reactions to similar digital transformation initiatives.

### 3 A Virus Perspective on Digital Transformation

The idea of using a virus perspective is not new when the aim is to understand organizational reactions to change initiatives. Scholars have used it to understand

the adoption of total quality management (Pastor et al., 1998) and to study the different effects of knowledge production (Kjær & Frankel, 2003). As noted by Madsen and Slåtten (2015), however, these early contributions are fragmented and not as comprehensively elaborated as they are in the work by Røvik (2011), who provides the theoretical starting point for our investigation. Røvik's virus theory owes much to the insights and intellectual legacy from the literature on translation within Scandinavian institutionalism that stresses how traveling ideas follow various paths and change as they turn into enacted practices in organizational settings (Czarniawska & Joerges, 1996; Wæraas & Nielsen, 2016). Still, the virus perspective is distinctive, as it provides a new vocabulary for understanding key differences in organizational reactions to similar transformation initiatives.

Based on six virus reaction types—infection, immunity, replication, incubation, mutation, and dormancy—Røvik (2011) provides a vocabulary to help understand variation in organizations' adoption and rejection reactions, including what happens to ideas after their adoption and the extent to which such ideas manifest and have long-lasting effects on organizations. With virus theory, Røvik (2011) seeks to push beyond the image of organizations as passive recipients of popular ideas to consider them as active players in filtering and tailoring the discourses and ideas traveling in their environments. In doing so, "a more complex and sophisticated" understanding of organizations' reactions is possible (Røvik, 2011, p. 631). Next, we outline the types of organizational reactions to digital transformation based on virus theory (Table 2).

**Table 2. Organizational Reactions to Digital Transformation**

Reaction type	Definition
<b>Infection</b>	Organizations engage in digital transformation and adopt novel digital technologies.
<b>Immunity</b>	Organizations resist digital transformation at various stages, which may lead to nonadoption (the decision not to adopt), isolation (in which the technology is adopted but not implemented) or rejection (the decision to stop the digital transformation initiative).
<b>Replication</b>	Organizations anchor digital transformation initiatives by integrating digital technology into existing structures, activities, and routines, thereby reproducing certain intended effects.
<b>Incubation</b>	Organizations engage in digital transformation initiatives that materialize through a gradual, slow-phased change process.
<b>Mutation</b>	Organizations alter digital transformation initiatives in sometimes unpredictable ways as new ideas are mixed with organization-specific values and norms.
<b>Dormancy</b>	Organizations inactivate the digital transformation initiative with decreased or discontinued organizational activities surrounding it. An adopted but dormant initiative may be reactivated at a later stage.

*Note:* Adapted from Røvik (2011).

The notion of *infection* is inherent to the virus perspective, referring to the fact that viruses spread. The host—in our case, three home care organizations—is perceived not as a passive victim but as actively absorbing the virus (Røvik, 2011, p. 636). Some viruses—in our case, digital transformation initiatives—infect only a few organizations, while others spread across an entire organizational field (Nielsen et al., 2022) and still others become global pandemics (Røvik, 2011). Such variation is, in large part, determined by the interplay between the virus and the host organization.

*Immunity* refers to resistance mechanisms and may be at play in various stages of a digital transformation, leading to nonadoption, adoption but not implementation (isolation), or rejection by the organization and termination of the digital transformation initiative. Røvik (2011) distinguishes between primary and secondary outer defenses to indicate that certain organizational resistance mechanisms may lead to nonadoption (primary) or may cause the implementation process to be isolated or outright rejected at an early stage (secondary): for instance, due to unsatisfactory results or incompatibility with existing work practices.

*Replication* indicates that the virus may start reproducing itself in large numbers. This reflects how a digital transformation initiative expands within the organization akin to how a virus spreads in an organism. As such, digital transformation initiatives may lead to entrenchment, in which the organization puts the initiative into practice by anchoring it in organizational structures, activities, and routines, with certain intended effects “being reproduced” (Røvik,

2011, p. 640). Regulation, education, and training may support the entrenchment and assist in the pursuit of certain effects (Røvik, 2011).

Viruses may require a period of *incubation*: i.e., the time between when the host is exposed to the virus and symptoms start to appear. In the context of digital transformation, this refers to “the gradual and often slow-phased transformation” into practice (Røvik, 2011, p. 641). Here, incubation relates to the intensity by which an organization allows the digital transformation initiative to be promoted, as well as how long the implementation efforts are sustained.

A virus can *mutate*, or miscopy itself, and take the form of a new virus. Organizations are likely to alter the digital transformation initiative during its implementation by renaming, neglecting, subtracting, or adding certain elements to make the initiative fit shifting organizational strategies and values. Mutations are context specific and therefore highly uncontrollable and unpredictable in nature.

Viruses may become *dormant* when they no longer cause symptoms. They are still present in the organism as an inactivated and marginalized virus. It is often difficult to eliminate a virus once it has entered the system, and it may stay inactively present and reactivate at a later point. In the early phases of adoption and implementation, organizations typically work intensively with the digital transformation initiative. Over time, less activity and attention may follow, where the initiative may stay inactive yet potentially reactivate at a later stage.

Although virus theory is promising, Røvik (2011) does not offer a longitudinal empirical investigation of multiple organizational reactions to the same initiative

over time, nor does he study digital transformation. As such, while Røvik (2011) mainly concentrates on contrasting his theory with management fashion (Abrahamson, 1996) and the diffusion of innovation (Rogers, 2003), we go a step further by stressing the relevance to the digital transformation literature. Consequently, rather than simply applying virus theory to the specific context of digital transformation, we adapt and develop it further to understand variations in how adopting organizations within an organizational field react differently to the same digital transformation initiative over time.

## 4 Research Methods

### 4.1 Case Study Design

We adopted a longitudinal, embedded, multicase study design (Yin, 2012) in the context of the Danish home care field to examine organizational reactions to digital transformation over time. Following Wooten and Hoffman (2017), we understand an organizational field as constituted by heterogeneous actors—such as government agencies, IT suppliers, consulting firms, interest groups, and adopting organizations—that “involve themselves with one another in an effort to develop collective understandings regarding matters that are consequential for organizational and field-level activities” (p. 64). Danish home care embodies a well-established organizational field (Nielsen et al., 2014) in which extensive publicly financed services for elderly and disabled people in need of help are provided by home care organizations in Denmark’s 98 municipalities (local governments). Although municipalities in Denmark are obliged to give clients the choice of private home care provider (Genet et al., 2011), services are predominantly delivered by municipal home care organizations. Services include assistance with personal care and basic housekeeping delivered by caregivers in clients’ homes. These home care organizations are rooted in a broader institutional environment of government agencies, interest groups, IT suppliers, and others that impose a coercive, normative, or mimetic pressure (DiMaggio & Powell, 1983) on their adoption of circulating ideas about digital transformation across the home care field (Nielsen et al., 2022).

Over the past decades, home care in Denmark has changed substantially, not least through the increased digitalization of its work practices. In this study, we zoom in on a major digital transformation initiative in which the use of mobile technology in daily care work has replaced the traditional use of “pen and paper.” Mobile technology offers caregivers remote access to comprehensive client information stored in electronic patient record (EPR) systems and enables the registration of services provided at the point of care, wireless updating of records and work schedules, and telephone calls as well as text messages.

Our study covers the 18-year period from 2002, when the first Danish municipality began implementing mobile technology in home care, to 2019, when more than 40,000 caregivers used mobile technologies, such as personal digital assistants (PDAs), smartphones, and tablets across all 98 Danish municipalities.

The idea of using mobile technology in Danish home care gained traction around the turn of the millennium, as IT suppliers and government agencies suggested that this technology could enable an “important modernization effort” (D3). Although early mobile technology initiatives experienced technical difficulties, growing support for the digitization of home care work continued through the 2000s, with IT suppliers, government agencies, interest organizations, and consultancies endorsing mobile technology as a sign of progress in home care (D4, D5). The adoption rate accelerated in 2006, when the Danish government provided €45 million in support for the implementation of mobile technology in home care, with more than 80% of the municipalities receiving government funding (D6). By 2008, approximately 90% of municipalities had adopted mobile technology in home care (D7). In the wake of its swift diffusion, however, mobile technology work arrangements increasingly became a topic of controversy in the home care field, described as an unnecessary control regime (D8) with negative consequences for both caregivers and clients (D9). Some municipalities decided to close their PDA initiatives (D10). Despite these setbacks, IT suppliers continued to develop more advanced solutions in which tablets and smartphones rather than PDAs were adopted. Such solutions were needed to meet the governmental demand for standardized documentation and data-driven decision-making across the home care field mandated in a third generation of the “Shared Language” reform (D11). By 2019, when our data collection ended, mobile technology was used in home care practices in all Danish municipalities.

Adopting the most-similar case study method (Gerring & Cojocaru, 2016), our longitudinal, multicase study design provided the opportunity to analyze different organizational reactions over time and was anchored in the virus perspective vocabulary. We relied on purposeful sampling (Patton, 1990) to select information-rich cases for our study. One author followed the ongoing digital transformation efforts in Danish home care for almost two decades, which provided the background for selectively focusing on how three home care organizations—here called Alpha, Beta, and Gamma—reacted differently over time to the same mobile technology initiative. This sampling technique yielded in-depth insights rather than empirical generalizations (Patton, 1990). Table 3 provides background information about the three selected case organizations.

**Table 3. Case Organization Characteristics (2019 Numbers)**

Characteristics	Alpha	Beta	Gamma
Time of mobile technology adoption	2002	2007	2005
Number of caregivers	3,000	560	490
Number of home care clients	19,000	2,900	2,200
Selected mobile technology	PDA's in early phases, smartphones in later phases	PDA's in early phases, laptops in later phases	PDA's in early phases, smartphones in later phases

While Beta and Gamma represent average-sized municipalities, Alpha is one of the largest municipalities in Denmark, with a caregiving organization serving 19,000 clients. To ensure consistency among the cases, we focused on a smaller division of Alpha that serves 3,000 clients distributed across three home care units. For our study, we considered each organization, which is part of a broader organizational field, as the unit of analysis. Within each organization, we focused on the work performed by managers (key decision-makers) and caregivers (users of the PDA technology) as they reacted to the digital transformation initiative.

## 4.2 Data Sources

As recommended by Yin (2012), we relied on different sources of empirical evidence, including 62 semi-structured interviews and rich documentary material (see Table 4 and Appendix). We collected data in two major rounds—from 2007 to 2009 and again in 2019—to analyze the mobile technology initiative as home care organizations turned ideas and strategies into day-to-day operations over time. Between these two rounds of data collection, we had several informal conversations with home care managers and IT staff and collected relevant documents in the three case organizations in order to follow the mobile technology initiative. We ensured that the data from the three case settings covered similar topics to support cross-case comparisons (Miles et al., 2014).

The first round of data collection covered the early phases of the mobile technology initiative. In this period, we conducted 32 semi-structured interviews (Brinkman & Kvale, 2014) across the three organizations with managers (home care managers, project managers, IT managers) and caregivers who adopted mobile technology in their daily work practices. The interview guide included questions that allowed the interviewees to express how they experienced the early phases of the mobile technology initiative (including the formal decision to adopt), how they experienced the implementation process, whether they encountered resistance to change, and the extent to which they used mobile technology daily or did workarounds. Hence, we did not ask our interviewees

direct questions about the specific virus reaction types, as this topic would be confusing to them. Rather, we ensured that we obtained important insights into how the three organizations reacted to the mobile technology initiative. The average interview length was one hour, and each interview was recorded and transcribed verbatim. We conducted and transcribed interviews in Danish and translated selected quotations into English. We analyzed the available documents from each organization, including project descriptions, project plans, business cases, and newsletters, to supplement the findings from the interviews.

The purpose of the second round of data collection in the three organizations was to understand the developments during the preceding 10 years that had led to the situation in 2019. As in the first round, we used a semi-structured guide to interview 30 managers and caregivers across the three settings. We interviewed caregivers with more than 10 years of work experience to ensure sufficient knowledge of the long-term influence of mobile technologies. Questions covered the development and changes in mobile technology strategies and use over time, such as “What happened to the mobile technology initiative after initial implementation?” “How did the initiative change over time, and with what key decisions and events?” and “Did you experience resistance to mobile technology usage and, if yes, did this resistance change over time?” As in the first round, we recorded and subsequently transcribed interviews and included documents to guide our understanding of the long-term transformation of the three organizations.

## 4.3 Data Analysis

We conducted thematic analysis (Braun & Clarke, 2006) to understand in detail how the three home care organizations reacted to the digital transformation initiative. First, we constructed a case story and timeline for each organization based on our empirical data (Figures 1, 2, and 3). Then, inspired by conceptualized composition (Berends & Deken, 2021), we analyzed and organized the empirical data by drawing upon the literature on the six virus-inspired reaction types (Table 2).



**Table 4. Data Sources Overview**

<b>Data Collection</b>	<b>Alpha</b>	<b>Beta</b>	<b>Gamma</b>
First round (2007-2009)	<b>Interviews</b> Managers: 4 Caregivers: 6	<b>Interviews</b> Managers: 5 Caregivers: 8	<b>Interviews</b> Managers: 4 Caregivers: 5
	<b>Documents</b> PDA project description Evaluation report	<b>Documents</b> PDA project description Newsletter	<b>Documents</b> PDA project description Project plan
Second round (2019)	<b>Interviews</b> Managers: 6 Caregivers: 5	<b>Interviews</b> Managers: 4 Caregivers: 5	<b>Interviews</b> Managers: 3 Caregivers: 7
	<b>Documents</b> Trust codex Implementation plan for smartphones	<b>Documents</b> Benefit realization plan Flyer on laptop use	<b>Documents</b> Meeting minutes

These theoretical concepts served as sensitizing devices (Patton, 1990) to reveal the unique characteristics of each case and to gain a rich understanding of variations in organizational reactions to the digital transformation initiative (Eisenhardt, 1989). Through this process, we established a strong link between the virus reaction types and our data by coding for distinct indications of the reaction types at play in each case organization. For instance, a mutation was identified at Alpha when the organization replaced a mobile technology control-based regime with a trust-based regime. Similarly, immunity was identified at Beta when the organization decided to discontinue the mobile technology initiative.

During coding, we began to see how each organization's reaction changed over time, showing different reaction-type dynamics. For example, at Beta, our coding showed how infection was followed by immunity and then dormancy, as the organization first adopted, then abandoned and later revitalized, the mobile- technology initiative. As such, through the rich data set, we were able to demonstrate the empirical grounding of the virus-inspired reaction types and their temporal dynamics to allow for an in-depth unfolding of the different reactions to digital transformation over time within an organizational field.

## 5 Findings

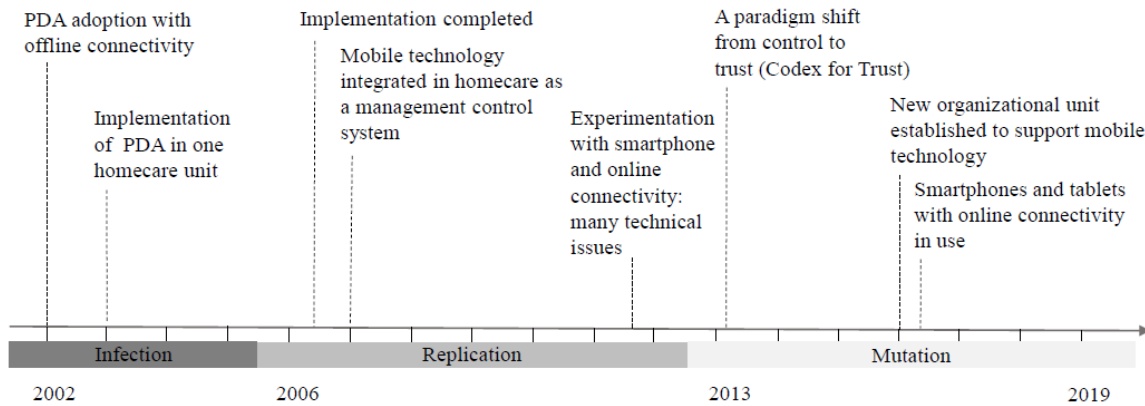
In this section, we provide a detailed and longitudinal empirical account of how three organizations within an organizational field reacted differently to the same digital transformation initiative. We do so by unfolding the idiosyncrasies of how Alpha, Beta, and Gamma engaged the idea of using mobile technology to reconfigure home care work practices.

### 5.1 Alpha's Reaction: Replication and Mutation

Alpha was at the forefront of the adoption of mobile technology in home care. Following an emergent trend in mobile health and a desire to be “a digital frontrunner” (manager), Alpha embarked on the PDA journey in 2002. The selected technical solution required that caregivers download and upload client data to PDAs through docking stations or Bluetooth once back in the office. Although this technical solution was perceived as advanced at the time, its lack of a telephone feature and “on the go” connectivity for caregivers later became an issue of deliberation and disagreement. Figure 1 shows the main events of the mobile technology initiative at Alpha.

#### 5.1.1 Replication of Mobile Technology as a Management Tool

Alpha adopted PDAs with the overall aim of improving time management and documentation in home care (D12). As one manager explained, “from day one, our main motivation has been to become better at managing and documenting work practices in home care.” Through a five-year implementation process, this approach expanded within the organization, as caregivers predominantly used PDAs for the time registration of home care visits, to access client information stored in the electronic patient record systems, and to look up their daily work plan “on the go.” Although the management team carefully prepared the implementation through business cases, pilots, collaboration with IT suppliers, and comprehensive educational support, the assimilation of PDAs into practice was not straightforward.



**Figure 1. Timeline of Alpha's Reactions to the Mobile Technology Initiative**

On several occasions, budgets were exceeded (D13), and the missing telephone feature of the PDA led to frustration among caregivers. As a result, some caregivers used the PDAs differently than expected. One caregiver noted: "I still use paper, and then I register the time spent later in the system by using a desktop computer." Another added: "It is difficult to write on the PDA. It is much easier to register the notes on paper and then hand over the paper form to the manager of our unit."

Despite such examples of workarounds, the strategic aim of improving time management and documentation worked as a dominating principle for the mobile technology initiative at Alpha. Just like a virus that starts to reproduce itself in an organism (Røvik, 2011), the new action possibilities afforded by mobile technology began to be integrated into the daily work practices and routines of caregivers. As such, the mobile technology initiative replicated with the strategic aim of increased documentation and control of home care work. One manager stated:

*We have achieved our goal. We have an overview of how many home care visits we have each week. We know how many caregivers enter in client homes, and we are updated on the cost of provided services. We could not answer these important questions three years ago (D14).*

While management's impression of the introduction of mobile technology was overall positive, perceptions among caregivers were mixed. Some found that the use of mobile technology improved their work and that the technology made their work appear "more advanced" in the eyes of their clients: "I often use the mobile technology when I am with the clients. They think it is a cool technology" (caregiver). At the same time, caregivers were skeptical about how managers used the technology for monitoring and control purposes.

One caregiver explained: "It [the PDA] was a device of control. It made us all defensive. I remember the words 'tyranny of time.' Everyone talked about it. It became a daily saying around here."

The technical setup with offline connectivity was also contested by caregivers. One caregiver explained that she: "wanted a more up-to-date solution with a built-in phone and where we do not have to go back to the office to update the system." The IT supplier had developed an online connectivity solution, but an assessment of a pilot initiative in 2007 concluded that the system had too many technical problems to be implemented (D15). The organization, therefore, decided to stick to the established solution with PDAs, offline connectivity, and no phone features.

### 5.1.2 Mutation from a Control-Based to a Trust-Based Regime

While a control-based mobile technology regime was established at Alpha in the early stages, the managerial intentions behind the use of the technology later morphed it into a more trust-based one. In 2013, a strategic change took place when politicians and top managers at Alpha decided to reformulate the management approach through a *codex for trust* (D16), moving the focus away from control and unnecessary documentation to more employee autonomy and trust (D17). Aligned with this strategic change, Alpha decided to abandon the task of using mobile technology for the time registration of each home care visit to escape "meaningless registration" (D17). Specifically, the use of PDAs to document home care tasks, previously specified down to two-minute intervals, was abolished and replaced by so-called *time blocks*, where caregivers were given professional leeway to solve tasks more flexibly [D18]. During interviews, caregivers reflected on the initial control-based regime and the current developments:

*Back then, the keyword was time control. We never talk about that today. I never hear that. Before we were required to note down the exact time for when we arrived at and left a client's home. The control is gone, and when we feel trusted, we become open to new thoughts about technology.*

These experiences were echoed among the interviewee's colleagues at Alpha, demonstrating how caregivers' perceptions of mobile technology changed with the reformulation of the management approach. Moving away from time registration of each home care visit, which was unpopular from a caregiver perspective, reflected a major change. Besides the reformulation of the management approach, managers also changed their priorities regarding mobile-technology investments and launched a new unit in 2016—called “Technology in Home care”—to facilitate the ongoing ambition of creating value from mobile technology investments. One home care manager described the change as follows:

*I think the municipality was known for investing in the cheapest technology possible, and therefore we constantly needed to deal with issues associated with poor technology. Now, our top management has become more reasonable and has purchased better systems.*

In 2016, Alpha's management decided to invest in a system with online connectivity that replaced PDAs with smartphones and tablets. This made it possible for caregivers to access client records in real time and more smoothly contact external stakeholders (D19). While some caregivers initially reacted negatively to yet another change, the new technology created opportunities to make work easier and more meaningful. Enthusiastic about this change in technology, one caregiver explained: “It is brilliant. You can read everything in there”; another caregiver laughingly added: “I could not do my work without it. That would be insane.” Reaching similar conclusions, a manager stated: “Today, we cannot separate technology from the actual work. Mobile technology is an integrated part of home care work. It is a major win.” Although the mutation from a control-based regime of mobile technology use to a more trust-based regime revealed a positive development in attitude among caregivers, some expressed that the control-based regime had not been abandoned completely. Some caregivers “continued to use mobile technology for time registration, even though this requirement no longer existed” (D18, p. 178). One caregiver noted:

*I love that we do not document unnecessary information. Still, I would never question the need for documentation. I am employed as a caregiver, and when my manager tells me I shall document and log activities, I do that.*

Overall, the managerial shift (from control-based to trust-based), including changes toward more contemporary technology solutions in software (from offline to online connectivity) and hardware (from PDAs to smartphones) reveals how the organizational reaction to the mobile-technology initiative at Alpha mutated (Røvik, 2011) during the digital transformation process. The mutation implied that the control-based regime was deemphasized to make room for a new dominating paradigm centered on trust, yet the control-based strategy still echoed in the organization, with latent tensions between the old and new management approaches.

## 5.2 Beta's Reaction: Immunity and Dormancy

In the mid-2000, Beta, like other Danish municipalities, was under increased pressure to adopt mobile technology in home care. In particular, the government sponsorship earmarked for the implementation of mobile technology (D6) paved the way for the adoption of PDA technology at Beta in 2007, when the organization received half a million Euros (4 million DKK) to purchase software, hardware, and project-management support. Figure 2 shows the main events of the mobile technology initiative at Beta.

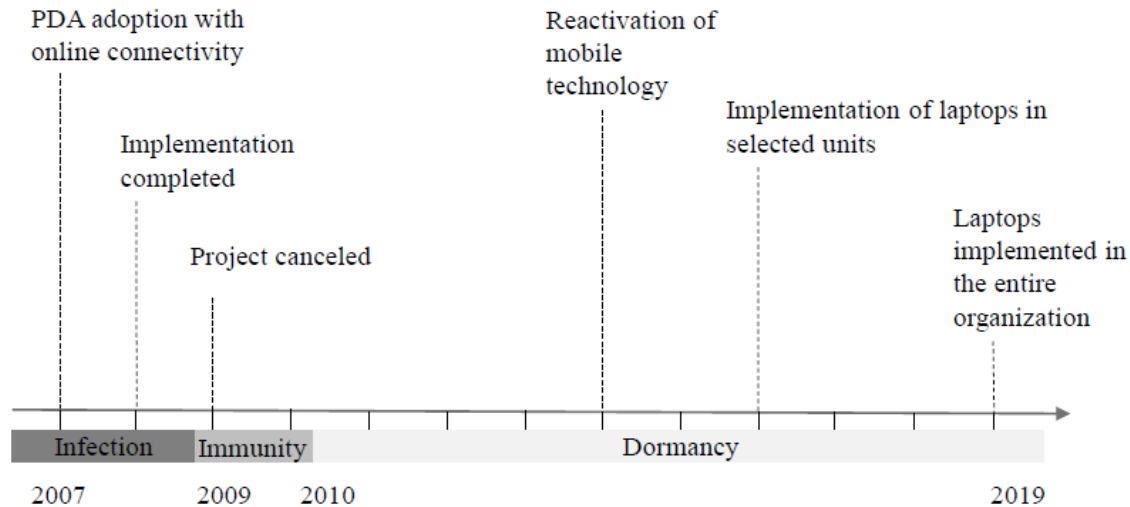
### 5.2.1 Immunity against Mobile Technology

Government sponsorship had a decisive effect on Beta's decision to adopt mobile technology, as the seed money constituted an opportunity to invest in PDA technology (D20). At an early stage, the mobile technology initiative seemed promising, with 250 PDA devices in daily use by 2008 (D21). The commitment to the PDA initiative, however, appeared low among key stakeholders. As noted by the project manager, the initiative lacked support from top managers:

*The top management decided it was a “nice to have” rather than a “need to have” project. Therefore, it became voluntary for each home care unit if they wanted to participate or not. I only had the mandate to ask: “Do you feel like using this new technology?” We really lacked leadership.*

Furthermore, a manager ironically recalled the motivation for adopting PDAs:

*There was no written business case, but we got 4 million DKK from the Danish government. Well, nobody had asked us why we really wanted these PDAs, and nobody inquired what the purpose was, besides using 4 million DKK. The aim was to spend 4 million DKK, and we definitely lived up to this aim.*



**Figure 2. Timeline of Beta's Reactions to the Mobile Technology Initiative**

Still, in this early stage, the technology did affect work practices in the organization, as caregivers used PDAs frequently, although they had diverse perceptions of PDA use (D22). On the one hand, they perceived the PDA as a convenient way to access client information “on the go.” On the other hand, they were reluctant to perform detailed time registration. At the same time, caregivers experienced poor online connectivity, which characterized parts of the rural municipalities at that time. An evaluation report in 2009 indicated mixed results from PDA use but provided no clear conclusion as to whether the organization should continue or stop using PDAs (D22). This report, however, legitimized the decision to end the PDA initiative, and the management board recommended in 2009 that politicians cancel the PDA initiative after two years of use.

### 5.2.2 Dormancy and Reactivation of Mobile Technology Use

When the PDA initiative was canceled in 2009, a long dormant period followed, with limited or no attention paid to mobile technology advancement. Work routines went back to their traditional form, without the use of mobile technologies in caregiving work. From a virus perspective, the mobile technology made no mark on the organization in these years. Still, as an organism tends to “remember” a virus, so did Beta in the years after cancellation. Managers and caregivers describe the period as a quiet time filled with both relief and regret: relief because the unsuccessful PDA initiative was canceled but regret due to its unexpected failure. One manager described the government money received for the PDA initiative as “money from hell”: money that was supposed to create cutting-edge

development, but which ended up causing failure and frustration among both caregivers and managers. The early negative experiences with the PDAs created a reluctance to use them and led employees to distance themselves from technology several years later. The home care manager looked back at the period, sighing deeply as she explained:

*The PDA project really made its marks. From my point of view, it made us afraid of technology. Every time we thought of introducing a new technology, we all looked back at the PDA initiative: the terrible monster that took over and that required huge investment but ended up in the dumpster.*

In 2014, a five-year dormant period ended with the reactivation of the idea of using mobile technology. Triggered by a renewed interest in digital transformation, managers at Beta described the need to rethink work processes due to financial constraints, the increasing demand among caregivers for up-to-date technology, and the improved network coverage (4G). As in 2007, the implementation evolved around the idea of working smarter with technology, but this time with the new slogan of “mobility in home care.” In this initiative, PDA devices were replaced with larger laptops (D23).

Although managers perceived laptops as an “ancient technology,” a failed attempt to implement iPads (not compatible with the chosen EPR system at Beta) was decisive in their turning to a well-known technology. During reactivation of the mobile technology initiative, caregivers were involved in the process. As the project manager explained:

*We selected a group of caregivers to provide insight into how we could reintroduce mobile technology. They came with so many ideas and thoughts we had to take into consideration. We evaluated a pilot project with laptops together with the involved caregivers and made the decision to continue. Then escalation slowly began.*

Unlike the 2007 situation, the idea of using laptops was based on a more bottom-up approach that involved collaboration between managers and caregivers through a series of workshops, pilot projects, and the designation of mobile technology ambassadors. Slowly but steadily, like a latent virus that reactivates (Røvik, 2011), the technology worked its way into the organization again, with more than 500 caregivers using laptops in 2016 (D24).

Although managers expected caregivers to use the laptops as an integrated part of their daily work, not all of them used the technology as intended. Generally, caregivers were critical of the laptop solution, and some experienced limited advancement between the new technology and the PDAs that were in use 10 years earlier. One caregiver explained: “There is no difference whatsoever. The only difference is that you were able to put the PDA into your pocket, which you can’t do with the laptop.” Another caregiver indicated fascination and a bit of envy with the technology in use in other municipalities:

*I was visiting a client in another municipality together with some caregivers from the other municipality. They brought their iPad. I was just looking at what they did. I was so impressed with what it could do. I wanted one of those as well. It was so smart.*

Although the laptop technology received criticism, both managers and employees described the second attempt at implementing mobile technology in home care very differently from the first attempt in 2007. The technology itself had developed, but so had the organization and caregivers’ mindsets: “they [caregivers] were longing for tools like this” (project manager) and “they would not let go of the technology. It’s their lifeline” (home care manager). Still, and perhaps even more importantly, the approach to introducing new technology had changed significantly compared to the PDA project. A manager explained:

*We changed our approach to technology. We will never buy 500 units of a device again and spread them across the organization without careful consideration. How we work with the technology today is a direct consequence of what happened back then.*

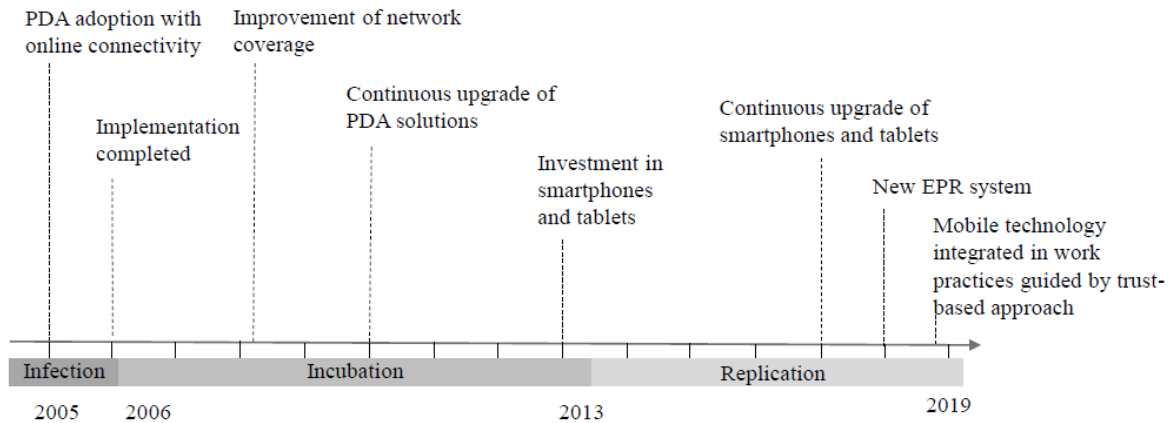
All the managers we interviewed emphasized this connection between today’s work with technology and the experiences obtained from the failed PDA initiative, underlining the dormancy aspect of the process, where abandoned technology reactivates at a later stage. Still, although the reactivation of the technology appeared successful compared to the original initiative, challenges still characterized the practical use of the laptops as indicated above. Some caregivers still requested tablets, did not follow new requirements for documentation in the client’s home, and continued to print their daily plans, which required management to work actively with these behavioral deviations (D25). Additionally, the negative experiences from the initial PDA initiative seemed to have made their mark on the organization as “horror stories” of how badly digital transformation initiatives might go.

### **5.3 Gamma’s Reaction: Incubation and Replication**

In light of the growing interest in mobile technology use in home care, Gamma made the decision in 2005 to adopt PDAs in all home care units. Gamma prioritized a mobile technology solution that was, at that time, “cutting edge PDA technology” (manager). Online connectivity afforded access to client data in real time and telephone features offered a means of improving communication among key home care stakeholders. Figure 3 shows the main events of the mobile technology initiative at Gamma.

#### **5.3.1 Incubation of a Trust-based Approach**

Gamma selected advanced PDA technology to meet management’s goal of creating a contemporary image through technology. As expressed by a manager: “To us, it was a matter of reputation. It was all about being in front in terms of advanced technology. In many municipalities, it was about efficiency, saving, and control. This was not the case here.” Thus, Gamma sought to implement PDA technology into its daily work practices by highlighting the technology as a tool to serve both internal and external communication and knowledge-sharing purposes rather than offering the opportunity for efficiency and control. Management decided that mobile technology should support a lenient registration practice, as they did not implement the practice of time registration of each home care visit: “We think it is very important to the work environment that employees feel trusted. Therefore, we have chosen a trust-based approach when it comes to time registration” (D26, p. 41). One caregiver shared this perspective: “Managers are able to monitor our work if they want to. Yet, our managers do not use it. At least I do not think so.”



**Figure 3. Timeline of Gamma's Reactions to the Mobile Technology Initiative**

Consequently, caregivers were obliged only to register their presence at a client's home but not in real time and only for the documentation of deviations. Hence, such an approach came to work as a blueprint for how Gamma integrated mobile technology into its existing structures and work practices. A home care manager explained in a 2019 follow-up interview:

*The technological solution with online connectivity we use provides the opportunity to monitor and register when our employees come and leave the client's home. However, we have never used this as an opportunity for control. Throughout the entire process, we focused on trust.*

Despite the managerial emphasis on trust and the need to create a good work environment, defense mechanisms among caregivers were at play, although they never gave rise to nonadoption nor caused the implementation process to stop. While the choice of PDA technology with online connectivity provided new opportunities to access work schedules and client information “on the go,” use text messages or phones for communication, and order medicine online, it also created frustration among caregivers, as they experienced technical problems that hindered the technology's daily usage. The work practices in place seemed to push back on the technology, as caregivers established workarounds by continuing to document their work and read notes from the desktop computer in the office instead of using PDAs. In this way, mobile technology did not replace paper-based work practices entirely. Instead, caregivers considered PDAs an add-on, which meant that the two work practices existed side by side. The managers initially accepted this workaround and allowed some caregivers to continue to get their work schedules in paper format while others used their PDAs. One home care manager explained in 2009: “The thing is that, while some of

the caregivers solely use the PDAs, a considerable number of employees still get their work schedule on print.”

To improve daily use of mobile technology, Gamma continuously upgraded its mobile technology initiative with new PDA devices, and by 2012 with smartphones and tablets. Furthermore, the organization strove to improve network coverage in rural areas. The IT manager reflected upon the many changes:

*It is so exciting, but also a slow process, where we have a wide range of technical and organizational challenges that we must deal with on an ongoing basis. It is as if the project continues to be a development project and that it will never get into a stable operating situation. We have solved many of the technical problems, and the mobile technology is being used more and more.*

Thus, over time and through a longer incubation period, mobile technology came to play a more critical role in home care work.

### 5.3.2 Replication through Long-Term Change

Guided by the overall trust-based vision for mobile technology use, a series of adaptations continued to characterize the mobile-technology initiative at Gamma. One caregiver's reflection in a 2019 interview expressed the incremental nature of the digital transformation initiative:

*It is difficult to say exactly when new technology advancement took place because it all came sneaking up on us. I barely remember the PDA and how it differed from the one I have now. Well, of*

*course, this one [pointing to the smartphone] can do more, but it's no revolution.*

The IT manager reached a similar conclusion: “We spend a lot of time updating, fine-tuning and maintaining the system. It is not that the changes are major.” As such, managers and caregivers experienced the mobile technology initiative as a gradual transformation process without critical groundbreaking changes, and, increasingly, signs of development from incubation to replication emerged. Fewer caregivers expressed the need to turn to the traditional pen and paperwork practices for documentation and communication as the mobile technology became more integrated into their work practices. As one caregiver expressed it in 2019: “We use mobile technology everywhere in our life, at work and at home for everything from communication to schooling through news, so I’m very used to working with it now.” Another caregiver emphasized how paper-based procedures had declined: “The only reason for printing the schedule today is during system breakdowns. Apart from those incidents, no one prints today.”

Thus, alongside the gradual transformation at Gamma, replication increasingly took place as the mobile technology initiative showed signs of long-lasting effects on home care work practices. Still, the core guiding principle behind the mobile technology initiative was based on trust and employee motivation.

Still, following governmental demand for standardized documentation rooted in the “Shared Language” reform (D11), the technology-in-use slowly changed into a system that facilitated the ability of caregivers to document together with clients in their homes. Consequently, the existing EPR system was replaced with another one to facilitate better documentation and reporting based on mobile technologies in the form of smartphones (D27). Although changes continuously took place, a manager at Gamma reflected upon these changes and the organizational reaction to them: “I don’t think it has been difficult for our employees to accept something new. It seems as if the need for changes has become a natural and expected process to everyone here.” Hardware and software continued to be updated, and caregivers who appreciated the trust-based approach received these updates positively. Still, some caregivers expressed hesitation about the new demand to document with the client; they experienced it as an interruption of their primary task. As one caregiver explained:

*I think half of us still document on paper and type in the information in the car or in the office. I feel documentation with the client becomes impersonal. I focus on the relationship to the client and technologies*

*like smartphones challenge that relationship. So, I document on paper when I am in the client’s home, although it is double work.*

Overall, the slow-paced development of mobile technology at Gamma ensured a constant alignment to the organizational values: For example, by downplaying the opportunity for control to emphasize the need for improved knowledge sharing embedded in an agenda of trust and employee motivation. Still, new implementation issues constantly emerged because of technology improvements and new requirements for documentation in home care practices.

## 6 Discussion

The current literature has examined how organizations react to digital transformation through strategic choices (Bharadwaj et al., 2013; Valdez-de-Leon, 2016) and process activities (Kane, 2019; Warner & Wäger, 2019), having different effects on organizational performance (Vial, 2019; Wessel et al., 2021). Our study goes a step further by unfolding how organizations within an organizational field react differently over time to the same digital transformation idea. Next, we discuss the theoretical and empirical insights that this perspective contributes to the expanding digital transformation literature.

### 6.1 Variations in Reactions to Digital Transformation

The virus-inspired analysis offers a comprehensive empirical account of how three organizations—Alpha, Beta, and Gamma—in the same field and adopting similar technology reacted quite differently to a nationwide digital transformation initiative on mobile technology use in Danish home care. Our study shows how the virus reaction types (Røvik, 2011)—infection, immunity, replication, incubation, mutation, and dormancy—were expressed across the case organizations at different points in time and with different strengths as the mobile technology “virus” spread throughout the home care field. Although the adoption of similar mobile technology resulted in surface-level isomorphism (DiMaggio & Powell, 1983), the reactions, in terms of strategic directions, process activities, and effects on work practices (Table 1), varied considerably across the three case organizations (Table 5).

Regarding the initial strategic directions, Alpha’s focus was on improving documentation and time management in the provision of its home care service, Beta wanted to take advantage of the available government sponsorship but its vision was unclear, and Gamma saw the digital transformation initiative as an opportunity to improve its reputation and knowledge sharing.

**Table 5. Summary of Variations in Reactions to Digital Transformation**

	<b>Alpha</b>	<b>Beta</b>	<b>Gamma</b>
Organizational reaction patterns	Infection, replication, and mutation as the organization initially implemented a control-based regime and later morphed it with a trust-based regime.	Infection, immunity, and dormancy as the organization abandoned and later revitalized the digital transformation initiative.	Infection, incubation, and replication as the organization slowly matured and adapted the digital transformation initiative.
Dominating strategic directions	Improve documentation and time management.	Take advantage of available government sponsorship with unclear strategic direction.	Improve reputation and knowledge sharing.
Process activities	Initiative replicated initial strategic direction of a control-based regime but later mutated in another direction.	Initiative created strong immune reactions that resulted in inactivation at first, followed by reactivation at a later stage.	Initiative went through a long incubation period, followed by gradual transformation.
Effects on work practices	New documentation practices with a tension between control-based and trust-based management approach.	New work practices around mobility in home care when the initiative was reborn after a long dormancy period.	New communication and knowledge sharing practices gradually became institutionalized over time.

Consequently, instead of being deliberately planned with a shared agenda across the organizational field, the digital transformation initiative was highly emergent, with each adopting organization establishing its own agenda and strategic direction (Mintzberg & Waters, 1985).

In terms of the process of digital transformation, we saw how the digital transformation initiative at Alpha first replicated initial strategic directions but later mutated, how the initiative first created strong immune reactions and was inactivated at Beta, only to be reactivated at a later stage, and how at Gamma it went through a long incubation period followed by gradual transformation. Hence, rather than following a stable path in which the adopting organizations reinforced their initial strategic directions, the mobile technology initiative *fluctuated* over time in rather unpredictable and transformative ways (Singh et al., 2015).

Finally, in terms of the effects of mobile technology use on performance, we saw how the initiative at Alpha transformed documentation practices, with a tension between the initial control-based management approach and a later trust-based one; how in Beta it made it possible to invest in mobile technology that eventually led to changes in home care practices; and how mobile technology at Gamma was used to implement new practices of communication and knowledge sharing that were maintained and gradually institutionalized over time. Hence, the reactions were not merely in terms of strategic directions and process activities, the different reactions across the adopting organizations had *consequential* impacts effects for the organization's operations, consistent with the

observation that even though transformation initiatives may lose momentum, they can be reborn and reenergized at a later stage through "windows of opportunity" (Tyre & Orlikowski, 1994).

As such, our longitudinal inquiry brings sensitivity not only to the different reaction types but also to how organizational reactions to digital transformation unfold and change over time. While the initial reaction in all three organizations was infection, Alpha subsequently reacted through replication followed by mutation, Beta through immunity followed by dormancy, and Gamma through incubation and replication. Based on these insights, our study provides two contributions to the expanding literature on digital transformation.

First, we show that the virus perspective can help scholars and managers identify and understand different reactions to digital transformation among organizations embedded in similar contexts. Such insights move beyond current knowledge about digital transformation strategies, processes, and effects within individual organizations toward an understanding of how adopting organizations within an organizational field react differently over time to the same digital transformation idea. As such, virus theory provides a valuable vocabulary with which to explore the dynamics of reaction variations to digital transformation within an organizational field.

Second, responding to recent scholarly calls for a more advanced understanding of the dynamic process of digital transformation at the organizational level (Wessel et al., 2021), the virus-inspired analysis



contributes to the literature with new insights into the emerging, fluctuating, and consequential nature of digital transformation. While Røvik (2011) discusses the relevance of virus theory in the context of management fashion (Abrahamson, 1996) and the diffusion of innovation (Rogers, 2003), our analysis is the first to demonstrate its value in the context of digital transformation.

The different reactions to the same digital transformation initiative, as observed in our cases, are consistent with Barley's (1986) findings, where identical technologies (CT scanners in radiology) "occasioned similar structuring processes in two radiology departments and yet led to divergent form of organizing" (p. 78), as "one department became far more decentralized" (p. 105). What differentiates our study from Barley's (1986) is the longitudinal nature of our analysis, covering an 18-year period compared with one year in Barley's study. As such, we offer a conceptualization of organizational reactions to how a digital transformation initiative unfolds and changes over time, as opposed to Barley's highly situated analysis of processes and interaction patterns between individual actors in an implementation of CT scanners based on structuring theory. Moreover, we move beyond Barley's focus to offer insights into the dynamics that unfolded within an organizational field, including influences from IT suppliers and government interventions.

In terms of practical implications, our study provides managers with a better understanding of option repertoires and constraints as digital transformation ideas travel into their organizations. While it may be tempting to follow the most recent digital technology trends or to mimic other organizations in the organizational field that are successful, our study shows that managers should be cautious in doing so, as the same digital transformation initiative may occasion different opportunities and challenges across organizational contexts. Furthermore, managers can use the virus perspective to better grasp how a specific digital transformation initiative may play out in their organizations over extended periods of time. By bringing attention to the emerging, fluctuating, and consequential nature of digital transformation, our study suggests that, in many instances, it takes a long time for a digital transformation initiative to mature and become part of organizational practices. As such, it should not come as a surprise to managers if a digital transformation initiative, or parts of it, become inactivated or dormant at one point, only to be reactivated at a later stage.

## **6.2 Limitations and Future Research**

While the virus perspective contributes explanatory power to digital transformation research, our empirical analysis also points to some conceptual ambiguities and underdeveloped themes. First, when presenting this research to fellow scholars and practitioners, we experienced their negative associations with virus theory. For example, one argument is that virus theory provides negative associations with "diseases" that infect organizations, thus "destroying" them. Although we agree that theorizing from the virus vocabulary includes interpretive flexibility, the "disease" and "destruction" aspects are not included in Røvik's own argumentation for virus theory, nor are they visible in the way they are applied in this paper.

Second, although we build our empirical analysis on a rich set of longitudinal data, further assessment of the virus perspective in digital transformation requires additional empirical investigation in other contexts and with other types of digital technology. While we were able to identify three different organizational "reaction patterns" to digital transformation over time, it is likely that other forms may develop in other settings. For instance, although it is argued that "no industry is immune" to digital transformation (Harvard Business Review [HBR], 2017), the literature offers examples of organizations that remain immune in the sense of not being capable of transforming themselves and risking extinction (Agarwal et al., 2011). In other digital transformation initiatives, organizations may become infected and subsequently experience a long incubation stage before the use of new digital technology materializes and becomes an ingrained part of organizational processes and procedures. Hence, we encourage studies that follow digital transformation initiatives over a longer period to further investigate how digital transformations unfold with shifting and sometimes surprising outcomes.

Third, we invite future studies to address the dormancy feature of digital transformation in more detail. Mechanisms at play leading to inactivation and reactivation, and the fact that digital transformation initiatives may reside for some periods in dormant states of varying lengths, are rarely touched upon in the literature. Periods of dormancy are in this way important for advancing our understanding of the dynamics of organizational reactions, the critical choices made after initial adoption, and the eventual effects of a given digital transformation initiative. We have begun this work, but more research is needed to fully understand how and why digital transformation initiatives may be abandoned and later reborn.

## **7 Concluding Remarks**

In 2017, a *Harvard Business Review* article reminded us that digital transformation is racing ahead and that no industry is immune (Harvard Business Review, 2017). Danish home care proved to be no exception when a nationwide digital transformation initiative spread like a virus among home care organizations across the 98 municipalities in Denmark. The use of mobile technology in home care work was perceived as nothing less than a “digital revolution.” Interestingly, while the three home care organizations

we studied—Alpha, Beta, and Gamma—were all “infected” by the same digital technology and transformation idea, their reactions in terms of strategic directions, process activities, and effects on work practices varied considerably. Hence, as a contribution to the expanding literature on digital transformation, our study provides theoretical knowledge and practical insights that underscore the emergent, fluctuating, and consequential ways in which adopting organizations react differently to the same digital transformation idea over time.

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