Conflicting Identities During Digital Transformation Efforts of an Incumbent Automotive Firm

Research Paper

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Abstract. Most manufacturing firms that undergo digital transformation fail to seize the expected benefits. A key reason is that those firms fail to extend their identity of operational excellence with a digital service provider identity, leading to tensions at the interface – the product. Although research has addressed individual aspects of organizational identity, how organizational identity evolves in incumbent firms remains to be understood. In a case study with a leading automotive manufacturer, we show how two conflicting identities lead to paradoxical tensions and how separating them through a spinoff shifts these tensions. This study provides initial results on conflicting organizational identities during digital transformation.

Keywords: Digital Transformation, Organizational Identity, Paradoxical Tensions

1 Introduction

Incumbent firms must implement digital technologies into their products and processes to meet customer expectations and keep pace with competitors (Tilson et al., 2010; Yoo et al., 2010). However, to seize digital technology for competitive advantage, firms must adapt their organizational identity (OI) as digital technologies intertwine with established routines, procedures, and beliefs of critical constituents (Tripsas, 2009; Wessel et al., 2021). Especially incumbent manufacturers face a unique challenge during digital transformation (DT) as they must integrate two identities (Svahn et al., 2017): First, the identity of operational excellence to create complex physical products of high quality and, second, the identity of being a service provider that can enhance this product through digital services.

However, integrating both identities of manufacturing excellence and digital service offerings is challenging and can lead to paradoxical tensions (Soh et al., 2019; Svahn et al., 2017; Wessel et al., 2021). Car manufacturers, for example, follow long product development cycles and freeze design before production (Svahn et al., 2017), leading to tensions with agile software development practices. This tension illustrates that hav-

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ing both OIs in parallel can lead to a state of bipolarity. To avoid DT-related OI tensions, firms established spinoffs that separate OIs into two organizations. Thus, the operational excellence manufacturer and the service provider do not have to respond directly to each other but can communicate through the interfaces of their respective firms (Santos & Eisenhardt, 2005).

Extant research has investigated two aspects of OI: OI formation—the development of a new organization, and OI change—the transition from one OI giving away to another OI. Scholars such as Gioia et al. (2013) have studied these aspects on a micro- and macro-level. However, DT differs from IT-enabled organizational transformation as it requires firms to develop a new OI (Wessel et al., 2021) by *keeping their old (i.e., product manufacturer) and infusing it with a new (i.e., service provider).* The different identities can lead to tensions between existing hierarchical structures and new structures required for DT (Dremel et al., 2017; Haskamp et al., 2022; Svahn et al., 2017). An identity shift can also lead to organizational resistance and inertia, ultimately failing DT initiatives (Haskamp et al., 2021; Tripsas, 2009; Vial, 2019).

While the literature on OI and DT is separated, little research has focused on the intersection between these concepts, as recent calls for future research illustrate (e.g., Gioia et al., 2013; Riasanow et al., 2019; Wessel et al., 2021). Theory about how OI evolves during DT and how OI can cause paradoxical tensions leading to inertia is sparse. Thus, there needs to be more conceptual clarity on how organizations manage conflicting OIs in the process of DT, e.g., the discrepancy between existing and emerging OI (Gurbaxani & Dunkle, 2019; Keller et al., 2022). Therefore, the research question of this paper is: *How does the OI evolve in incumbent firms during DT?*

To approach the research question, we followed an in-depth case study (Yin, 2018) by interviewing 45 employees concerned by DT of an incumbent automotive firm and its corporate spinoff, which was established during our data collection from 2019 – 2023. The automotive firm faces severe challenges on different organizational levels while undergoing DT efforts, thus, providing an appropriate case to examine how the DT and introduction of a digitized product (i.e., an autonomous driving car) led to a state of bipolarity reflected in the tensions of two conflicting OIs.

This study is the first effort to shed light on the difficulties incumbent manufacturing firms face when attempting to extend their operational excellence identity by being a service provider during DT. We identified that paradoxical tensions occur due to the conflicting OIs, thus providing scholars with a better understanding and practitioners with guidance. We derived different types of paradoxical tensions rooted in OI through multiple rounds of coding Field (Gioia et al., 2012) and employing OI as a theoretical lens. Moreover, we provide new insights into the DT phenomenon and paradoxical tensions. Last, our derived implications inform future research on this topic.

2 Theoretical Foundation

DT has sparked the interest of academics and practitioners over the last two decades (Kraus et al., 2021; Vial, 2019) by considering the data-driven impacts of technologies

for strategic change (Warner & Wäger, 2019). Despite being closely related to IT-enabled organizational transformation (ITOT), as both are technology-related phenomena, DT differs from ITOT: In ITOT, digital technology *supports* the value proposition and *reinforces the existing OI*, whereas in DT, digital technology *redefines* the value proposition and *lead to a new OI* (Wessel et al., 2021). Due to the digital technology-induced changes' scale, scope, and speed, DT can be viewed as an evolutionary extension of ITOT (Vial, 2019).

Further, DT puts forth digitized products that embed digital technologies in physical products and require extensive data collection while being designed, manufactured, and used (Porter & Heppelmann, 2014). Digitized products support value co-creation with customers and other stakeholders (e.g., through continuous feedback possibilities) and provide insights into data (e.g., data collection on usage) that can serve as input for new service offerings (Sandkuhl et al., 2019). The redefined value proposition triggers organizations to develop digital capabilities during DT. At the same time, incumbent manufacturers face challenges to software and digital service adaptation as this was previously outside their area of expertise.

The concept of OI originates from Albert and Whetten (1985) but remains relevant in light of recent developments demanding organizational change (Gioia et al., 2013). OI is characterized as central, distinctive, and enduring and reflects organizational members' perspective of *"who we are as an organization"* (Albert & Whetten, 1985; Gioia et al., 2013). Thus, OI is a *"self-reflective"* internal notion where multiple identities or interpretations may exist in different organizational units (Gioia et al., 2013). Additionally, OI is culturally profoundly rooted in the organization (Schultz, 1992), helping its members to give meaning to their collective history, practices, and experiences and creating awareness for outsiders (Ravasi & Schultz, 2006). Gioia et al. (2013) point out that organizational members might perceive their OI as stable even though it is changing: *"The labels are stable, but their meanings are malleable"* (p. 126).

Historically, it had been thought that organizations need a stable OI to function (Albert & Whetten, 1985). Later, identity instability was theorized to be beneficial in allowing organizations to adapt to changing environments (Gioia et al., 2000). Although having positive effects, identity changes often result in tensions between members with different views of the organization. In addition, the more deeply rooted the OI, the more resistance can be expected from organizational members (Gioia et al., 2000).

Organizations that undergo DT typically experience identity conflicts, *"a concept involving multiple organizational identities vying for preeminence or privilege"* (Corley & Gioia, 2004, p. 201). Previous research suggests that firms must relinquish the old identity to embrace the new one (Elsbach & Bhattacharya, 2001), which is impossible when still producing physical products that integrate digital services. To bypass these tensions, *"keeping the existing and emerging OI separate from one another"* (Keller et al., 2022, p. 43) through developing a spinoff might be an option. In this way, the operational excellence identity and the digital service identity can interact indirectly through the interfaces of their respective firms. However, whether an OI separation through a spinoff works or is just a problem shift remains to be understood. Further, research lacks how OI evolves in incumbent firms during DT and how those firms can

deal with conflicting identities keeping their old OI (i.e., operational excellence) and infusing it with a new (i.e., service provider).

3 Methodology

Our study is motivated by a theoretical and phenomenon-focused problematization (Monteiro et al., 2022) of evolving OI that sheds light on conflicting identities and paradoxical tensions during DT. Thus, we conducted a case study (Yin, 2018) in one of the world's leading premium automobile manufacturers (hereafter AutoCorp) with a long history and profound expertise in automotive manufacturing processes. Since 2010, AutoCorp adopted more and more digital technology to advance its product from electromechanical to autonomous vehicles. Therefore, AutoCorp first worked increasingly with software suppliers and then hired software engineers that have been spun off through the foundation of its corporate software firm (hereafter SoftwareCorp) in 2019. However, AutoCorp's DT efforts are not moving fast enough due to several sources of internal resistance, pointing to a fruitful phenomenon to study OI. Shaped by OI conflicts and internal tensions during DT, the case offers access to this significant phenomenon (Eisenhardt & Graebner, 2007).

3.1 Sampling

Between 2019 and 2023, we collected primary data through interviews and secondary data through on-site observations, meeting discussions, company presentations, archival data, and news articles at AutoCorp and SoftwareCorp. We conducted 45 interviews with employees that faced changes during the DT in different departments and hierarchical levels (Eisenhardt & Graebner, 2007). Additionally, our inclusion criteria were employees with points of contact to the vehicle and varying histories at the company. Some interviewees were employed by SoftwareCorp and previously worked at AutoCorp, which gave us a unique perspective. Once we got in touch with interviewees that met the sampling criteria, we arranged the time and venue of the interview.

Table 1. Interviewees

Number	Interviewees	Roles
12	Project Manager	UX/UI; strategy & innovation; standardization; innovation; digital assistant; HR transformation; autonomous driving; cross-sectional coordination; digitization of workflows
1	Technical Engineer	Processes
2	Scrum Master	Pre-development
4	Software Developer	Simulation; pre-development
5	Product Owner	Process management; processes & methods
2	Principal	Corporate strategy

6	Change Facilitation Manger	Change management; communication
2	Development Engineer	Autonomous driving
3	Strategic Coordinator	Autonomous driving; agile coach
8	Systems Engineer	Systems engineering; processes, methods

3.2 Data Collection

We performed data collection and analysis following a rigorous procedure. A semi-structured guideline (respectively for the interviews before and after the spinoff foundation) provided an overall outline and improved reliability (Yin, 2018). After five initial interviews, we adjusted the interview protocol to account for new insights. During the interviews, we asked interviewees to share their understanding of OI and their experiences with the DT's impact on different OI dimensions. Interviews typically had a duration of 45 minutes and were audio-recorded. We stopped when we reached saturation, i.e., the improvements brought by additional interviews were considered marginal (Strauss & Corbin, 1990). Following those established methods helped us to increase the equivalency, credibility, and dependability of the results, which can be considered alternative terms to reliability and validity proposed in quantitative studies (Sinkovics et al., 2008).

3.3 Data Analysis

After transcribing all audio files, we analyzed the data in MAXQDA by following the process of open, axial, and selective coding (Glaser et al., 1968). Throughout this data analysis process, we investigated the evolving OI to explain inertia in DT processes. We started with an inductive approach by openly coding 1st-order concepts (Gioia et al., 2012) that constitute concepts close to the interview data. Next, we applied a deductive approach by using the dimensions of OI as our theoretical lens since our objective was to identify the tensions of OI in the context of DT. Therefore, we operationalized OI based on established dimensions: key values, capabilities, practices, routines, structure, strategy, and culture (Gioia et al., 2013; Van Rekom & van Riel, 2000). Next, we conducted axial coding by seeking similarities and differences in the 1st-order concepts deriving a more manageable number of similar concepts labeled as 2nd-order themes (Gioia et al., 2012) describing the OI challenges and tensions during DT. Last, we employed selective coding to distill the 2nd-order themes into 2nd-order aggregate dimensions that describe reasons for inertia in DT during two phases (before and after the spinoff creation).

4 Results

The results are structured according to two temporal phases: Phase 1 describes the evolution of OI within AutoCorp when the firm initiated the integration of digital technology within its vehicles. Phase 2 encompasses the foundation of the spinoff,

which is responsible for AutoCorp's software development. We investigated OI tensions within AutoCorp, SoftCorp, and between the firms in this phase.

4.1 Phase 1: Initiation of the Digital Transformation Journey, including the Integration of Digital Technology into the Vehicle

Since 2010, AutoCorp has involved more and more digital technology in their vehicles, such as connectivity to music, Bluetooth interfaces, and an integrated navigation system with wireless internet access. To offer these digital functions and services, AutoCorp commissioned software development companies. However, integrating the delivered software packages as a black box proved difficult in the complex vehicle system, so software developers were hired in-house by AutoCorp. As explained in the following, this led to different tensions between the manufacturers and software engineers.

Tensions due to the history and established organizational structure. Traditionally, AutoCorp focuses on electromechanical vehicles instead of digitalization. For example, employees still refer to themselves as 'sheet metal benders' and, thus, *"never required a strong IT (mindset)"* (Software Developer 4). The function-oriented organizational structure of business units (management, technical development, finance, human resources, production, sales & marketing, and procurement & IT) and the mass production approach are still prominent. However, the embedded software connects physical components requiring new *organizational structures* and *practices.* Thus, functional silos must be broken up to allow cross-functional collaboration (Project Manager 2, Scrum Master 1, Principal 1). This starkly contrasts with AutoCorp's historical-grown identity following a strict hierarchical structure with clear responsibilities. Due to the clash of the conflicting mindsets, the new identity has grown in isolation within the firm leading to direct tensions between manufacturers and software engineers.

Tensions due to different practices. While the senior management endorsed software development within AutoCorp, the new departments' practices had to comply with the corporate *legacy practices*. That is long product development cycles and freezing design before production. As a result, software developers could not take full advantage of short, agile cycles. One reason is that most AutoCorp employees still embraced an engineering mindset that clashed with the digital world making it difficult for the incumbent car manufacturer to undergo DT (Agile Coach, IT Project Coordinator, PMT Manager 1, PMT Manager 2, Product Portfolio Manager, Quality Manager). Another challenge is the ambiguity between the values lived and communicated. AutoCorp's management encourages its workforce to engage in new complex technologies. However, its actions rarely reflect courageous behavior, e.g., risks are seldom taken to allocate a budget for future digitally savvy projects (e.g., Project Manager 6, Project Manager 7).

4.2 Phase 2: Expansion of Software Capabilities and Foundation of a Spinoff

AutoCorp continued to invest in integrating software features and developing automated driving functions to keep up with the competition and meet customer demands.

In doing so, AutoCorp experienced severe difficulties managing the digitized vehicle as an overall functioning system. Despite needing more digital competencies, the conflict between the 'old' product manufacturer and the 'new' service provider identity represented a barrier to the firm's DT. Hence, in 2010, the parent company of AutoCorp decided to establish the corporate spinoff SoftCorp supporting all brands under the parent company with software developed in-house and the establishment of a uniform software platform. As a reaction to the previous direct OI conflicts, the identity of being a service provider was spun off into the newly formed SoftCorp as a central software unit. This was reflected in the distinction between the product components (hardware and software) and the organizational activities (mechanical engineering and software development) (e.g., Project Manager 2, Project Manager 6, Product Manager 2). Thus, the conflicting OIs became increasingly isolated and separated.

Tensions due to history within AutoCorp. Within AutoCorp, tensions exist between the current state of pure manufacturing excellence and the target state of digital transformation. While some of the employees interviewed expressed the urgency of DT on an organizational and product level to ensure further competitiveness, the definition of 'who we are as an organization' is still rooted in motorsport events. The internal combustion engine is ingrained in employees' minds and their understanding of the company. It is an emotional aspect of a proud *history* and excitement (e.g., Technical Engineer 1, Project Manager 6, Project Manager 7). This bond is also evident in day-to-day business, as some interviewees indicated that each employee recognizes their contribution to DT in their everyday tasks (Technical Engineer 1, Project Manager 4). Thus, AutoCorp must align its identity rooted in the history of excellent electromechanical vehicles with DT. Among others, thoughts are, *"Are we a hardware manufacturer while somebody else develops software? Are we building a hardware-software construct within an intelligent accord or a vehicle in a hardware-software union?"* (Project Manager 2). These considerations and changes take time to be entirely accepted by employees at all levels, especially integrating the identity as a service provider into the existing identity as a manufacturing company (Project Manager 2, Project Manager 4, Principal 2).

Tensions due to AutoCorp's legacy within SoftCorp. Although the spinoff SoftCorp was newly founded, many legacy assets of the automotive Group were incorporated into the new software company. On the one side, the spinoff enabled a breakout of existing structures and established practices to evolve new ones suitable for software development. Conversely, a large percentage of SoftCorp's employees came from other Group manufacturing brands. Thus, *values and practices* manifesting a manufacturing orientation were brought along from these previous employees and influenced the identity-forming of SoftCorp. However, the 'DNA' and legacy of AutoCorp and its Group's brands contradict SoftCorp's mission and vision (Project Manager 2, Project Manager 4, Change Facilitation Manager 3), preventing it from reaching its full potential. Finally, SoftCorp employment contracts that allow former AutoCorp employees to return to their former employer hindered full engagement, anchoring, and *identification* with the company (Project Manager 2, Technical Engineer 1, Software Developer 2, Principal 1, Change Facilitation Manager 1).

Tensions due to novelty between AutoCorp and SoftCorp. Due to the novelty of SoftCorp being responsible for a unified software platform and automotive cloud, several tensions occurred between AutoCorp and SoftCorp. First, the Group's brands do not yet have *confidence* in SoftCorp. One reason is that SoftCorp does not yet have a long track record; its projects are only in development status and progressing slowly. In addition, failures and mistakes by one company lead to a decline in confidence in the capabilities of the other companies and as a basis for blaming each other rather than collaborating to solve problems jointly (e.g., Product Manager 1, Project Manager 7). Second, the collaboration between AutoCorp and SoftCorp is further complicated because SoftCorp's *position* has not been regulated within the Group. For example, SoftCorp's expectations, authorities, and activities are unclearly articulated and communicated (e.g., Project Manager 2, Principal 2). While some employees view the spinoff as a software supplier to the automotive industry, others consider it an individual brand on par with Group's brands, such as AutoCorp. Third, the Group's objective of creating digitally enabled vehicles enhanced through digital services is complicated by the spinoff's organizational and product separation (physical car vs. immaterial software and services). Consequently, employees lose sight of the automotive Group's common objective and vision thinking only in their functional division (Software Developer 2, Principal 2, Product Manager 1). Among others, software-related activities are viewed as not in line with AutoCorp's core principles, making it challenging to produce, e.g., autonomous driving vehicles. These obstacles stem from the different business interests of AutoCorp as a traditional, incumbent manufacturer and SoftCorp as a software company and digital services provider, which are difficult to align.

5 Discussion

We sought to answer the research question of how the OI evolves in incumbent firms during DT to understand why DT initiatives can lead to inertia. To do so, we first identified the changing OI dimensions and then the paradoxical tensions between the old and new OI. Our in-depth study between 2019 – 2023 enabled us to investigate OI changes and conflicts during DT over time. Our study yielded positive and negative effects before the spinoff creation, when software engineers were united in a division within the manufacturing firm, and after the spinoff creation, when software engineers got divided into two separate organizations. Based on our results, we derived two implications.

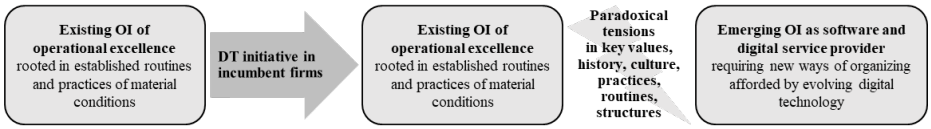


Figure 2. Theoretical framework of OI during DT within incumbent firms

First, DT disrupts the existing OI as integrating the identity of being a service provider requires changes in OI dimensions and new ones. The *direct OI conflicts* led to organizational tensions as two diverse ways of working (long product development vs. agile software development) clashed. For example, digitized products, such as autonomous vehicles, offer new possibilities; thus, product understanding needs to be changed. Additionally, new capabilities and knowledge became necessary to develop digitized products. However, in cases of urgent troubleshooting, having product- and software-focused employees in one organization leads to faster problem-solving due to direct collaboration. As a takeaway, product-orientated employees need clarification about their contribution towards DT. Otherwise, it might hinder the integration of a digitized service provider identity. Therefore, education and clarity of everyone's contribution to the firm's DT vision are crucial.

Second, through the spinoff, no new identity can be formed. The manufacturing firm can focus on engineering innovations (e.g., BEVs), while the spinoff is responsible for software and service innovations. Thus, this pathway avoids direct identity conflicts as there are, i.e., fewer direct communication. In turn, this leads to *indirect identity conflicts* in the form of organizational tensions that manifest in the product vision: aiming for a well-engineered vehicle with technical innovations (e.g., electric engine) for mobility versus aiming to achieve an experience space for diverse occasions using vehicles. The problem shift due to the spinoff thus complicates the joint product development, which requires collaboration and mutual agreement at one point. Hence, expectations, hand-over formats, and processes must be clarified between the firms to better benefit from the spinoff pathway.

Comparing these two states, we see that the spinoff did not lead to developing a new OI that combines being a manufacturer and providing digital services. Instead, it led to isolating both OIs in different firms, which increased identity-related boundaries (Santos & Eisenhardt, 2005). Albeit removing the state of bipolarity and subsequent paradoxical tensions within one firm, we have first evidence in the second phase that AutoCorp centers back to its old identity, rendering the first promising DT approaches of phase 1 obsolete.

These insights yield promising contributions to the literature on OI (e.g., Albert & Whetten, 1985; Corley & Gioia, 2004), DT (e.g., Vial, 2019; Wessel et al., 2021), and paradoxical tensions (e.g., Smith & Lewis, 2011; Soh et al., 2019; Viljoen et al., 2022). The first contribution pertains to OI in the context of DT, exploring the evolving OI and the state of bipolarity. We followed Wessel et al.'s (2021) call that DT is more complex and should be distinguished from ITOT as it is characterized by the emergence of a new OI by providing insights on how conflicting OIs evolve and may be addressed.

Second, the identified paradoxical tensions due to keeping the old OI (i.e., product manufacturer) and infusing it with a new OI (i.e., service provider) can explain why DT initiatives lead to inertia and remain unsuccessful. We were interested in investigating the interrelations of DT and OI and the underpinning reasons for failed DT initiatives. While previous research on paradox theory noted a range of competing tensions in DT, our study links paradoxical tensions to OI and supports explanations of its occurrence. Additionally, we provide an extension to the paradox theory category "belonging" of

Smith and Lewis (2011), which considers identity-related issues such as values, roles, and memberships.

Third, the awareness and reasons for tensions during DT of incumbent firms will inform future research and provide clarity to practitioners. We emphasize that incumbent firms must not only consider product transformations but also strategically consider their OI transformation, such as finding ways to balance the identity of operational excellence with being a service provider. Our study encourages managers to prepare for, accept and reflect on these OI tensions during DT.

While we conducted many interviews, we acknowledge that our data derives from an automotive firm and its corporate spinoff. Our main limitation is how much our findings are generalizable beyond our case. Thus, we recommend future research in other incumbent firms facing DT initiatives to investigate how OI evolves and whether these cases also experiencing paradoxical tensions. Further, we need to find out if separating conflicting OIs through a spinoff is an approach that can effectively reduce OI tensions. As the spinoff as executive action to handle identity bipolarity has relevance, comparative cases that allow theorizing, e.g., contextual factors that can explain why the spinoff strategy works or does not work, would yield valuable results. In addition, digitized products offer a platform for cooperation with different stakeholders. Hence, new organizational forms (e.g., forming ecosystems or strategic alliances, partnering with or acquiring startups, creating subsidiary firms) occur with varying impacts of OI and might lead to a state of OI multipolarity. Thus, future research on OI challenges during DT is fruitful to investigate.

6 Conclusion

We found that the case firm continues to be strongly product and manufacturing-oriented while avoiding the infusion of the identity of being a service provider. This has been expressed by spinning off all recently hired software-oriented employees by founding an independent firm. Our findings show that OI is the cause of resistance to change on various levels (e.g., employees' decision-making and behavior of employees and structure) and, thus, the source of organizational tensions leading to organizational inertia during DT. Therefore, the required changes based on the digitized products remain unsuccessful, especially in critical parts of the organization where the former OI is still strong (i.e., the production). Further, our paper provides the first evidence of OI bipolarity due to DT and how this can lead to organizational and product tensions. We point out that the cause of organizational tensions is friction between the identity of operational excellence and the identity of being a digital service that manifests on different organizational levels.

References

Albert, S., & Whetten, D. A. (1985), Organizational identity. In L. Cummings & B. Staw (Eds.), *Research in organizational behaviour* (Vol. 7, pp. 263-295).

Corley, K. G., & Gioia, D. A. (2004), Identity ambiguity and change in the wake of a corporate spin-off. *Administrative Science Quarterly*, *49*(2), 173-208.

Dremel, C., Wulf, J., Herterich, M. M., Waizmann, J.-C., & Brenner, W. (2017), How AUDI AG established big data analytics in its digital transformation. *MIS Quarterly Executive*, *16*(2), 81–100.

Eisenhardt, K. M., & Graebner, M. E. (2007), Theory building from cases: Opportunities and challenges. *Academy of Management Journal*, *50*(1), 25-32.

Elsbach, K. D., & Bhattacharya, C. (2001), Defining who you are by what you're not: Organizational disidentification and the National Rifle Association. *Organization Science*, *12*(4), 393-413.

Gioia, D. A., Corley, K. G., & Hamilton, A. L. (2012), Seeking qualitative rigor in inductive research: Notes on the Gioia methodology. *Organizational Research Methods*, *16*(1), 15–31. https://doi.org/10.1177/1094428112452151

Gioia, D. A., Patvardhan, S. D., Hamilton, A. L., & Corley, K. G. (2013), Organizational identity formation and change. *Academy of Management Annals*, *7*(1), 123-193.

Gioia, D. A., Schultz, M., & Corley, K. G. (2000), Organizational identity, image, and adaptive instability. *Academy of Management Review*, *25*(1), 63-81.

Glaser, B., Strauss, A., & Strutzel, E. (1968), The discovery of Grounded Theory; Strategies for qualitative research. *Nursing research*, *17*(4), 364. https://doi.org/10.1097/00006199-196807000-00014

Gurbaxani, V., & Dunkle, D. (2019), Gearing up for successful digital transformation. *MIS Quarterly Executive*, *18*(3).

Haskamp, T., Dremel, C., Berente, N., Yoo, Y., & Uebernickel, F. (2022), Punctuated Multi-Layered Liminality in Digital Transformation: The Case of an Automotive Platform. 43rd International Conference on Information Systems, Copenhagen.

Haskamp, T., Marx, C., Dremel, C., & Uebernickel, F. (2021), Understanding inertia in digital transformation: A literature review and multilevel research framework. Proceedings of the 42nd International Conference on Information Systems, Austin, Texas.

Keller, R., Ollig, P., & Rövekamp, P. (2022), Pathways to developing digital capabilities within entrepreneurial initiatives in pre-digital organizations. *Business & Information Systems Engineering*, *64*(1), 33-46.

Kraus, S., Jones, P., Kailer, N., Weinmann, A., Chaparro-Banegas, N., & Roig-Tierno, N. (2021), Digital transformation: An overview of the current state of the art of research. *SAGE Open*, *11*(3), 1-15.

Monteiro, E., Constantinides, P., Scott, S., Shaikh, M., & Burton-Jones, A. (2022), Qualitative research methods in information systems: a call for phenomenon-focused problematization. *MIS Quarterly: Management Information Systems*.

Porter, M. E., & Heppelmann, J. E. (2014), How smart, connected products are transforming competition. *Harvard Business Review*, *92*(11), 64–88.

Ravasi, D., & Schultz, M. (2006), Responding to organizational identity threats: Exploring the role of organizational culture. *Academy of Management Journal*, *49*(3), 433-458.

Riasanow, T., Soto Setzke, D., Böhm, M., & Krcmar, H. (2019), Clarifying the notion of digital transformation: A transdisciplinary review of literature. *Journal of Competences, Strategy & Management*, *10*(1), 5–31.

Sandkuhl, K., Wißotzki, M., Schmidt, R., & Zimmermann, A. (2019), On the effect of digitalization of products and services on enterprise architectures. 28th International Conference on Information Systems Development, Toulon, France.

Santos, F. M., & Eisenhardt, K. M. (2005), Organizational boundaries and theories of organization. *Organization Science*, *16*(5), 491-508.

Schultz, M. (1992), Postmodem Pictures of Culture: A Postmodem Reflection on the "Modem Notion" of Corporate Culture. *International Studies of Management & Organization*, *22*(2), 15-35.

Sinkovics, R. R., Penz, E., & Ghauri, P. N. (2008), Enhancing the trustworthiness of qualitative research in international business. *Management international review*, *48*(6), 689-714.

Smith, W. K., & Lewis, M. W. (2011), Toward a theory of paradox: A dynamic equilibrium model of organizing. *Academy of Management Review*, *36*(2), 381–403. https://doi.org/10.5465/amr.2009.0223

Soh, C., Yeow, A., Goh, Q., & Hansen, R. (2019, Dec), Digital transformation: Of paradoxical tensions and managerial responses. Proceedings of the 40th International Conference on Information Systems, Munich, Germany.

Strauss, A., & Corbin, J. M. (1990), *Basics of qualitative research: Grounded theory procedures and techniques*. Sage Publications, Inc.

Svahn, F., Mathiassen, L., & Lindgren, R. (2017), Embracing digital innovation in incumbent firms: How VOLVO cars managed competing concerns. *MIS quarterly*, *41*(1), 239–253. https://doi.org/10.25300/misq/2017/41.1.12

Tilson, D., Lyytinen, K., & Sørensen, C. (2010), Research commentary — digital infrastructures: The missing IS research agenda. *Information Systems Research*, *21*(4), 748–759.

Tripsas, M. (2009), Technology, identity, and inertia through the lens of "The Digital Photography Company". *Organization Science*, *20*(2), 441-460.

Van Rekom, J., & van Riel, C. B. M. (2000), Operational measures of organizational identity: A review of existing methods. *Corporate Reputation Review*, *3*, 334-350.

Vial, G. (2019), Understanding digital transformation: A review and a research agenda. *Journal of Strategic Information Systems*, *28*(2), 118–144. https://doi.org/10.1016/j.jsis.2019.01.003

Viljoen, A., Hein, A., Przybilla, L., Soto Setzke, D., & Krcmar, H. (2022), Striving for Global Optima in Digital Transformation: A Paradox Theory Approach. 43rd International Conference on Information Systems, Copenhagen.

Warner, K. S., & Wäger, M. (2019), Building dynamic capabilities for digital transformation: An ongoing process of strategic renewal. *Long range planning*, *52*(3), 326-349.

Wessel, L., Baiyere, A., Ologeanu-Taddei, R., Cha, J., & Blegind-Jensen, T. (2021), Unpacking the difference between digital transformation and IT-enabled organizational transformation. *Journal of the Association for Information Systems*, *22*(1), 102-129.

Yin, R. K. (2018), *Case study research and applications: Design and methods* (6 ed.). Sage publications.

Yoo, Y., Henfridsson, O., & Lyytinen, K. (2010), Research commentary—The new organizing logic of digital innovation: An agenda for Information Systems Research. *Information Systems Research*, *21*(4), 724–735. https://doi.org/10.1287/isre.1100.0322