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Short Paper

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Abstract

In the rapidly evolving digital transformation (DT) landscape, understanding organizational identity (OI) complexities becomes imperative. Leveraging a comparative analysis of AutoCorp and its spinoff, SoftCorp, this paper unfolds OI tensions in the context of DT. Despite advances in the literature on OI and DT, a gap exists in understanding how conflicting identities within a parent company and its spinoff can impact the organizations and the products they develop. We unearth that the dominant identity in AutoCorp, rooted in traditional manufacturing, creates tensions with the digital service-provider identity in SoftCorp. Additionally, we find that such separation may temporarily relieve internal tensions but introduce new challenges at the organizations' boundaries, affecting the digitized product. Our findings contribute to the theoretical discourse in OI and provide insights for companies undergoing DT. In our ongoing research project, we plan to develop an integrative framework reconciling these diverging identities for optimal digitized product development.

Keywords: Digital Transformation, Organizational Identity, Incumbent Firm, Case Study

Introduction

In the context of accelerated competitiveness, firms are embracing Digital Transformation (DT) initiatives to enhance customer satisfaction by improving or creating new offerings (Beverungen et al., 2019). However, 70% of DT efforts fail to realize their full potential, with inertia being the primary issue (Forth et al., 2020). This inertia, stemming from the need to alter deeply ingrained behaviors, is particularly pronounced in manufacturing firms (Forth et al., 2020; Soto Setzke, 2020; Svahn et al., 2017). These firms face the complex task of integrating two distinct identities: the physical manufacturer, focused on operational excellence and high-quality hardware products, and the digital service provider, aiming to enhance products through digital technologies (Lucas et al., 2013; Matt et al., 2015).

Manufacturing firms have attempted to cultivate a new organizational identity (OI) that merges the physical manufacturing and digital service aspects to address DT (Graf, Hess, et al., 2023; Graf, Waltermann, et al., 2023). This process involves strategically aligning organizational culture, structure, and processes to embrace digital technologies (Hartl & Hess, 2017; Lucas et al., 2013; Matt et al., 2015; Westerman et al., 2019). Further, cultivating a new OI also necessitates a fundamental shift in deeply rooted behaviors and competencies, fostering a culture that supports continuous learning and adaptation to rapidly changing technological landscapes (Wessel et al., 2021). However, this integration can affect existing values, beliefs,

routines, processes, and hierarchies within the organization, thus being complex and challenging, often leading to high DT failure rates (Graf, Hess, et al., 2023; Hess et al., 2016).

In contrast, another approach that has gained traction is the creation of a spinoff to separate the conflicting identities (Keller et al., 2022; Prügl & Spitzley, 2021). This strategy allows for more flexibility in skill development while maintaining specialization, but its suitability for resolving OI tensions during DT remains unclear (Santos & Eisenhardt, 2005; Soto Setzke et al., 2023; Svahn et al., 2017). Furthermore, the collaboration between an organization and its spinoff, especially in developing an integrated product reflecting operational and digital identities, is poorly understood (Gurbaxani & Dunkle, 2019; Keller et al., 2022). This gap in understanding, coupled with the disruptive nature of DT in manufacturing firms due to factors such as de-materialization and collaborative processes (Dremel et al., 2017; Tronvoll et al., 2020), prompts the need to investigate *how a spinoff affects OI tensions and the resulting digitized product during DT initiatives*.

This study follows a qualitative case study to explore the complexities of OI tensions within manufacturing firms undergoing DT. We selected the method for its appropriateness in investigating complex, real-world phenomena within their natural context, thus allowing for a nuanced understanding of organizational dynamics and tensions (Yin, 2014). The case study approach enables us to explore the parent manufacturing firm and its corporate spinoff, allowing us to dissect the interplay of OI within and between these entities. Moreover, this approach is suitable for capturing the intricacies of integrating operational and digital identities, mainly where pre-existing literature is scarce or inconclusive (Keller et al., 2022; Prügl & Spitzley, 2021). The case study builds on semi-structured interviews with representatives from the parent firm and the spinoff, amounting to 57 interviews over three years (2020-2023). This longitudinal perspective adds depth to our understanding of how OI tensions evolve.

Our initial results reveal internal tensions within the parent organization before the spinoff was founded. These tensions were mainly due to differing work approaches between the software and manufacturing units. For example, the clash between traditional and agile development models led to delays in integrating software into automotive products. Post-spinoff, these internal tensions were resolved mainly, shifting focus to tensions between the two organizations. While this separation allowed the parent firm to concentrate on operational tasks, the spinoff could work independently on software-related activities. However, the divergence in organizational visions introduced new complexities, affecting the advancement of digitized products.

As an ongoing research effort, we provide the first evidence of inertia in DT caused by conflicting OIs. Using OI as a theoretical lens and investigating spinoffs as a distinct way to mitigate OI tensions, we provide novel insights into the DT phenomenon. Furthermore, our findings inform extant theory on OI in manufacturing firms (Graf, Hess, et al., 2023; Graf, Müller, et al., 2023) and help managers to understand DT's challenges better, weighing up the advantages and disadvantages of cultivating a new organizational culture that combines both OIs or creating a spinoff and separating conflicting identities. Our next planned step is to dive deeper into our data analysis and systematize guidelines on mitigating identity conflicts during DT.

Theoretical Background

The concept of OI originates from Albert and Whetten (1985) and remains relevant in light of recent developments demanding organizational change (Gioia, Patvardhan, et al., 2013). The OI concept is central, distinctive, and enduring, reflecting organizational members' perspectives of "who we are as an organization" (Albert & Whetten, 1985; Gioia, Patvardhan, et al., 2013). The central feature manifests as key values, labels, products, services, or practices essential to the organizational purpose and self-definition (Gioia, Patvardhan, et al., 2013). The distinguishing feature focuses on creating differences between other (similar) organizations. The enduring pillar has been debated controversially, with some arguing for stability and others for beneficial instability (e.g., Corley et al., 2006; Gioia, Patvardhan, et al., 2013; Ravasi & Van Rekom, 2003; Whetten & Godfrey, 1998). Furthermore, OI is culturally rooted in the organization, serving as a foundational element that aids members in understanding their collective history, practices, and experiences (Ravasi & Schultz, 2006; Schultz, 1992). In line with Graf, Hess, et al. (2023), we consider OI not to be enduring (static) but as a collective (re)negotiation process.

In the context of DT, OI plays a critical role, with recent studies highlighting OI tensions and resulting organizational inertia as particularly prevalent in unsuccessful DT initiatives (e.g., Hanelt et al., 2021;

Haskamp et al., 2021). In contrast to IT-enabled transformation that tends to reinforce an existing OI, DT impacts how firms create and capture value, requiring a shift from an established to a new OI (Soh et al., 2019; Tripsas, 2009; Wessel et al., 2021). This shift can lead to OI conflicts, where multiple identities compete for prominence (Corley & Gioia, 2004), resulting in resistance, primarily when the existing identity is deeply rooted (Gioia et al., 2000). The OI tensions arise from the complex interplay between existing OI and the need to transition toward a new OI (Haskamp et al., 2021; Wessel et al., 2021). Even though recent IS research draws attention to the relationship between DT and OI, *"little is known about how digital transformation processes affect organizations' identity change"* (Graf, Müller, et al., 2023, p. 4224).

To avoid OI-induced organizational inertia during DT, firms must actively manage the OI transition process (Lindgren et al., 2015; Soh et al., 2019). The literature on OI transitions differentiates between transitioning from one to another OI, which involves a deliberate and strategic realignment of core values and practices to embrace a new (Clark et al., 2010; Kreiner et al., 2015), and shifting conflicting OIs outside the firm boundaries, a process known as identity spinoff, where conflicting OIs are separated into distinct entities to reduce internal tension and foster focused growth (Corley & Gioia, 2004; Prügl & Spitzley, 2021; Santos & Eisenhardt, 2005). Both approaches present unique challenges and opportunities, underscoring the need for nuanced understanding and careful management of OI dynamics in DT initiatives (Keller et al., 2022; Soto Setzke et al., 2023). Thus, *"inertia associated with identity raises the question of how managers should best accomplish identity changes associated with new technology"* (Tripsas, 2009, p. 456). Furthermore, little is known about how exactly the members of an organization embrace a new OI in the context of DT (Haskamp et al., 2021).

Firms that struggle from OI-induced tensions are manufacturing companies that must keep their old manufacturer identity of operational excellence in producing goods and their digital service identity of offering additional value-adding services (Svahn et al., 2017). For example, the automotive industry is undergoing a fundamental DT process, transforming from classic carmakers into digital tech companies (Diess, 2020) while transitioning from product-centric to service-centric business models (Soto Setzke et al., 2023). The emerging OI causes tensions that manifest, among others, between hardware and software, established structures and digital change, years of expertise and innovation questioning incumbent firms' OI who they are and who they want to be in the future (Graf, Hess, et al., 2023; Graf, Waltermann, et al., 2023). While previous research explored the impact of DT on OI (e.g., ways in which DT affects OI change) (Graf, Hess, et al., 2023; Graf, Müller, et al., 2023; Wessel et al., 2021) and the mutual dependency of DT and OI (Graf, Waltermann, et al., 2023), it remains unclear how OI unfolds in detail.

In addition, for these incumbent manufacturing firms, relinquishing their old OI to embrace the new one (Elsbach & Bhattacharya, 2001) is often impossible as they must still produce physical products that integrate digital services. To resolve these tensions, *"keeping the existing and emerging OI separate from one another"* (Keller et al., 2022, p. 43) through developing a spinoff often seems to, also from a practitioner perspective (e.g., Ford, Miele), the only viable option. In doing so, the OI of operational excellence and service provision communicate through the interfaces of their respective firms, a strategy seen as a potential solution to conflicts during DT (Kaiser & Stummer, 2020; Siachou et al., 2021). While separated, the new OI can explore the potential of digital technology in its epistemic stance to unfold its new identity (Fayard et al., 2016). Existing research investigated OI in communication patterns (Prügl & Spitzley, 2021; Ungureanu et al., 2020) and the relevance of ecosystems, strategic outsourcing through partnerships, insourcing, and structural separation through new business units or spinoffs during DT (Rummel et al., 2022; Soto Setzke et al., 2023; Vial, 2019). However, questions remain about the effectiveness of the approach to separate conflicting OIs, whether it resolves the tension or shifts the problem. Also, spinoffs' impact on resolving OI tensions on joint product development in the DT context is poorly understood. This highlights the need to investigate OI spinoffs and OI transitions in manufacturing firms during DT.

Method

We conducted an in-depth case study of AutoCorp, a global leader in premium automotive manufacturing (Yin, 2014). An in-depth case study is particularly apt for investigating complex and emerging phenomena (Eisenhardt, 1989; Siggelkow, 2007), such as identity changes during DT (Monteiro et al., 2022). AutoCorp was selected for its manifest OI tensions, which became evident as it transitioned from a traditional car manufacturer to a provider of digital driver assistance systems and services. As the traditional manufacturing and mechanical engineering OI still dominated the new identity, AutoCorp established a

spinoff, SoftCorp, to address these tensions, enabling us to compare unfolding OI tensions within and across firms. This comparative analysis offers insights into the benefits, challenges, and impacts on the collaboration and product of the two approaches during DT. Hence, we illuminate the different effects of organizational restructuring with a spinoff of our IT artifact – the connected, autonomous-driving vehicle.

Building on this case study, we collected 57 interviews with employees across various divisions and hierarchical levels (see Table 1). Before the foundational phase of SoftCorp in 2020, we focused on long-tenured employees who work in AutoCorp, embodying the manufacturing identity. Additionally, we interviewed newly recruited software engineers to explore emerging identity tensions at AutoCorp (30 interviews). Post-SoftCorp establishment, we conducted 27 interviews within AutoCorp and SoftCorp to gauge inter-firm dynamics. We collected data in different divisions, such as the technical development (e.g., concept development, predevelopment, chassis development, automated driving, business processes) and organization (change management, strategy) departments, to understand how identity tensions manifest and affect the product on different levels. Complementing these interviews, we collected archival data such as presentations, reports, and meeting minutes, enriching our dataset.

# at AutoCorp	# at SoftCorp	Position
3	1	Project Manager UX/UI
5	6	Project Manager Strategy & Innovation
6	1	Process Manager
1	1	Quality Manager
5	1	Change Manager
3		Technical Engineer
2	1	Product Manager
11	2	Software Developer; Systems Engineer
6	2	Scrum Master; Product Owner
Table 1. List of Interviewees at AutoCorp and SoftCorp		

We followed a semi-structured interview guideline to ensure methodological rigor, which we iteratively refined to improve reliability (Yin, 2014). The interview guideline included topics such as the interrelation of DT on individuals' essential values, the altered collaboration within AutoCorp and SoftCorp and between both firms, and the respecting effects on the product. The interviews averaged 45 minutes and were audio-recorded and transcribed. We concluded the data collection phase as we reached theoretical saturation, meaning that new interviews did not yield new insights (Strauss & Corbin, 1998). This approach enhances our findings' equivalency, credibility, and dependability, aligning with the alternative metrics for reliability and validity in qualitative research (Sinkovics et al., 2008).

After transcription, we used MAXQDA for data analysis, following the principles of open, axial, and selective coding (Glaser et al., 1968). Our theoretical lens of OI guided the coding process (Gioia, Corley, & Hamilton, 2013). We identified 1st-order concepts as open codes closely aligned with the raw data. Examples of first-order concepts include 'tinkerers, problem solvers, good engineering,' 'big exhaust and great sound,' 'naggers, resting on past successes, quality issues,' and 'vehicle as an experience space.' Axial coding followed, where we grouped these concepts into broader 2nd-order themes to better understand how they interrelate. We engaged in multiple iterations to distill differences and similarities between AutoCorp and SoftCorp and how OI challenges unfolded and affected the product during DT. An example is 'traditional values' and 'current values.' Finally, we employed selective coding to distill these themes into aggregate dimensions, adopting an inductive qualitative research approach (Gioia, Corley, & Hamilton, 2013).

Findings

Our findings are structured in two phases: the pre-spinoff identity tensions and the post-spinoff identity dynamics. The first section portrays the tensions between long-tenured employees with a mechanical engineering focus and the recently hired employees with a software engineering focus within AutoCorp. The second section presents the tensions occurring across the organizational boundaries of AutoCorp and

SoftCorp. Both phases describe how the OI unfolds in interrelation with the firm's DT initiatives and pinpoint the advantages and disadvantages for the within- and across-firm collaboration and the product.

Pre-Spinoff Identity Tensions

AutoCorp was and is deeply entrenched in a manufacturing identity, a sentiment echoed by employees who colloquially referred to themselves as *"metal sheet benders"* (Product Manager, AutoCorp) developing *"vehicles based on high-quality engineering skills"* (Technical Engineer, AutoCorp). To remain competitive, integrating more and more digital technology into its products was intended to foster smart, autonomous driving vehicles. However, the established OI had tangible implications for the company's operations, particularly in innovative product development. For instance, the creation of a new automotive model was spearheaded by mechanical engineers, and software integration was often relegated to the final stages. This resulted in situations where essential services, such as advanced driver-assistance systems, were either delayed or inadequately tested due to last-minute software integration.

Acknowledging the limitations of this manufacturing-centric approach, AutoCorp embarked on a strategic transformation towards a more service-oriented identity. This shift was characterized by recruiting in-house software engineers and incorporating digital technologies like machine learning for predictive maintenance. The necessity for this change was underscored by the automotive industry's rapid digitization, where features like autonomous driving and real-time data analytics have become competitive factors and market differentiators. However, the newly hired software engineers, versed in agile methodologies, found themselves in a starkly different organizational culture: "*We software developers are often seen as exotic in the company"* (Software Developer, AutoCorp). Unlike agile development's rapid, iterative cycles, AutoCorp's culture was characterized by long product development timelines and a hierarchical decision-making structure. For example, while software engineers were used to "*sprints*" lasting a few weeks, mechanical projects at AutoCorp often had timelines extending over seven years. In addition, difficulties arose as AutoCorp was used to an authoritarian leadership *"moving things forward due to the management attention and the hierarchy"* (Process Manager, SoftCorp), opposing agile software development.

Integrating software engineers into AutoCorp's traditional manufacturing environment created tensions between these OI. Software engineers were often labeled as *"birds of paradise,"* a moniker highlighting their perceived incongruence within the company's established OI. This tension manifested in a developer-unfriendly work environment. For example, software engineers found that their agile stand-up meetings were often interrupted or rescheduled to accommodate the rigid schedules of the mechanical engineering teams: *"At AutoCorp, it has always been problematic to start something new with employees that still incorporate old values and habits not willing to deviate from it"* (Process Manager, AutoCorp). This rigidity disrupted the software development process and led to a sense of marginalization among the software engineers, who felt that their contributions were not given equal weight in the larger scheme of the organization.

The identity tensions within AutoCorp had discernible repercussions on the quality and reliability of its physical products. An example is the delay in launching a new electric vehicle model with an advanced battery management system. While the software team had developed a cutting-edge system for optimizing battery life and performance, this software was integrated so late in the development cycle that it bypassed rigorous testing. Consequently, this led to post-production recalls addressing battery issues, damaging AutoCorp's brand reputation and resulting in substantial financial losses: *"All gets sorted out at the very end, then the software functions do not work, and you start to fix bugs, which costs an incredible amount of money and time at this stage"* (Quality Manager, AutoCorp).

The identity tensions also negatively impacted the digital components of AutoCorp's offerings. A notable instance is the company's in-car entertainment system, plagued by an outdated user interface and frequent software glitches. Due to the late-stage integration of the software into the hardware, the system became *"untouchable"* in terms of updates or modifications. This manifested AutoCorp's traditional belief that a product is *"finished once it rolls off the assembly line"* (Systems Engineer, AutoCorp). Such a mindset is fundamentally at odds with the dynamic nature of digitized products, which require continuous updates to meet evolving user needs and expectations: *"Our product is no longer a vehicle on four wheels, but a software-based system"* (Process Manager, SoftCorp). This resulted in customer complaints and negative reviews, further eroding the brand's digital credibility.

Post-Spinoff Identity Dynamics

AutoCorp strategically spun off its software development division into a new entity, SoftCorp, to develop a Group software platform and to mitigate the internal OI tensions that plagued its operations. *"It was a good idea to set up an organization that develops software and a vehicle operating system"* (Process Manager, AutoCorp). The spinoff involved newly hired employees, existing software developers and employees transferred from AutoCorp and its automotive group, and four other IT and software development subsidiaries. This reorganization allowed SoftCorp to adopt more agile practices, such as a quarterly budget planning cycle, in contrast to AutoCorp's rigid five-year planning framework. *"We want to be a software company. We cannot function with this waterfall model, milestones, etc."* (Scrum Master, SoftCorp). This newfound flexibility enabled SoftCorp to adapt more swiftly to market dynamics and technological innovations.

The spinoff also led to a marked shift in the interaction and communication dynamics between AutoCorp and SoftCorp. While the initial setup envisaged SoftCorp operating on an equal footing with AutoCorp, this ideal was met with skepticism and resistance. *"There was a framework agreement and a manual defining the collaboration between the brands and SoftCorp, which was not taken seriously"* (Process Manager, SoftCorp). For example, when SoftCorp tried to introduce agile methodologies to AutoCorp's traditional manufacturing processes, it was met with resistance, indicating that OI tensions had merely shifted from intra-organizational to inter-organizational levels. Actually, *"product specifications were communicated to SoftCorp through the old [informal] communication channels"* (Process Manager, SoftCorp).

The OI tensions between the two entities had repercussions on the development and quality of physical products. A case in point is developing a hybrid vehicle that required close collaboration between AutoCorp's mechanical engineers and SoftCorp's software developers. The agile development cycles of SoftCorp were at odds with AutoCorp's elongated timelines, resulting in delays and less-than-optimal integration of the vehicle's software-controlled energy management system. In addition, *"there is much confusion about responsibilities of who decides what"* (Process Manager, SoftCorp), giving software engineers less power as more emphasis is ascribed to the physical vehicle components, illustrating the strong roots in their old OI as a traditional car manufacturer.

Similarly, digital products were not exempt from the impact of these OI tensions. A notable example is a mobile application developed by SoftCorp for real-time vehicle diagnostics. Although SoftCorp could develop the application rapidly, its integration into AutoCorp's existing systems was fraught with difficulties. A SoftCorp employee states, *"AutoCorp is tired of transformation while [SoftCorp] aims a change from the car as a mobility object to a living space"* (Software Developer, SoftCorp). This led to a feature-rich but compatibility-challenged product, compromising the user experience. Compared to the pre-SoftCorp era, digital product innovations can now be developed quickly because the competencies and structures have been created within SoftCorp. However, the process slows and stagnates at the firms' boundaries regarding product integration as digital technologies meet traditional windmills.

In summary, the identity tensions within AutoCorp have evolved post-spinoff into inter-organizational tensions between AutoCorp and SoftCorp. While the spinoff provided a more conducive environment for agile software development, it also introduced new challenges and inter-organizational OI tensions. Not defining *"a sharp division of who does what and how beforehand"* (Product Manager, SoftCorp) caused identity ambiguity. These tensions have impacted physical and digital products, affecting their quality, features, and time-to-market.

Discussion and Conclusion

The present study aims to explore the intricacies of OI amidst the landscape of DT, with a particular focus on AutoCorp and its spinoff, SoftCorp. Despite seminal works on the intersection of OI and DT in manufacturing firms (e.g., Graf, Hess, et al., 2023; Graf, Müller, et al., 2023), we lack insights into the benefits and challenges of how OI tensions unfold and if the creation and separation of conflicting OIs through a spinoff can ease these tensions. In the following, we provide a comparative analysis discussing the advantages and disadvantages of having separate but related OIs based on our interview insights and strategic documents. Then, we present how the visions of AutoCorp and SoftCorp diverged and their implications for the digitized product, corroborated by interviews and vision statements.

The extant literature on OI posits that conflicting identities within an organization can be a source of tension and conflict (Albert & Whetten, 1985; Ashforth, 2000). These tensions manifest not just organizationally but also in the products and services rendered. In the case of AutoCorp, the dominant manufacturing identity subjugated the emerging digital service-provider identity, leading to frictions on both the organizational and product level. Such internal tensions often articulated as identity-based conflicts, can derail an organization's strategic initiatives and undermine collective efforts (Kreiner et al., 2015).

A potential solution to mitigate these tensions is to separate the conflicting identities into distinct organizational entities (Prügl & Spitzley, 2021; Santos & Eisenhardt, 2005). Following a spinoff strategy, both AutoCorp and SoftCorp could grow their OI without negatively affecting each other within the respective organization. This bifurcation has its merits. For instance, SoftCorp can focus on software development and foster a culture of innovation, while AutoCorp excels in manufacturing, aligning with its dominant OI. Hence, the product could theoretically benefit from the best of the two OIs. However, the separation is not without its complications. Though it might ease tensions within the respective firms, it creates new sets of challenges at the boundary of the organizations (Santos & Eisenhardt, 2005), particularly in the joint product development process. The resultant product often ends up skewed towards the more dominant OI, which is AutoCorp's manufacturing focus. This misalignment results in products that fail to harness the potential of both OIs, leading to less-than-optimal digitized products.

In the evolving landscape of organizational studies, OI has garnered significant attention for its role in shaping strategic direction and operational processes (Albert & Whetten, 1985; Gioia et al., 2000). A less examined, yet critical, aspect is how diverging OIs can lead to product misalignment. When an organization's subdivisions possess differing core identities — one, for instance, adhering to traditional manufacturing principles and another leaning towards service orientation or digital innovation — it leads to a complex interplay of objectives, values, and strategies (Kreiner et al., 2015). Such identity-driven dichotomies create a milieu where product development can suffer from misalignment due to competing visions and conflicting strategic imperatives. This dissonance manifests itself in incoherent product features, a lack of synergy in integrated components, and, ultimately, a product that fails to fully satisfy the strategic goals of any of the contributing OIs.

Albeit being initial results, these insights illustrate that identity-driven product misalignment cannot be easily mitigated by separating conflicting identities into two entities but requires a more integrated approach. Hence, separating conflicting identities might offer a temporary respite from internal tensions, it is not a panacea. The long-term sustainability of such a strategy requires a more integrative approach that leverages the strengths of both OIs for collaborative digitized product development.

In the next phase of our research, we aim to develop an integrative framework that reconciles the diverging OIs of AutoCorp and SoftCorp for optimized digitized product alignment. Our initial findings indicate that separating these conflicting OIs into distinct organizational entities provides a short-term fix but fails to address underlying tensions at the boundary between the organizations (Santos & Eisenhardt, 2005). Given the complex nature of joint digitized product development, we will investigate mechanisms that enable organizations to maintain their core OIs while contributing constructively to the product development cycle. Furthermore, we will explore strategies to mitigate identity-driven product misalignment, contributing to research and practice on the intersection of OI and DT.

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