Building Digital Transformation Competence: Insights from a Media and Technology Company

Research Paper

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Abstract. Managing digital innovations remains a major challenge for organizations undergoing digital transformation. Building relevant competencies is key to an organization's survival. Existing studies on competence building in the context of digital transformation remain abstract and lack concrete examples. We present a qualitative case study to address this limitation and provide insights into how an organization can build competencies to manage digital innovations and drive digital transformation. We contribute to the literature by presenting the sequence of digital transformation competence building and the applied instruments. Practitioners can leverage these insights to reassess resource utilization and develop new innovative strategies for competence building.

Keywords: Competencies, Competence Building, Organizational Learning, Digital Transformation, Digital Innovation

1   Introduction

Digital transformation (DT) remains a key area of interest in research and practice (Hanelt et al., 2021). Enabled by the advancement of digital technologies, DT impacts an organization on multiple levels, presenting major strategic and operational challenges (Hess et al., 2016). In the past, organizations with strong information technology (IT) competencies could successfully manage digital technologies (Wessel et al., 2021). Managing digital innovations (DIs), however, necessitates a more holistic set of competencies beyond IT competence (Wiesböck, 2018).

Competencies fundamentally determine an organization's ability to act and react to its environment. To build competencies, organizations rely on systematic sequences and instruments (Basten and Haamann, 2018). This process of competence building necessitates the transformation of an organization's competence base, involving not only employees and their knowledge but also organizational elements such as processes, routines, and structures (Osmundsen, 2020, Vial, 2019).

Substantial progress has been made in investigating competence as a concept (Alerasoul et al., 2022, Osmundsen, 2020, Paul et al., 2024). Specifically, within the

DT literature, scholars have examined DT competence by identifying essential competencies for DT (Bohrer, 2024, Paul et al., 2024), presenting empirical cases that provide valuable insights into the complexity of competencies at both individual and organizational levels (Osmundsen, 2020), and investigate the connection between competencies and successful transformation (Oludapo et al., 2024).

Despite these advancements, a research gap remains concerning competence building in organizations, particularly in the context of DT and concerned with the management of DIs (Butschan et al., 2019, Konopik et al., 2022, Osmundsen, 2020). Existing research lacks concrete insights about the sequence of DT competence building, the instruments used, and the essential organizational interconnections that facilitate it. Moreover, Osmundsen (2020) highlights that traditional competence-building approaches and instruments may no longer be sufficient for developing the competencies required to manage DIs and drive DT.

To address this research gap, we pose the following research question (RQ): *How does an organization build competencies for digital transformation?*

To answer the RQ, we conduct a single case study of a media and technology company. With more than 100 years of history, the case company has long been exposed to changed consumer behavior and emerging (digital) technologies. Through its advancements in DT, it inherits valuable insights on the topic of DT competence building.

In this study, we build upon the work of fellow IS scholars (i.e., Bohrer, 2024, Osmundsen, 2020, Paul et al., 2024) and contribute to both research and practice. We present an empirical case that offers new insights into the concrete sequence of developing DT competence. Further, we present concrete examples of the competence-building instruments designed and applied in this sequence. Additionally, we introduce a model that highlights new perspectives on the underlying characteristics of the competence-building instruments used. Practitioners can leverage these insights to reassess resource utilization and devise innovative strategies for building competence.

The remainder of the paper is structured as follows: We first give an overview of the phenomenon of DT and the related management of DIs. We then present the current state of the literature on competence building in organizations, laying the theoretical and conceptual basis. Next, we describe our research approach. We then present our findings. Further, we discuss our findings and present a final model. We conclude with our contributions to theory and practice, future research opportunities, and limitations.

2   Theoretical and Conceptual Background

2.1   Digital Transformation Requires New Competencies

DT remains a key topic under investigation in the information systems (IS) research discipline (Hanelt et al., 2021, Vial, 2019). To manage DT successfully, an organization must create the conditions to manage new opportunities and risks of emerging digital technologies in the form of DIs (Hess and Barthel, 2017).

DIs can be conceptualized as innovative digital business concepts developed on top of an innovative digital solution (Wiesböck and Hess, 2020). This simplified model is

illustrated in Figure 1. The outcome can be distinguished into three categories: digital products and services, digital processes, and digital business models (Nambisan et al., 2017, Wiesböck and Hess, 2020). Organizations that manage the complex interplay of DIs and implement DIs in organizational and social structures can drive DT (Hund et al., 2021, Kohli and Melville, 2019, Nambisan et al., 2017, Yoo et al., 2012).
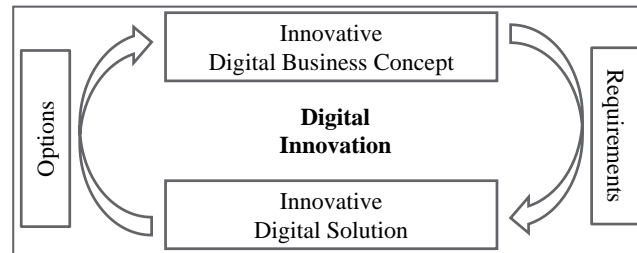

Figure 1. Simplified Model of Digital Innovation (Wiesböck and Hess, 2020 p. 77)

Research suggests several elements that should be in place to manage DIs and drive DT (Vial, 2019). Among these, competencies play an important role. More recently, digital competencies have been discussed in the literature (Khin and Ho, 2019, Osmundsen, 2020, Wiesböck and Hess, 2020). Khin and Ho (2019) refer to digital competencies when describing an organization's skillset, talent, and expertise in managing digital technologies. Other scholars refer to DT competencies as the skill set of an organization that can implement innovative digital business concepts to complement innovative digital solutions (Wiesböck and Hess, 2020). Despite the different terminology, scholars have shown that organizations need new competencies to manage DIs and drive DT (Khin and Ho, 2019, Osmundsen, 2020, Wiesböck and Hess, 2020).

IT competence is a multidimensional construct (Chan and Levallet, 2013, Wiesböck, 2018). The concept has greatly developed over the last few decades to address changing internal and external organizational environments (Cheney and Lyons, 1980, Lee et al., 1995, Lee et al., 2001). Despite that development, IT competence remains limited to utilizing IT-based resources. This enabled organizations to successfully manage organizational elements such as the technical infrastructure, the identification and implementation of new digital technology, the development of new software products, and digital process optimization (Chan and Levallet, 2013, Wiesböck, 2018).

While robust IT competence may suffice in developing, using, and implementing innovative digital solutions, the management and development of innovative digital business concepts may demand competencies that go beyond pure IT competence. New essential competencies were found by IS studies in the form of competencies that focus on idea conceptualization, exploration, and exploitation of digital technology (Transformation competence) and organizational elements that provide a fitting organizational environment to foster the facility of new competencies (Meta competence) (Bohrer, 2024, Osmundsen, 2020, Paul et al., 2024, Woodruffe, 1993).

2.2   Competence Building in Organizations

Competence-building in organizations is based on the concept of organizational learning (OL) (Alerasoul et al., 2022, Basten and Haamann, 2018). Competence building is critical for organizational survival and has attracted substantial conceptual and empirical investigation (Alerasoul et al., 2022). OL is the dynamic process that includes individuals' knowledge creation, exchange, and knowledge embedding in the organizational processes and structures (Alerasoul et al., 2022, Jerez-Gómez et al., 2019).

The fundamental premise of this concept lies in the resource-based view (Wernerfelt, 1984). From this perspective, competencies can be viewed as intangible resources that encompass the knowledge of an organization's employees. To generate value, resources must be utilized through organizational elements such as processes, roles, behaviors, and structures (Osmundsen, 2020, Wernerfelt, 1984).

Organizations utilize resource competencies through a systematic competence-building sequence and specific instruments (Basten and Haamann, 2018). Fundamentally, organizations have three competence-building options (Alerasoul et al., 2022, Osmundsen, 2020). They can develop competencies internally and externally or procure services and outsource them.

Traditional examples of internal competence-building approaches include training courses, project briefings, continuous education (Garvin, 1994, Jerez-Gómez et al., 2019), and fostering self- and peer learning (Osmundsen, 2020). The study by Basten and Haamann (2018) indicates that traditional competence-building approaches remain the most commonly applied in organizations. In contrast, instruments emphasizing experimentation to foster exploration and exploitation are used less frequently. Moreover, Osmundsen (2020) highlights that traditional competence-building can lead to frustration and limited learning outcomes.

These findings are particularly relevant in the context of DT, as they suggest that traditional OL approaches (Basten and Haamann, 2018, Garvin, 1994, Jerez-Gómez et al., 2019) may not be sufficient to build DT competence in organizations.

3   Methodology

3.1   Case Selection and Data Collection

To address our RQ, we conducted a qualitative single-case study with a media and technology company (*MediaCo*). We chose a single case study for a detailed examination of the sequences and instruments of DT competence building rather than focusing on more abstract insights and comparing different approaches based on several cases. In doing so, we were able to retrieve detailed insights on DT competence building, including related organizational structures, management systems, and practices.

We conducted two interview cycles with representatives of *MediaCo*. The first interview cycle took place from September 2022 to April 2023, and the second one from March 2024 to June 2024. For both interview cycles, we created a semi-structured interview guideline. We continuously adapted the interview guidelines to include emerging topics during the interviews and data analysis. The focus of the first interview cycle

was to gain a comprehensive understanding of the organization itself, relevant competencies for DT, management systems and organizational structure, and essential practices. The interview questions were mostly kept open-ended to allow for broader exploration. In the second interview cycle, we focused on the sequence of competence building and the instruments used. For this purpose, we developed a more focused interview guide with open- and closed-ended questions. In sum, we conducted 24 interviews with 21 different interview partners (IPs). We talked to the majority of IPs during the first interview cycle. For the second interview cycle, we carefully selected appropriate IPs again to clarify important remaining questions. We additionally added new IPs that we identified during the first interview cycle to gain additional insights and concrete examples. An overview of the IPs is illustrated in Table 1.

The interviews were conducted via video conferencing tools, recorded and transcribed. The average length of the interviews was 48 minutes. In addition to the interview data, we gathered several types of archival data as secondary data, comprising publicly available annual financial reports, official press releases, media reports, and organizational structure charts. For collecting internal documents, we relied on a central point of contact within the organization. The analysis of the documents was performed through document screening and categorizing important insights, which were added to present more details about the company characteristics, contextual information for the interviews, and the findings on the DT building sequence and instruments used.

Table 1. Overview of Interview Partners

#	Organizational role	Industry expertise
IP1	Chair of the Supervisory Board	20+ years
IP2	Member of the Supervisory Board	20+ years
IP3	Chief Executive Officer	20+ years
IP4	Chief Financial Officer	16 years
IP5	Chief Human Resources Officer	20+ years
IP6	Chief Digital Officer	16 years
IP7	Chief Product Officer	9 years
IP8	Head of Corporate Development	10 years
IP9	Member of the Executive Board	16 years
IP10	Managing Director Profitcenter Print	21 years
IP11	Editor-in-Chief Profitcenter Print	21 years
IP12	Managing Director Profitcenter Digital	9 years
IP13	Director Profitcenter Digital	10 years
IP14	Member of the Executive Board	20+ years
IP15	Managing Director Profitcenter Digital	20+ years
IP16	Editor-in-Chief Profitcenter Digital	20+ years
IP17	Senior HR Manager	20+ years
IP18	Managing Director Profitcenter Technology	20+ years
IP19	Managing Director Profitcenter Investments	9 years
IP20	Director Profitcenter Digital	12 years
IP21	Director Profitcenter Print	12 years

MediaCo is a family-owned German media organization founded in the early 1900s. With approximately 10,000 employees and over one billion in annual revenue, *MediaCo* counts among the largest media companies in Germany. It initially focused on traditional printing and became an international multimedia publishing house. On the way from a "media" to a "media and technology" company, *MediaCo* continuously embraced its openness towards change and new (digital) technologies. From 1991 to 2022, *MediaCo* underwent a transformative journey, responding to the rapidly changing environment driven by digital technologies. This entailed fundamental changes in organizational structure, competence development, and a strategic realignment of its product and service portfolio. As a result, *MediaCo* is today a global market player offering DIs based on emerging technologies such as artificial intelligence to its customers. Given its extensive experience with DT and organizational change, *MediaCo* is an ideal case for investigating the topic of competence building during DT.

3.2   Qualitative Content Analysis

For the content analysis of our interview data, we followed the guidelines of Corbin and Strauss (2014) and Mayring and Fenzl (2022) and applied an iterative coding cycle. Due to the fuzzy concept of competencies in academic literature (Le Deist and Winterton, 2005), we found it necessary to move back and forth between the collected data and literature during the coding process to secure a fit of our final data categorization from the comments made by our IPs, and existing concepts and theories. For systematic data analysis, we conducted the coding cycle based on the framework provided by Gioia et al. (2013). The coding cycle was performed by one researcher and discussed and reviewed by several researchers during research exchanges and detailed reviews.

First, we developed 1st-order codes based on the statements provided by our IPs. We remained close to our underlying data during this first cycle rather than being detached from literature insights. Sorting and summarizing the IP's statements resulted in 2nd-order codes. IP responses were clustered into three sequences (stages 1 to 3) that describe how and when DT competence building occurred at *MediaCo* in the given time period. Furthermore, we clustered responses by the types of competencies built and the specific instruments used. For example, software development competencies and their related building instruments were categorized under technical competencies, while cogitative skills and skills development were summarized under transformative competencies. During this process, we utilized existing literature on the concepts of competencies and capabilities to enable a solid categorization. This enabled us to connect knowledge from current literature with empirical insights (Dubois and Gadde, 2002).

Ultimately, by iterating through the coding cycles, we formed six aggregated dimensions. For the competence-building sequence, we formed three aggregated dimensions, which we present in detail in Chapter 4.1 and summarize in Figure 2. For the competence-building instruments, we formed three additional aggregated dimensions, which are presented in detail in Chapter 4.2 and summarized in Table 2.

4 Findings

4.1 MediaCo's Competence Building Sequence

In the following, we present the three-stage competence-building sequence for *MediaCo's* DT. This includes the major milestones of *MediaCo's* DT journey, which started around 1991 and was continued by the time of our interviews. An overview of the three stages of *MediaCo's* DT is presented in Figure 2. We then present our findings on the instruments used by MediaCo to build DT Competence.

Figure 2. The Sequence of DT Competence Building by MediaCo

Stage 1: Expand IT Competence. Stage 1 of *MediaCo's* DT journey was characterized by creating a decentral structure to foster decentral competence building and a focus on digital process innovation.

At the start of the DT journey, *MediaCo* focused on IT competence within its central IT department. The IT department was responsible for maintaining the IT infrastructure, providing technical support, and primarily focusing on digital process innovation (IP18). The central IT was perceived as *"the IT backbone"* (IP20) of the company, and its secret for suggest was described by IP18 as follows: *"IT is successful when understanding technology and processes, and workflows."* (IP18).

Shortly after *MediaCo's* DT journey started, the company massively changed its centralized organizational structure. Its restructuring resulted in a highly decentralized organization, split into different profit centers that were perceived as individual businesses. With that, the organization split up its IT competence by giving each profit center its own decentral IT unit: *"so each profit center received its own IT and responsibility for its own IT."* (IP20). Thus, the central IT department could then fully focus on its maintenance and support activities. At the same time, the decentralized IT units primarily generated value by developing new digital products (IP14, IP18, IP20). Overall, the decentralization efforts lead to more ownership and faster decision-making.

Stage 2: Implement Meta Competence. Stage 2 of *MediaCo's* DT journey was characterized by significant changes in the organization's processes, top management structure, and cultural aspects.

During Stage 2, *MediaCo* focused on measures to reduce the amount and complexity of its processes to embrace flexibility (IP6, IP16, IP19) and to "[…] *develop digital products and services everywhere"* (IP8). Additionally, *MediaCo* recognized that it must involve its operational workforce along its DT journey and achieve a workforce that can deal with digital technologies and change (IP2, IP3, IP6). One of the IPs noted the importance of having the right employee and a diverse team and explained: *"I need a mixed team that can bring both an innovative, forward-looking approach and top-notch expertise to make technological progress. I also a team that is happy to be led from above, by those with vision."* (IP6). This emphasized the goal of *MediaCo* during this stage was to *"abolition the silo thinkers [...] with walls in their heads"* (IP18).

Additional changes occurred in the organizational and top management structure of *MediaCo*. The company established a new digital unit and introduced new management roles, such as the Chief Digital Officer and the Chief Product Officer (IP1, IP18). With this, *MediaCo "[...] changed the responsibilities and the content of the board."* (IP5).

Moreover, responsibilities were newly allocated. The goal was to create clear responsibilities among decision-makers in the decentralized profit centers and to *"[...] drive on the decentralized entrepreneurship of the individual businesses."* (IP12).

Stage 3: Explore and Foster Transformation Competence. Stage 3 of *MediaCo's* DT journey was characterized by embracing emergent idea generation and developing new competencies to manage DIs.

In Stage 3, *MediaCo* embraced the emergent idea generation and digital product development on the operational level (IP13). IP5 explained: *"[...] innovative product ideas are in people's heads that don't not fancy titles"* (IP5). To achieve its goal, *MediaCo* began investing in the competence-building of its workforce. The learning and development (L&D) department was especially involved. IP5 noted: *"We in L&D also see it as a driver of transformation, we offer very specific training measures."* (IP5).

The investments in competence development were based on the idea that developing new DIs requires a new set of competencies (IP5, IP18, IP19). IP19 explained that *"[...] we appreciate employees who can think outside the box"* (IP19) […] *"people who understand business and business models, and can translate these into realizable possibilities [...], regardless of which technology used."* (IP18).

At the beginning of 2022, our findings indicate that *MediaCo* shifted its strategic focus toward increased centralization in selected areas while preserving decentralized entrepreneurship within its profit centers (IP3, IP6). This adjustment established a centralized product platform and a unified organizational identity. Consequently, the digital business units were dissolved and integrated into other segments (IP6).

4.2 Competence Building Instruments Used by MediaCo

Building IT Competence. *MediaCo's* IT competence-building approaches encompass traditional classroom training, self-directed learning via books, articles, and videos on internal digital platforms, and web-based training with external service providers (IP5,

IP10, IP17). Additionally, targeted courses led by experienced lecturers are provided to develop "media technologists," with coding camps (IP5) and hackathons (IP5, IP8).

The most extensive IT competence-building initiative identified was the "digital degree," which focuses on learning and applying new digital technologies (IP17). Through a series of modules, including coding, machine learning, and AI power user classes, participants systematically acquire the skills to utilize emerging digital technologies and develop digital solutions (IP5, IP17). Successful course graduates receive an internal certificate to incentivize participation.

The competence-building programs are conceptualized around a two-step plan devised by the internal learning and development team (IP5, IP17). The responsible IPs explained: *"We do a two-step plan [...] we want to establish a general technology literacy and teach the basics [...] then everyone can try it out and discover for themselves, how to use it [...] we established sessions with a very high practical relevance."* (IP5).

Building Meta Competence. Our investigation into meta competencies building revealed that the measures implemented during the DT journey contributed to a more agile and flexible organization. IP9 explained: *"A significant part of our strengths consists of being adaptable."* (IP9). That involves, i.e., processes, structures, hierarchies, and cultural aspects.

To achieve higher agility and flexibility throughout the company, *MediaCo* began using digital technologies to digitalize and optimize processes (IP6). Furthermore, we observed massive changes in the organizational structures. Through the profit center structure, *MediaCo* achieved something they call *"entrepreneurial flexibility"* (IP9). This was mainly maintained by the balancing of *"centralization and decentralization efforts [...] which is a process of continuous breathing"* (IP9). Moreover, *MediaCo* introduced new management roles along the digital journey (IP1) and changed responsibilities and communication channels (IP19).

Creating organizational flexibility also relates to the cultural aspects of an organization. Specifically, we noticed operational employee involvement was essential for *MediaCo's* DT. One IP clarified that *MediaCo* must involve employees along the journey in every decision: *"You can think of the most beautiful tools, but if it is not accepted by the employees in the end, it will not work."* (IP6).

Moreover, IP9 recognized that *MediaCo* *"makes decisions very quickly"* (IP9) and that *"what makes the company special and why it is so successful in many ways on the road to digitization is the speed of the decision-making processes"* (IP9).

Building Transformation Competence. In stage 3 of *MediaCo's* DT, the organization recognized the need for new competence-building measures to develop and manage DIs. In response, the human resources department collaborated with the digital units, the IT department, and the board of directors to devise innovative approaches for developing DT competence.

That resulted in measures to *"overcoming hurdles and allowing experimentation [...] adapt the way of working, just as one does with generative artificial intelligence* (IP5). Moreover, IP6 explained: *"You can do more by providing your employees with a*

framework. Use some tools and some not. You try to motivate them, but you try not to force anything on them [...] people who are motivated and open and keen to learn will do so anyway, and those who don't will probably forget the training in five minutes." (IP6). In conclusion, to develop transformation competencies, *MediaCo* shifted from traditional classroom training to time-efficient sessions, fostering experimentation emphasizing guidance and flexibility over rigid, step-by-step instructions (IP5, IP6, IP17).

A novel competence-building approach we identified was the organization of a digital product development event (IP5). Employees were incentivized through a clear objective, prizes, and dedicated resource allocation, which provided sufficient time for developing new digital products. Operating under flexible guidelines that encouraged experimentation, the event generated 16 customer-oriented digital solutions, several of which were later refined and introduced to customers.

Another approach for building transformation competence involved regularly featuring keynote speakers. These speakers presented case studies on various topics, enabling participants to collaborate closely and work from an initial digital product or business model idea. In group settings, they further developed these ideas in alignment with the theoretical frameworks discussed (IP17).

Our analysis reveals a diverse set of competence-building instruments to build DT competencies. A summary of the identified instruments is presented in Table 2.

Table 2. Summary of Competence-Building Instruments Used by MediaCo

Competence category	Competence-building instruments of MediaCo	
Transformation competence	- Guidance frameworks - Abolish strict rulesets - Experimentational learning	- Product development events - Keynotes
Meta competence	- Agile structures - Entrepreneurial flexibility - New management roles	- Short decision-making processes -Employee-involvement
IT competence	- Classroom training - Self-learning content - Web-based learnings	- Hackathons - Coding camps - Digital degree

5   Discussion

MediaCo's competence-building process reveals a three-stage sequence emphasizing that organizations in today's world require a diverse set of competence-building instruments. This traditionally involves competence building for individuals (Basten and Haamann, 2018, Garvin, 1994, Jerez-Gómez et al., 2019, Osmundsen, 2020). Moreover, it extends to an organizational level, including changes to organizational processes and structures to provide an agile environment to foster competence acquisition and utilization (Alerasoul et al., 2022, Basten and Haamann, 2018).

Our findings show that modern competence building requires an extension of traditional classroom training. Developing new competencies requires less strict rules but

thought-out guidance that fosters experimentational learning (Garvin, 1994) and self-learning based on employees' intrinsic motivation. With that and the right organizational environment, an organization can eliminate frustration among learners and limited learning outcomes (Osmundsen, 2020).

To develop, implement, and use DIs, organizations need to extend their IT competence with transformation and meta competence. Each of these competence categories is built with instruments that inherit unique characteristics, as presented in Figure 3.
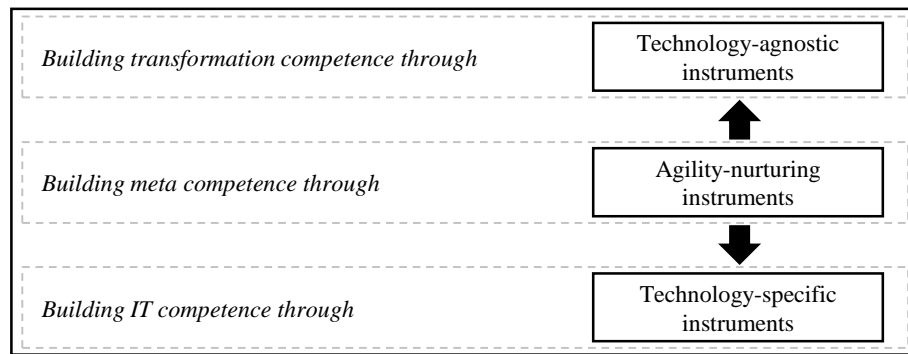
Building transformation competence through	Technology-agnostic instruments
Building meta competence through	Agility-nurturing instruments
Building IT competence through	Technology-specific instruments

Figure 3. Digital Transformation Competence Building Model

Based on our findings, IT competence is built with instruments that focus on developing technical skills based on a certain technology (Chan and Levallet, 2013, Wiesböck, 2018). We define this characteristic of IT competence-building instruments as *technology-specific instruments*. In contrast, the instruments used for building transformation competence are less technology-specific. Their primary aim is to develop and conceptualize innovative digital business solutions on top of emerging technologies, irrespective of the specific technology used (Bohrer, 2024, Paul et al., 2024). We define this characteristic of transformation competence-building instruments as *technology-agnostic instruments*. The difference between technology-specific and technology-agnostic instruments highlights that traditional competence building, mostly used for IT competence, may be insufficient for building transformation competence, and thus DT competencies (Basten and Haamann, 2018, Osmundsen, 2020). This emphasizes the need for new instruments and strategies, that also differ for each competency category. (Osmundsen, 2020).

Moreover, we find that meta competence remains essential for DT competence building. DT competence building must occur in a fitting organizational environment that includes appropriate processes, structures, and cultural elements. Competence-building instruments for meta competence occur in the form of what we define as *agility-nurturing instruments*. Notably, we find that meta competence can positively and negatively influence the development of both IT and transformation competence rather than being a prerequisite for their existence in an organization.

Overall, we find a great mix of individual and organizational competencies and their corresponding instruments, highlighting the complexity of this topic and the importance of involving different roles, departments, and hierarchical levels.

Keeping our final model at an abstract level, we argue that it can be applied in various contexts and to organizations in other industries. Competence building is a fundamental, cross-industry organizational process. Similar to the concept of dynamic capabilities (Konopik et al., 2022, Teece, 2007). Organizations in other industries that are impacted by DT face similar opportunities and challenges (Hess et al., 2016, Oludapo et al., 2024). Our concrete insights might, therefore, be helpful in similar or slightly adjusted ways for different circumstances. Nevertheless, competencies alone are not the only factors that must be considered for the management of DIs and DT. Besides competencies, management systems and governance structures (Hess et al., 2016), or external market factors, must also be considered.

6   Conclusion

Organizations in DT are constantly changing (Vial, 2019), and competencies inevitably change as well. The theoretical contributions to this study are threefold. First, we extend the DT literature and provide a new empirical case that demonstrates the sequence of competence building for DT and the management of DIs—a topic that remains underrepresented IS research (Osmundsen, 2020, Butschan et al., 2019). Second, we present concrete competence-building instruments that extend beyond traditional classroom trainings towards new innovative approaches. Third, we present and discuss three different characteristics underlying the competence-building instruments. This emphasizes the complexity of resource acquisition and utilization in the context of DT and beyond. Our final model can help categorize current and future findings on competence building for DT and enable future investigations by providing a framework that highlights unique characteristics, supporting further discussions about how, under which responsibility, and in what ways DT competence can be developed in an organization.

Practitioners can leverage these insights to reassess human resource utilization and develop innovative strategies for competence building. In particular, practitioners can learn from the presented sequence of competence building and apply it similarly in their respective organizations. Moreover, managers can consider the characteristics of competence-building instruments to develop new, innovative instruments to foster competence development across different organizational departments and hierarchies.

This study is not without limitations. Competence building can manifest differently or encounter different challenges in other industries. However, the insights of the IPs likely reflect general managerial and organizational principles, not just media-specific logic. To enhance the findings of this study, future research should examine competence-building in other industries to compare the findings and explore the interplay of internal, external, and hybrid competence-building approaches. Moreover, interpreting the study's findings through different theoretical lenses or perspectives, such as the bimodal-IT view, could uncover new insights into competence building and allocation in organizations (Horlach et al., 2017, Wang et al., 2025).

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