Debating Digital Innovation: A Literature Review on Realizing Value from Digital Innovation

Julian Frey¹, Friedrich Holotiuk², and Daniel Beimborn¹

¹ University of Bamberg, Chair of Information Systems Management, Bamberg, Germany ² Frankfurt School of Finance & Management, Frankfurt, Germany {julian.frey, daniel.beimborn}@uni-bamberg.de, f.holotiuk@fs.de

Abstract. Digital innovation has developed into an intensely discussed area of research in the information systems field. While there is much research that focuses on the description of the phenomenon, the evidence for value creation that digital innovation can enable for organizations is less synthesized and visible. With this in mind, we conduct a literature review to identify innovations based on information technology and to answer the research question of where digital innovation can create economic value for organizations. Our synthesis depicts existing value dimensions of digital innovation with the help of five value loci. Moreover, we derive a set of white spots and research directions that surface three potential avenues for future research. We contribute to digital innovation value literature and (2) propose avenues for future digital innovation value research.

Keywords: Digital innovation, business value, literature review

1 Introduction

Digital innovation has emerged as a significant and dynamic area of research and debate in the information systems (IS) field and other domains such as management studies in recent years. Publications increased fourfold from 2011 (101) to 2018 (450)¹. In the digital age [1], the impact of digital technologies has broadened from traditional IS research to all spheres of the broader business community up to the world of economics touching the lives of people around the globe. More notably, the rise of digital technologies has arrived at the doorstep of innovation management itself [2] and changed the very nature of how innovation takes place in today's world. Although digital innovation is a widely discussed topic [2-6] and there is extensive research focusing on its description [3], the evidence for the creation of economic value and profitable business models that digital innovation seeks to enable are less synthesized and visible in IS literature [7, 8]. Moreover, also in practice calls for a better understanding of the value of digital innovation demand further research as

¹ Digital innovation publications in leading academic journals, per year, from Web of Science core collection, search on topic, document type: article.

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many organizations feel not prepared for digital innovations [9] and particularly are unclear about the potentials for value creation [10]. It is widely acknowledged that traditional assumptions of value creation from innovations are challenged in the context of *digital* innovation and new theory development and conceptualizations seem both needed and promising to advance the topic of value creation [11]. There are calls for further research on value creation and value capture as "the consequences of digital technology are more prominent than ever" [12, p. 99]. This is why our research focuses on this vital part of digital innovation value: *where does digital innovation create economic value for organizations?* We will contribute to digital innovation value with the help of a framework that incorporates different loci of digital innovation value and (2) derive avenues for future research.

The structure of this paper comprises four main sections: the theoretical backdrop to this research, the research method, the main analysis deriving avenues for future research and finally, the paper ends with a summarizing conclusion.

2 Theoretical Background

To be able to better understand the potential implications that digital innovation can have on a firm's performance we introduce the two main concepts guiding this research.

2.1 Digital Innovation

Research on the impact of IS-based innovation on organizations started in the 1990s; management research started to acknowledge the elevated influence of IS on innovation and, as a consequence, on firm success or failure [8]. In the digital age, this insight appears more pronounced as digital technologies increasingly have an impact on innovation. Nambisan [13, p. 216] attests that "the nature of innovation has undergone considerable change in most industries" to a more connected, collaborative, and distributed phenomenon processed by a wide network of stakeholders. Moreover, there is a continued urge to bring down cost and time of innovation, i.e., to increase the efficiency of innovation processes. This leads to increased efforts to streamline innovation processes and has further elevated the role of technology in innovation management [13].

Digital innovation is understood as "the carrying out of new combinations of digital and physical components to produce novel products" [4, p. 725] or, more broadly, as "a product, process, or business model that is perceived as new, requires some significant changes on the part of adopters, and is embodied in or enabled by IT" [6, p. 330], which matches with current definitions of 'innovation', in general, such as "the creation and discovery of new ideas, practices, processes, products or services" [14, p. 4]. Definitions of digital innovation emphasize physical artifacts, the combination of digital and physical components [4], IT as embodiment or enabler [6], or change through creation [2]. Most recently, Henfridsson et al. emphasize "recombination in design and recombination in use" in their value spaces framework [12]. For our work, we draw on Fichman [6] and define digital innovation as all products, processes, or business models emerging within or between organizations that are based on technology and trigger or enable value.

2.2 Value Creation

Our research focuses on understanding in which way and where digital innovation creates value for organizations. Here, value refers to relative utility and a construct of monetary worth. We acknowledge that "'value' is an elusive and multi-dimensional concept that greatly varies with time, place and relevant customers, users or citizens" [15, p. 15]. Based on this, value creation in an organizational context is based on two value dimensions: use value and exchange value [16]. Use value refers to the user's subjective perceived performance improvement of a product or service. Exchange value refers to the positive differential between producers cost and the price at which the product or service is exchanged (selling price). Drawing on both dimensions, Lepak et al. define value creation as the "relative amount of value that is subjectively realized by a target user and that this subjective value realization must at least translate into the user's willingness to exchange a monetary amount for the value received."[17, p. 182]. Note that the target user can be an individual, an organization or society. For our research, we focus on economic value and examine all value targeted at individuals, organizations, customers, and consumers [17]. We search for technology affordances as proxy variable, as we seek to identify the value that digital innovation has for corporations [18]. However, we therefore exclude public authorities and the greater value for society from our analysis.

IT value research has shown that value creation often is a very indirect and ambiguous process. In this sense, we look at digital innovation both in the form of *cause* and *effect* of value creation. Studies examining the causes of digital innovation in an organizational context (e.g., [19]) look at different factors that facilitate digital innovation (i.e., focus on the relationship between investment into or utilization of IT and creation of innovation). Studies focusing on the effects of digital innovation in an organizational context (e.g., [20]) look at different performance-improving outcomes enabled by digital innovation. Both strands of research provide important contributions to digital innovation value research and thus belong to the scope of our study.

Most IS literature refers to two sets of factors in order to assess the value of digital innovations. Firstly, scholars apply 'hard' factors such as patent numbers or number of new products/services/market segments or portion of revenue created from new product/services as performance indicators. Secondly, researchers use proxy measures such as R&D fund allocation or market changes to investment decisions. However, these measures lack tangibility in day-to-day business [21-23]. Sedera et al. developed more practical indicators for innovation performance in IT-related environments (e.g., swift technology-supported response to market and customer needs, experimentation and trial with IT to develop new products).

As a final aspect we need to consider that value creation and value capture are different with digital innovation as options to innovate are broader through "recombination in use" and "recombination in design" [12]. These characteristics make it harder to identify where innovation comes from and therefore support our idea to search for digital innovation value. To understand how a company can increase their value and build a valid business model in form of channeling value paths we need to investigate in what form and where value can arise.

3 Research Methodology

To answer our research question, we chose an in-depth systematic literature review [24, 25] and followed the guidelines of Templier and Paré [26] and vom Brocke et al. [27]. Following the five-phased framework for literature reviewing [27] and the taxonomy of literature reviews based on Cooper [28] we first defined the scope of the review: our literature review (a) focuses on outcomes, (b) aims for integration, (c) assumes a neutral perspective, (d) covers the literature exhaustively within the given scope of our search, and (e) gears towards an audience composed of specialized and general scholars as well as practitioners. In the second phase, we conceptualized the fields of our review by mapping and collecting key sources for the concepts of digital innovation and value creation. The conceptualization helped us to get an overview about the existing research, potential unanswered questions, and search terms.

Thirdly, we conducted the literature search. We searched the Web of Science database for journal articles published between 2002 – considered to be the start of the digital age [1] – up until May 2019. We excluded all other sources such as editorial material, book reviews, and letters or news items. In addition, we searched the AIS electronic library for conference papers and additional journal publications published between 2015 and May 2019. To ensure a high quality of the publications, we chose highly rated journals (VHB Jourqual3 A+ to B) from the IS and management science areas including the AIS "basket of eight" IS journals. This creates a holistic view on digital innovation by adding interdisciplinarity and more depth to the search outcome [29]. In both databases, we searched for "digital innovat*", "product innovat*, "process innovat*" and "business model innovat*"; in the Web of Science we searched in the "topic" field, in the AIS electronic library in the fields "title", "abstract" and "subject". We explicitly excluded "value" from the search terms to avoid missing relevant papers that do not explicitly mention value. Performing our search, we found an initial pool of 324 publications that we put into our selection funnel. In a first step, we assessed these publications based on screening their title, keywords and abstract. All candidates that included digital or digitally enabled innovation as main concepts in an organizational context passed on to stage two of the selection process and were included in the intermediate pool (n=117). We excluded all other sources that did not mention these terms as main concepts or did only touch upon digital innovation in side remarks. In a second step, we screened the full texts of these publications. We excluded all papers that concentrated on theory or specialized on one specific industry without general implications for digital innovation. All publications that included concrete underlying digital innovations were then considered in our final pool and thus in our literature review $(n = 60 \text{ papers})^2$. Due to the iterative nature of the review, we identified some promising sources after screening the intermediate pool through backward or forward searches and included them in the final pool.

In the fourth phase, we conducted the analysis and synthesis of the final pool. We analyzed all papers by summarizing them in accordance to a self-established guideline. The guideline contained categories such as (a) the content of the paper in general, (b) the underlying digital technology, (c) the discussion of value creation, and (d) other relevant concepts mentioned in the source, amongst others. For (c) we built upon work by Sedera et al. by using their indicators to help identify digital innovation value while screening the literature and provide us with an initial idea where value can be created.

Lastly, we developed a three-stream research agenda (see 4.2).

4 Findings

We now focus on the detailed findings of the literature review. First, we present the findings of extant research on digital innovation value with the help of a guiding framework. Second, we discuss the resulting potential for future research.

4.1 Extant research on digital innovation value

We find that IT in general and specific enabling technologies in particular are the basis for all digital innovations and therefore, as outlined, for value creation. Looking at the underlying technologies, we can identify which technologies are particularly relevant to create digital innovation value. For instance, technologies such as analytics and business intelligence [30, p. 8], augmented reality [31, 32], cloud computing [33], CRM systems [19], digital control systems [34], digital platforms [30, 35], digital prototyping technologies [36], project management systems [37], RFID [38], social media [39] and 3D printing [2] are some common technological foundations for digital innovation value. We uncover that digital innovation succeeds effectively in organizations when an orchestrated integration of technology in the work system and a collective consideration of the social and technical systems within an organization take place [40, 41].

The interconnectedness of each area with technology is therefore crucial; digital technology plays a vital role in the successful integration of digital innovations in firms. In line with this, it is crucial for value creation from digital innovation to realign business level strategies and technology [42]. Additionally, alignment is perceived as crucial "to help in achieving and sustaining competitive advantage on the back of IT" and "goes to the very essence of the strategic value of IT in organizations and develops a link between business and IT-related issues" [43, p. 12].

Adopting Melville et al.'s IT business value model, we develop a framework for digital innovation value [44] (Figure 1). We label the five identified categories as *digital*

² A list with details on these papers can be provided upon request

innovation value loci, as an adapted version of Davern and Kauffman's [45, p. 131] value loci for IT business value.

In the literature review, we identified five digital innovation loci: *organizational knowledge, product/service, human capital, collaboration* and *competition*. Within each locus, we identified disparate approaches that govern the theoretical views and practical tensions that organizations need to face in creating value from digital innovation; we name these approaches 'perspectives'. These perspectives help to structure the research existing within each locus and facilitate addressing the respective loci for researchers. In addition, we distinguish the realized digital innovation value at the inter-, intra- and supraorganizational level. As they all focus on factors mainly taking place within an organization, we assigned *organizational knowledge, product/service* and *human capital* to the intraorganizational level. As competition and *collaboration* inherently imply outside actors, these two loci were assigned to the interorganization-al level.



Figure 1. Digital innovation value framework.

We could not identify appropriate loci and perspectives for the supraorganizational level as we only identified one relevant result at all for this level. In addition, we assume that the alignment of the intraorganizational loci has a direct impact on the interorganizational loci, as *organizational knowledge*, *human capital* and *product/service* all have an impact on a firm's ability to compete and collaborate with other firms. In the following, we will present the findings of the literature review locus by locus.

Table 1 shows the resulting systemization of digital innovation value literature according to value loci and perspectives, each with concrete value dimensions drawn from the publications. The number of publications by locus is shown in brackets.

Table 1. Digital innovation value loci, perspectives and value dimensions

Level	Value locus	Description	Perspective	Value dimensions (e.g.)
Intraorganiza- tional	Organiza-	Research that analyzes the usage	Competency	Organizational agility, transpar-
	tional	of internal knowledge and skills to make an organization more		ency
	Knowledge			Accidental innovation, innovation
	(14 papers)	effective	Process	productivity, sustainability
	Product/	Research that examines positive	Product	Frugality austamization
	Service	contributions of digital innovation	Functionality	Fruganty, customization

	(13 papers)	on the value of the prod- uct/service offerings of a compa- ny.	User	Consumer perceived value, willingness to pay
	Human Capital (7 papers)	Research identifying ramifications of digital innovation that enhance the work quality for employees or the ease of HR management within organizations.	Empowerment	Employee empowerment, re- duced path dependence
			Structural	Organizational identity, team work performance
Interorganizational	Collabora- tion (13 papers)	Research that concentrates on the positive impact of digital innovation for firms in the com- petitive environment.	Networked	User contribution
			Pooled	External knowledge absorption, collaboration
	Competi- tion (13 papers)	Research that focuses on effects of digital innovation, on friendly interactions within or across supply chains, markets, ecosys- tems.	Holistic	Resource efficiency, improvisa- tional capabilities, mobilizability
			Start-Up	Customer adoption, user base scaling

First, in the *organizational knowledge* locus, most of the research focuses on explicit knowledge in contrast to tacit knowledge. Some research investigates the topic from a competency perspective that includes tools or other forms of knowledge-enhancing objects. These studies show that organizational competencies lead to digital innovation and thus create value, e.g., in form of improved organizational agility [46], with customer responsiveness, operational flexibility, and strategic flexibility being used as typical indicators. Organizational agility in turn leads to higher firm performance (measured by improved market share, cost, productivity, profitability, or overall financial performance, compared to competitors.). By contrast, other studies approach this locus from a process perspective and provide insights into the elevating impact of digital innovation on processes [36, 47] or overall innovation productivity [48]). In the case of overall innovation productivity, the authors find that the higher a firm's digital-centric innovation the higher the level of overall innovation efficiency (measured in number of patents per inventor).

Second, the *product/service* locus can be categorized into two disparate perspectives. One set of research contributes to digital innovation value from a product or service functionality perspective. Here, digital innovation can have an impact by, e.g., enhancing the innovativeness of digital platforms [23]. Amongst other things, the factors measured in this study include the response time to market shifts and customer shifts. The other group of articles approaches the value of digital innovation for products and services from a user perspective. Here, digital innovation value is expressed by, e.g., improving user-perceived value measured in the form of positive consumer evaluations [49] or in form of increased efficiency and effectiveness of product distribution [50]. More precisely, the authors highlight that an effective community environment that welcomes different forms of user participation, such as blog creation or content moderation, increases the customers' willingness to pay. The authors measure willingness to pay by looking at the effect of content consumption, content organization and, community activity on the likelihood of consumers to purchase a paid subscription. Both provide valuable insights into the understanding of the effect of digital innovation on products and services.

The last intraorganizational locus, *human capital*, is characterized by research contributions emphasizing employee empowerment. In this locus we find value, e.g., in form of reduced path dependence for decision makers [51]. By contrast, other research suggests value in structural implications thanks to digital innovation. For example, digital innovation enables new, distributed forms of teamwork. Here, value can arise through reduced coordination costs and faster and easier knowledge sharing [52].

Likewise, to the intraorganizational loci, the interorganizational loci indicate antagonistic perspectives. First, in the *competition* locus, research can be distinguished in contributions that focus on challenges for start-ups and new market entrants (startup perspective) and inputs that focus on competitive challenges for incumbent firms or general competitive structures (holistic perspective). For instance, digital innovation value can arise for incumbent firms by positively affecting a firm's market performance through providing the options for "fast-or-right" (quality-focused) product launches [14, 53]. To be able to innovate fast in this case is a source for competitive advantage. On the other hand, value through digital innovation for start-ups emerges, e.g., by providing flexibility and speed to scale-up [33]. For example, Huang et al. identify data-driven operations, instant releases and swift transformation as enablers of user base growth. In particular, a higher user base enables a wide breadth of monetizing options and the collected data helps to manage market uncertainty and market risk for start-ups. This is interesting to see, as it follows an overarching debate in the IS field on whether new or incumbent firms prevail when a new technology emerges [54]. Second, in the *collaboration* locus we can find different perspectives that help structure the literature. More precisely, we can apply the categorization of interorganizational systems collaboration and in that way identify two different perspectives to collaboration [55, p. 287]. A larger set of research can be attributed to analyze networked interorganizational systems that for instance focus on digital platforms. From this perspective, digital innovation can create value by, e.g., promoting user contribution through knowledge seeding [56]. In particular, the authors identify that sponsoring knowledge communities results in higher user knowledge contribution. Higher user knowledge contribution is beneficial as companies increasingly "aim to harness the collective wisdom of the crowd" [56, p. 235] for new product development. A second stack of articles analyzes digital innovation in pooled interorganizational systems, e.g., organizations' external knowledge search and sharing. For example, digital innovation creates value by allowing organizations for more effective absorption of knowledge from suppliers, research institutes, or competitors to achieve process innovations (measured in cost reduction) [57].

4.2 Research Avenues

Based on our findings, we are able to identify white spots in the existing literature. In addition, we summarize those research directions already proposed by the literature. White spots and research directions. We identify that literature for some loci is scarce or some levels of analysis seem to be mainly untouched so far. This allows us to discover white spots and potentially derive guiding avenues for future research.

Concretely, we identify two less-researched areas. Firstly, the analysis shows that the human capital locus seems less researched than other loci. We find only a small number of research contributions. On the contrary, HR researchers acknowledge the possibilities and challenges that digital technologies bring to HR management [58, 59]. Moreover, they identify the need for further research in electronic HR (eHR) management, especially in the two areas of efficiency versus effectiveness in human resources management and a transaction-based versus relationship-oriented approach to employee management [59]. Secondly, the supraorganizational level is less researched. With the supraorganizational level, we refer to all research that involves more than a set of organizations but also includes other non-market participating actors. In our research pool, we find only one work to be relevant for this level. The work by Hinings et al. analyzes how institutional factors can possibly affect digital innovation value. More precisely, they suggest applying institutional theories as they "may be useful ways of grasping how organizations cope with" the challenges to "adopt novel digital institutional arrangements that are radical and transformational" [60, p. 59]. Their research provides a contribution to the possible impact of institutional factors and the influence of other stakeholders on an organization concerning digital innovation value. More research in this field appears to be valuable to enhance organizations' understanding about the ramifications other stakeholders can have toward digital innovation value.

In addition to the identified white spots, the literature itself does already provide some direction for further research. Most commonly, there are calls for practice testing and testing the generalizability of the researched findings. This shows the juvenility and topicality of digital innovation value in the research area (e.g., [19, 61, 62]). In addition, many contributions suggest researching the technology application in other contexts or within the interconnectedness of the ecosystem (e.g., [37, 39]). In particular, the topic of digital platforms seems to be a promising research field. For instance, there are calls for investigating digital platforms "as a shared investment and a novel network resource to co-create and co-produce new information-based services " [61, p. 491] and for investigating "how tension and contradiction shape platform thinking" [63, p. 4774]. On a more general note, Nambisan calls for further research of IT as an operant resource or value trigger [13].

Overall, from all these white spots and proposed directions for further research, we can derive three avenues for future research in digital innovation value (Table 2).

L	Directions	Potential Research Questions	
A1. Deepen	A1a. Practical confirmation	Does practical testing confirm our findings? Can we quantitatively confirm this theory in practice? Does the theory hold the test of a qualitative analysis in practice? How do we measure the value contri- bution?	
Existing Research	A1b. Generali- zability	Do the findings hold true in other settings? How can the same digital innovation trigger value in a related context?	
	A1c. eHR	How can digital innovations make HR management more effective? How can digital innovations make HR management more efficient?	

Table 2. Avenues for future research

A2. Integrative research	A2. Intra/inter- organizational relationship	How do the intraorganizational factors affect the interorganizational level? Do organizational knowledge competencies and processes influence the competition capabilities to improve value creation?
A3. Expansive	A3a. Supra- organizational impact factors	Which institutional factors impact firms' digital innovation perfor- mance? How can firms react to institutional changes with regards to digital innovation?
research	A3b. Societal value	In which form does value emanate from digital innovation for society? How can societal value improve firms' performance?

Avenue 1 (A1). We find that many research contributions call for a more thorough analysis of digital innovation concerning value creation. More specifically, we derive three streams as fruitful in terms of deepening existing research. First, we need more empirical evidence for several findings that have used qualitative, single-instance studies. Also, there is a need for further research regarding metrics of digital innovation value. Second, some extant research needs to be broadened to allow for generalizability. Here, research into similar technologies and loci seems adequate to identify whether the derived conclusions also proof valid under different circumstances or in different environments. Further research in the field of digital innovation value can thereby manifest achieved findings and promote the role of digital innovation as value trigger for organizations. Third, the analysis of white spots implies that there is insufficient research within the *human capital* locus, particularly in the field of eHR.

Avenue 2 (A2). Further, there is a need for a more integrative method to research digital innovation value. The focus of most research lies on one particular locus, however, theoretical research suggests focusing on the interrelations between single or several loci to understand the mechanisms of value creation within organizations better [42, 43]. In that way, the effect of the intraorganizational value loci on the two interorganizational loci of *competition* and *collaboration* requires a more detailed analysis. For instance, we assume that the competencies and processes researched in the *organizational knowledge* locus affect the firm's ability to compete or collaborate with other market players or network participants. Research that analyzes both levels holistically will be valuable in terms of deepening our understanding of how their interconnectedness influences the creation and capture of digital innovation value.

Avenue 3 (A3). Finally, there is an opportunity to expand research beyond the interorganizational level, to enforce research in the supraorganizational level of analysis. Research on this level is scarce. Hinings et al. provide an interesting starting point by looking at digital innovation from an institutional perspective [60]. They hint the potential impacts radical institutional changes can have on digital innovation within organizations and how organizations can potentially cope with these changes. The boundaries of the digital innovation value framework exclude factors that affect stakeholders outside the organizational world. Although this has not been part of this research, it is still likely that societal value that arises from digital innovation still has an impact on firm performance through possible reputation or sustainability benefits. First papers that discuss digital innovation's impact on government [64] or society [30] provide a basis for more detailed research. We therefore propose to conduct further research in this field as it allows examining the reinforcing links with other actors in the larger ecosystem organizations interact with and its ramifications for digital innovation value.

5 Conclusion

Referring back to the beginning of this research, (1) we discover a variety of value dimensions created through digital innovation and, (2) derive three avenues for future research from our loci-based literature analysis. Thus, our research holds contributions for both researchers and managers.

Firstly, we contribute to theory by demonstrating a variety of value that digital innovation can create and offering different perspectives on how to approach the distinct value loci. Secondly, our review shows that digital innovation value can take on various forms that cannot or can only be measured indirectly with financial data. We thereby append the existing literature that discusses evaluation metrics [23]. Thirdly, with our value loci framework we have contributed to calls for a reduction of the ambiguity of IS business value [7]. Lastly, we have synthesized research recommendations from the literature together with the white spots through which we identified avenues for potentially fruitful future research.

This research also provides helpful contributions for practitioners. Firstly, we have demonstrated that digital innovation leads not only to financial benefits in the form of enabling new revenue streams. Digital innovation can provide value in various forms and we encourage firms to actively consider and plan for these forms of value. Secondly, with the value loci we give managers a guiding tool to think in a structured, integrated way about digital innovation value. Lastly, with the different value dimensions mentioned in the papers, there is also a different set of indicators needed to evaluate digital innovation value. To assess whether a digital innovation creates value for an organization, it is vital to define the right set of indicators accurately in the first place. Managers should think of other measurements and benchmarking processes for digital innovation success. The dimensions discussed in this research can serve as a starting point but are not exhaustive.

There are certain limitations to this research. The goal of this research was to decipher the value of digital innovation. Firstly, as outlined in the beginning, we have focused on the value that digital innovation can provide in organizational contexts, i.e., we have excluded other stakeholders such as communities, politics and society. Particularly, we need to be able to identify eventual financial performance improvements through digital innovation more precisely. We therefore call for further quantitative research in this field to understand the relevance and characteristics of this linkage better. Secondly, we employ the loci of value to structure the existent literature along different organizational levels of analysis. However, different dimensions are conceivable. For instance, our framework does not differentiate between digital innovation components or tools [13]. Thirdly, this research is not complete in the sense that there are potentially more empirical studies existent that have not been included, especially giving the fast pace at which this topic is evolving. On a similar

note, although we aimed to include all relevant articles possibly not all research outside the IS literature related to digital innovation value has been identified for the literature review.

To conclude this paper, we can say that in this literature review, we have examined the different aspects of value derived from digital innovation. The initial research question of this study – "where does digital innovation create economic value for organizations?" – can now be answered: the developed framework shows that the current literature can be systemized and summarized according to the identified value loci of organizational knowledge, human capital, product/service, competition and collaboration. In addition, the systemization shows different perspectives on how to approach each locus. Moreover, the systemizational levels of analysis. We derive a set of research avenues that surface potential areas of research in the field of digital innovation value. Overall, this study adds to the literature by showing where digital innovation can create economic value for organizations, synthesizing the current body of knowledge of digital innovation value for organizations and providing ideas for scholars to embark on new research avenues towards deepening our understanding of the value of digital innovation.

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