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EDITORIAL

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Guest Editorial: Theories of Digital Transformation: A Progress Report

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Nearly a year ago we issued a call for papers for a Special Issue of the *Journal of the Association for Information Systems* (*JAIS*) on Envisioning Digital Transformation: Advancing Theoretical Diversity. The call has a deadline in September of this year and included the opportunity for prospective authors to submit abstracts for developmental comments. We wrote this editorial with the aim of offering guidance to authors who are still in the process of developing their papers for the special issue. We first describe how we came to propose the special issue and the early decisions we made. Then, we discuss what we've learned from reviewing over 30 abstracts. Finally, we explore some next steps based on our reading of the revised abstracts.

1 Special Issue Origins

The impetus for our special issue was an invitation from then newly appointed *JAIS* editor-in-chief, Dorothy Leidner. Dorothy had read a commentary we previously published in *JAIS* (Rowe & Markus, in Hovorka et al., 2019) and came up with an idea to extend *JAIS*'s long-standing commitment to developing and publishing theory papers.

> *September 24, 2019*
>
> *Hi Frantz and Lynne,*
>
> *I really enjoyed reading your commentary on Rudy's "Against Theory" essay. …*
>
> *I had an idea that that was partly prompted by your nice commentary and I wanted to ask you about it. I thought it would be interesting to have a special issue where all papers were review/theory papers on the same topic. My thought is that there are different ways to theorize a phenomenon and different, equally valid, ways of conducting a review. The topic would center on some current phenomenon that has not yet been well theorized. I was wondering if the two of you might be interested in editing such a special issue? …*
>
> *Regards,*
>
> *Dorothy*

As you may recall, in our commentary on Hirschheim's "Against Theory" (Rowe & Markus, in Hovorka et al. 2019) we made the following arguments:

1. A key problem in our field is not so much that we fetishize theory but that we have a narrow definition of theory. The consensus definition of theory in our field is a boxes-and-arrows diagram yielding a set of hypotheses about associations among variables. This view of theory is too limited for our field, in which many scholars offer qualitative interpretations of IS phenomena and others seek social and/or physical mechanisms that operate under particular conditions given certain triggering events.
2. The solution to this problem, in our view, is not to jettison theory or to substitute practitioners' understandings for theory, but rather to broaden

our understanding of what theory is and to publish theoretical papers of diverse forms and styles.

3. Theorizing in our field could also be enhanced by an author's description of the theoretical problem space (Majchrzak et al., 2012) and careful articulation of which part of that space the author's contribution targets. For instance, if an author's focus is the gig economy, part of the author's burden is to delineate what the gig economy is and isn't, as well as what aspects of the gig economy are addressed by the author's theory.

Dorothy's proposal for a special issue aimed to build on these claims.

2 Early Editorial Decisions

After thinking about Dorothy's suggestion for some time, we came back to her with a proposal that narrowed the scope and offered a focal phenomenon for the special issue. The choice of focal phenomenon —digital transformation—was the easier decision. Lynne had been writing about digital innovation (Markus & Nan, 2020) and Frantz had written about organizational transformation (Besson & Rowe, 2012). We knew that there was much interest and writing on digital transformation in our field, and a recent review paper (Vial, 2019) made it clear that digital transformation was not yet well theorized in our field. Further, since the phenomenon can be conceptualized as occurring within organizations, within interorganizational ecosystems, and within society at large (Hanelt et al., 2020), we figured we had a good chance of receiving a diversity of theoretical statements among our submissions.

Our decision on the scope of the special issue required more deliberation. Dorothy had initially suggested that we call for both theory and review papers, but we decided to narrow the scope to theory papers only. At the *European Journal of Information Systems*, Frantz had been instrumental in increasing the field's acceptance of the review paper genre and increasing its rigor (Rowe, 2014). Dorothy has also made important contributions to the review paper and theory paper genres (Leidner, 2018). And, based on her work as senior editor of *MIS Quarterly*'s now-discontinued Theory and Review section, Lynne had developed ideas about the differences between the theory paper genre and the review paper genre (Markus & Saunders, 2007; Rivard, 2014). Those factors weighed in favor of including both theory and review papers in our special issue on digital transformation.

However, much of the recent writing on review papers in IS has emphasized the methodology of conducting reviews rather than the insights authors derive from their reviews (Templier & Paré, 2018). We did not want our associate editor's and reviewers to get hung up on the nature of the literature reviewed or the methodology used to review the literature. We wanted authors' insights, regardless of whether they were derived from literature, from data (as in data mining or building theory from case studies) or both (as in grounded theory, as it is supposed to be done) (Urquhart, 2012; Levina, 2021).

Further, we wanted to push the boundaries of the theory paper genre (Grover & Lyytinen, 2015; Rowe, 2011, 2012). We knew that theory building is an effort that requires disciplined imagination (Weick, 1989) and inspiration (Rivard, 2014), neither of which can be reduced to a method (Rivard, 2020). We believed that the decades-old *Academy of Management Review* paper model offered much room for improvement. Sets of associational propositions, e.g., "the more x-the more y," do not fit well with interpretive and realist philosophies, but conventions for theoretical statements in those traditions are not well established in our field. We wondered whether it would be possible to write convincing statements of theory that had been informed or inspired by qualitative or quantitative data without all the usual emphasis on empirical methods and evidence. We wanted insightful statements about the phenomenon of digital transformation (however conceptualized), and we wanted the focus of editorial review to be on *the insights and how they were presented*, not on how they were achieved. In this sense, we did not want to emphasize theorizing on the basis of theories already in use in our field, but rather wished to emphasize newly invented IS theories that could either "replace existing theory with new IS theory to understand the [digital transformation] phenomenon more effectively" or "envision [i.e., develop a new theory that opens up] a new world" involving digital transformation (Burton-Jones et al., 2021, p. 303).

To our gratification, Dorothy accepted our proposal. We drafted the call for papers and recruited associate editors. The call included plans for a couple of special issue workshops to help develop papers both before and after the September 1, 2021 paper submission deadline. We invited abstracts in advance of a planned workshop at HICSS 2021. After HICSS went virtual as a result of the Covid-19 pandemic, we revised our plans for working with prospective authors.

3 What We Have Learned Thus Far

By October 2020, we had received over 30 abstracts from prospective authors. As every special issue editor learns, not every submission is responsive to the call for papers. Our individual and collective feedback to submitters highlighted three key themes: our insistence

on the phenomenon of digital transformation, our emphasis on theory (versus philosophy, literature, data, or method), and our interest in innovation in the theory paper genre.

3.1 The Phenomenon of Digital Transformation

We had called for papers with clear relevance to the phenomenon of digital transformation. A few of the abstracts submitted to us never even mentioned that term. Some authors used the term so loosely that one could substitute almost any other term of art in our field with no discernable effect. This reinforced our impression, stated above (Rowe & Markus, in Hovorka et al. 2019), that theorizing might be improved if authors first drew a big picture of the phenomenon of interest before pinpointing their contributions. Depending on whether one accepts a stratified view of the world (Markus & Rowe, 2018), this could mean differentiating the level at which digital innovation is addressed (e.g., at the ecosystem level or at the organizational level) or differentiating a top-down from a bottom-up point of view of the phenomenon. It is also important for readers to understand whether authors equate the term transformation with any sort of change or whether transformation has a more precise meaning, such as qualifying a deep structure change of the affected target (Besson & Rowe, 2012). (An example of deep structure change might be a redefinition of an organization's value proposition, see Wessel et al., 2021). Clarification of the digital transformation concept could also take the form of identifying digital properties that may make a difference (Tilson et al., 2010; Benbya et al., 2020) or discussing whether digital properties are modifiable during interactions with humans (Kane et al., 2020). There are undoubtedly additional strategies for focusing theoretical contributions.

A number of abstract submissions uncritically used Vial's (2019, p. 118) first definition of digital transformation, with regrettable results. Vial's definition—"a process that aims to improve an entity by triggering significant changes to its properties through combinations of information, computing, communication, and connectivity technologies" —is contestable on several grounds. It refers to a process but implies an "entity" perspective rather than a "process" perspective (Van de Ven & Poole, 2005), and so may not be compatible with interpretive theoretical arguments. The definition embeds a complex causal sequence with triggers, outcomes, and mechanisms, and thus might be thought of as a statement of theory in itself, rather than as a concept that could be operationalized for empirical research. By use of the term "aims to," the definition implies intentional human agency, and so may not be compatible with complexity and evolutionary theorizing. And, if one takes an otherwise intelligible proposition such as "digital transformation triggers changes in organizational structure," insertion of Vial's definition in place of "digital transformation" yields incomprehensible results. Having pointed these observations out to abstract submitters, we were pleased to see that their revised abstracts often featured new, author-created definitions!

3.2 The Nature of Theory

Digital transformation is not yet, we believe, well theorized. Nor do we think, despite the mountain of ink devoted to the topic, is theory. From a philosophy of science viewpoint, theory is usually defined in terms of explanation and/or prediction (Gregor, 2006), a definition that privileges positivistic and realist perspectives on theory and may be both too ambitious and too restrictive. In fact, many authorities argue that prediction is impossible in the social sciences because humans have agency to act differently. Moreover, from the outset, we were determined to be broader in our definition of theory, so that we could accommodate interpretive and critical points of view. At the same time, it is clear that definitions of theory and corresponding goals for theory vary widely (Gregor, 2006). For instance, in design science, it is commonplace today to hear references to descriptive theories and to explanatory (or kernel) theories that can serve as the basis for developing design principles. By contrast, Iivari (2018) argues that kernel theories are not needed for developing substantive technological theories.

Other debates regarding the nature and characteristics of theories abound. Examples include debates about the need for theories of wide scope or generality (often qualified as grand theories, see Leidner & Tona, 2021) versus theories of narrower scope (qualified as midrange theories, see Grover & Lyytinen, 2015), debates about the emphasis on formal or hypothetico-deductive theories (Siponen & Klaavuniemi, 2020) versus grounded theories (Urquhart, 2012), or debates about explanatory theories versus nontraditional theory types, such as theories of the problem and theories of the solution (Majchrzak et al., 2012).

A similar diversity of theory understandings was present in the submitted abstracts. We received frameworks, models, applications of established theories, and perspectives derived from grand social theories. By the end of our reading, we were obliged to accept that, while we wish to encourage theoretical diversity, we are not open to every conceivable interpretation of what theory is. For instance, we are not open to theories that are so "grand" (abstract and general) that they explain all aspects of technology, organization, and social behavior, including digital transformation. For example, we would not consider a journal-length summary of strategic management theory, complexity theory, or

actor-network theory to be a good fit with our call. We are also not open to theories that are so descriptive, concrete, or unique to particular circumstances that they offer no transferable lessons for future research, education, or practice. Also, we are not open to frameworks or propositional systems that assert logical relationships among concepts but do not provide explanations or interpretations of the relationships (Sutton & Staw, 1995).

In our special issue, we *are* looking for theoretical statements that *account for* (as opposed to simply provide an *account of)* the distinctive phenomenon of digital transformation in some useful way (interpretation, explanation, design, etc.). Regardless of whether an author conceives of digital transformation as an ongoing process or the achievement of a particular state, the theoretical statements we seek about digital transformation would not apply equally well to something *other than digital transformation*. In other words, a theory of digital transformation as an outcome should not be equivalent to a theory of widespread IT diffusion; a theory of digital transformation as a process should not be equivalent to a theory of IT organizational change (Wessel et al., 2021).

As we reflect on our special issue journey, our current working definition of theory is "a justified argument about how people in our field should understand, explain, or design for a phenomenon"—in this case, digital transformation. The key terms in our working definition are "justified argument," "understand," "explain," and "design." *Argument* is the process or a statement of reasoning (Toulmin, 1958; Ngwenyama, 2019). Arguments can be *justified* by reference to an existing body of knowledge (basic concepts, theories, and empirical generalizations), by reference to close observation and rich description of an empirical phenomenon, or some combination of both. *Understanding* is not mere description, nor is it a redescription that replaces observations with low-level descriptive labels or with concepts derived from some existing theory. Rather, it is an abstract statement that interprets or "makes sense" of what goes on (or went on) in a specific situation, even if it does not "explain" it in the commonly understood sense. *Explanation* is causal and can be singular (related to a particular situation) or general. *Design* is a prescriptive activity that proposes (justified) solutions to specified problems.

3.3 Innovation in the Theory Paper Genre

As discussed above, a major goal of the editorial process we envision for the special issue is to avoid evaluating manuscripts on the basis of the method an author uses (whether the method is a systematic or an eclectic review of the literature or a quantitative, qualitative, interpretive, design science, or comparative approach). Again, we want the emphasis to be on insights about digital transformation, not on how authors arrived at them. That means that we do not expect to receive articles in many familiar or emerging conceptual or empirical genres such as literature reviews, reviews of existing theories, theory built from case studies, applications of theory to case studies, grounded theory development, qualitative comparative analyses, data-mining studies, etc. So, what's left? We want authors to innovate, to create new genres of IS theoretical writing.

We understand that this poses a quandary for prospective authors. Although we are not willing to prescribe a paper structure, we can think of at least two general approaches, described below. We are absolutely open to alternative presentation strategies.

Here is one approach:

- Background
  - Definition/examples of digital transformation
  - Here (briefly) are my sources of inspiration for theorizing, which might include: philosophical tradition, prior theory, empirical data and examples, and/or empirical procedures that produced the requirements for or building blocks of theory
- Here's my theory of digital transformation
- Here are the implications of my theory, which might include:
  - How my theory of digital transformation differs from other theories and is superior to them
  - How my theory helps differentiate digital transformation from phenomena other than digital transformation
  - My ideas about future empirical investigations of the theory
  - My ideas about future theoretical developments needed
  - Practical implications, such as business, educational, or design prescriptions

Here is another approach reflecting an abductive research style (Bamberger 2019):

- Here (briefly) are the interesting observations (my own or someone else's) that triggered my theorizing.
- Here's how or why it is not (possible, sufficient, good) to (interpret, explain, design for, account for) these observations with existing theory.
- Here's my theory and how it better (interprets, explains, designs for, accounts for) the observation.
- Here are the implications of my theory.

In the first approach above, we welcome not-so-pure (Siponen & Klaavuniemi, 2020) deductive theories. In this approach, there is no need for authors to report observational data. Such a requirement has unduly limited and continues to limit our ability to face some of the current difficulties our digital world (Grover & Lyytinen, 2015; Rowe, 2018). Instead, careful reasoning about the future (Markus & Mentzer, 2014; Kane et al. 2021, Hovorka & Peter, 2021) could provide the basis for productive theorizing. Even though prediction with certainty is impossible, future-oriented analysis can help us become aware of important possible risks and theorize about steps that might help address them. We are sure that there are a number of other interesting, persuasive, and innovative ways to present novel insights and theorizing about digital transformation. We certainly look forward to reading what authors and editors come up with!

4 Next Steps

Having communicated the general comments above as well as some specific advice to authors, we invited authors to submit revised abstracts in preparation for a paper development workshop. Our original plans for the workshop were derailed by the cancellation of HICSS as an in-person conference, and our plans for a virtual replacement continue to evolve. Despite these inconveniences, we've continued to learn from our interactions with the authors of submitted abstracts as well as our associate editors.

First, we were very pleased by the extent to which authors engaged our feedback, not least with respect to their definitions of digital transformation! Second, the revised abstracts suggested three issues to us that we believe deserve wider debate in our field. We believe that prospective authors (regardless of participation in the nonmandatory abstract submission and review process) will benefit from thinking through their positions on these issues as they prepare their papers for submission.

4.1 Issue 1: Theoretical Point of View

For the most part, each of the abstracts we received reflected one of three major points of view:

- The view of *organizational managers* concerned with
  - The dynamics of ecosystem change,
  - Advantageous strategic moves regarding products, competitors, or environmental opportunities/threats, and/or
  - Internally-focused tactics aimed at motivating innovation or employee behavior change
- The view from *within the organization* concerned with
  - The practices of workers using or developing digital technologies,
  - The processes/mechanisms of intraorganizational change under conditions of digital transformation, and/or
  - The roles of non-human actors
- The view of the *societal observer* concerned with
  - The dynamics of change in social units that are broader than organizational ecosystems (e.g., society in general, business sectors, interorganizational fields),
  - The unintended consequences of digital transformation, and/or
  - How best to mobilize actors in the co-creation of desirable societal change

Questions: What are the pros and cons of each of these points of view? What can we do to encourage multifocal thinking in the IS community?

4.2 Issue 2: Purpose of Theorizing

An enduring question about theory is: What is theory for? (In other words, what is the purpose of theory? what kind of implications should "good" theories have?) As we read the revised abstracts, several purposes occurred to us:

- Education: Teaching students
- Consultation: Prescribing to managers
- Methodology: Guiding empirical research
- Inspiration: Engaging the hearts and minds of other scholars

Question: How important is it for a theory paper to have insightful implications for one (which one?) or all of these purposes?

4.3 Issue 3: Diversity of Theories

In a few instances, we received several abstracts that addressed very similar research questions in very similar ways, producing theoretical accounts that differed more in nuance than in nature. The value of diverse *levels of analysis* or *points of view* (e.g., managerial, worker, outsider) on digital transformation seems obvious to us. But the value of theoretical diversity given similar research questions, the same point of view, and related reference disciplines seems more debatable: What signal do we send to our stakeholders, if we as a field do not (try to, appear to, achieve to) converge on answers to our most central research questions?

Questions: How important is it for authors of theory papers to offer arguments in support of the goodness of their claims? What form(s) could/should such arguments take? For example:

- Theoretical competition: Descriptive, interpretive, explanatory, predictive, etc., superiority over competing theories
- Empirical discrimination: Ability to differentiate digital transformation from other phenomena
- Intellectual productiveness: Ability to stimulate interesting new research questions and/or empirical investigations?
- Other criteria??

5 Conclusion

We've hardly begun the journey launched by Dorothy Leidner's invitation for us to edit a special issue of *JAIS* that tackles theoretical diversity by restricting the genres of papers while holding the topic constant. We've learned enormously from the process thus far and look forward to learning where the process will lead.

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