

Appendix A: Examples of Applying Proposed Guidelines

A.1. Guideline 1 – Sensitivity to Ontological Position

With digital money, the emphasis is on the semiotic representation and further abstraction of money (Dodgson et al. 2015, Pshenichnikov and Babkin 2017). Scholars that focus on this dominant technical valence of digital money draw on the digital term with a technological underlay provided by the bitstring form of money.

With digital disruption, the emphasis is on the agency exercised by actors to alter a status quo in a domain by leveraging digital technology (Riemer and Jonhston 2019). This can be seen from a digitalization perspective in terms of the paradigm shift that is unveiled by applying digital technology to rethink or upend established norms within a given sociotechnical context. See Table A.1. for a summary.

Guidelines	Guiding question	Actionable Suggestions
<i>Guideline 1: Ontological position</i>	What ontological positions does the study subscribe to?	<ul style="list-style-type: none"> • Articulate the ontological standpoint adopted. • Outline why this is the appropriate view for your specific x inquiry. • Alternatively, offer a new ontological stance, if relevant.
<i>Digital Money</i>	Illustration <ul style="list-style-type: none"> • <i>Ontological standpoint:</i> Co-constitutive view with emphasis on digitization • <i>Why?</i> Emphasis is on the semiotic representation of money abstracted from the physical form (notes) to the varied bitstring forms. 	
<i>Digital Disruption</i>	Illustration <ul style="list-style-type: none"> • <i>Ontological standpoint:</i> Co-constitutive view with emphasis on digitalization • <i>Why?</i> Emphasis is on the agential possibilities to unlock new affordances from a technology in order to profoundly change a status quo in a context 	

Table A.1: Ontological position illustration for Digital Money and Digital Disruption

A.2. Guideline 2 – Justify Context Shifting

The *semiotic shift* captures a key context shifting that warrants the move from the traditional notion of money to digital money. In essence, the articulation and construction of digital money as a concept became salient when the notion of money as a tangible resource (i.e., cash/bills) was no longer sufficient to capture the semiotic representation of money in terms of bitstrings (Adrian and Mancini-Griffoli 2019, Dodgson et al. 2015). While the semiotic shift is arguably the most salient shift in the case of digital money, other shifts could also be argued for.

In contrast, the *agential shift* is a core shift that necessitates the move from IT disruption to digital disruption. While the IT disruption conception focused on disruptions caused by technology breakdown or technology-related issues (Dyne et al. 2009, Qu and Jiang 2019), the notion of digital disruption elevates the agent’s role in unlocking disruption via the novel application of technology, which alters established norms and confounds the prior organizing logics that have characterized a context before (Baiyere and Hukal 2020, Riemer and Johnston 2019, Skog et al. 2018). While the agential shift is arguably the most salient shift in this case, other shifts such as infrastructural cum combinatorial, and unique economics are enabling shifts that make agential shifts possible. See Table A.2 for an overview of both examples.

Guidelines	Guiding question	Actionable Suggestions
<i>Guideline 2: Justified context shifting</i>	What is new/has changed about the “x” context that warrants a new label?	<ul style="list-style-type: none"> • Identify the observed context shift(s) in your specific x domain. • Justify why the observed shifts warrant a new label. • Draw on the four outlined context shifts or formulate other reasoned context shifts to support your arguments.
<i>Digital Money</i>	Illustration <ul style="list-style-type: none"> • <i>Example of Identified context shift(s):</i> Semiotic shift and infrastructural cum combinatorial shift • <i>Justification:</i> <ul style="list-style-type: none"> • <i>Semiotic shift:</i> the shift from the view of money as a tangible resource to a semiotic representation • <i>Infrastructural cum Combinatorial shift:</i> Emergence of new forms of value unlocked by the novel potentials of the digitized form of money such as cryptocurrencies (e.g., bitcoin) and derivatives such as non-fungible token (NFTs) 	
<i>Digital Disruption</i>	Illustration <ul style="list-style-type: none"> • <i>Example of Identified context shift(s):</i> Agential shift and unique economics shift. • <i>Justification:</i> <ul style="list-style-type: none"> • <i>Agential shift:</i> The shift from the view of technology breakdown leading to disruption to a view where agents unlock disruption based on novel application of technology to alter established norms/status quo and organizing logic. • <i>Unique economics shift:</i> The economics around disruption shift from the technology as the nucleus that determines the scale and scope of impact to the extent to which the paradigmatic change upends past economic models in sociotechnical contexts. For example, the economic impact of the digital disruption of streaming to the video and music industry is not limited to Netflix or Spotify but applies to the whole industry. 	

Table A.2: Justified context shifting illustration for Digital Money and Digital Disruption

A.3. Guideline 3 – Demonstrate the Signified Qualitative Difference

A key delineation that the concept of digital money brings to the fore is that value is encapsulated in bitstrings as a bearer of value, while the established assumption of money is

that it is encapsulated in the form of physical cash (bills) as a bearer of value while its digital presentations (as those of money on bank accounts or while using credit cards) are secondary. This is the ‘digital first’ notion where the digital money precedes the physical money and the latter can have multiple incarnations (Baskerville et al 2020). As opposed to seeing money as a physical tender (cash), digital money signifies a qualitative difference reflecting a view of money as a legal tender despite abstracting it into a bitstring form. With the liquefaction of physical money into its bitstring form, digital money as a conceptual label signifies an extension in the thinking about money such that it can be spatially separated from the location of a transaction while opening up new modes of value exchange across media and material bearers (Adrian and Mancini-Griffoli 2019, Dodgson et al. 2015).

With digital disruption, a key delineation from IT disruption is that it entails a paradigmatic shift in *modus operandi* brought about by the application of digital technology (Riemer and Johnston 2019) instead of disruptions brought about by the breakdown of IT systems or infrastructure (Qu and Jiang 2019). This signifies a qualitatively different scale, scope, and source of disruption between the digital and the IT equivalent. Essentially, the location of technology in both disruptions is fundamentally different such that attributing the phenomena captured by digital disruption with IT disruption will amount to a misallocation of agency. See Table A.3 for an overview.

Guidelines	Guiding question	Actionable Suggestions
<i>Guideline 3: Signified qualitative difference.</i>	What is the salient qualitative difference between ‘digital x’ and ‘IT x’ that is being signified?	<ul style="list-style-type: none"> • Outline the prior knowledge or assumptions of your chosen domain • Propose the ‘digital x’ variant for conceptualizing phenomena in your domain • Identify the qualitative difference between the prior knowledge and the advanced ‘digital x’ concept through careful juxtaposition • Demonstrate the conceptual merit, empirical insight, and practical value of the applied ‘digital x’ concepts.
<i>Digital Money</i>	Illustration <ul style="list-style-type: none"> • <i>Prior assumptions of “money” concept:</i> Money is encapsulated in the form of physical cash (bills being printed) as a bearer of value • <i>Proposed conceptualization of “digital money”:</i> Means of exchange where value is encapsulated exclusively in bitstrings as a bearer of value • <i>Qualitative difference between money and digital money:</i> e.g., change in form from physical to bitstrings, paradigmatic change in modes of value exchange, a foundation for technology-based derivatives of money such as cryptocurrencies, non-fungible tokens (NFTs) on etc. • <i>Value of “digital money” conceptualization:</i> Digital money’s conceptualization frees scholarship and practice from the limitations of prior conceptualization of money - as a physical means of exchange and bearer of value that by necessity is tethered to the bearer for exchange to happen - to a concept that embraces the spatially void 	

	idea of money enabling new modes of value exchange.
<i>Digital Disruption</i>	<p>Illustration</p> <ul style="list-style-type: none"> • <i>Prior assumptions of “IT disruption” concept:</i> Disruption occurs as an alteration of normal functions due to the breakdown of IT systems or infrastructure • <i>Proposed conceptualization of “digital disruption”:</i> Disruption occurs as a profound alteration of a dominant paradigm or the established norms/status quo of a context due to novel applications of digital technology • <i>Qualitative difference between IT disruption and digital disruption:</i> e.g., engenders a change in a dominant paradigm that upends the prior modus operandi and logics of a context as opposed to IT disruption, which is primarily a discontinuity due to technology malfunctions. Another core difference lies in the scale, scope, and source of disruption as well as a fundamental distinction in the location of technology in the disruption process, etc. • <i>Value of “digital disruption” conceptualization:</i> Digital disruption conceptualization frees scholarship and practice from the limitations of prior conceptualization of IT disruption - as an IT-induced alteration - to a concept that embraces the possibilities for disruption to be induced by the actions of agents afforded by technology.

Table A.3: Qualitative difference illustration for Digital Money and Digital Disruption

Additional references

- Adrian, T., & Mancini-Griffoli, T. (2019). The rise of digital money. *Annual Review of Financial Economics*, 13.
- Baiyere, A., & Hukal, P. (2020). Digital Disruption: A Conceptual Clarification. In *Proceedings of the 53rd Hawaii International Conference on System Sciences* 5482-5491
- Dodgson, M., Gann, D., Wladawsky-Berger, I., Sultan, N., & George, G. (2015). Managing digital money. *Academy of Management Journal* 58, no. 2: 325-333.
- Dynes, S., Pixley, S., & Madory, D. (2009). Managing risk of IT disruptions in healthcare settings: A continuity of operations planning process. *AMCIS 2009 Proceedings*, 161.
- Qu, X. S., & Jiang, Z. (2019). A Time-Based Dynamic Synchronization Policy for Consolidated Database Systems. *Management Information Systems Quarterly*, 43(4), 1041-1057.
- Pshenichnikov, V. V., & Babkin, A. V. (2017). Digital money as a product of the development of information and telecommunication technologies. In *Quality Management, Transport and Information Security, Information Technologies*. 259-265.
- Riemer, K., & Johnston, R. B. (2019). Disruption as worldview change: A Kuhnian analysis of the digital music revolution. *Journal of Information Technology*, 34(4), 350-370.
- Skog, D. A., Wimelius, H., & Sandberg, J. (2018). Digital disruption. *Business & Information Systems Engineering*, 60(5), 431-437.