

Conceptual Modeling in a Digital World: A New Framework and Research Agenda (Extended Abstract)*

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Abstract: In an increasingly digital world, conceptual modeling research is more relevant than ever to the information systems field, but it requires an update with current theory. In [Re21] we develop a new theoretical framework of conceptual modeling to change the assumptions that govern research in this area. Our framework draws attention to the role of conceptual modeling scripts as mediators between physical and digital realities. We identify new research questions about grammars, methods, scripts, agents, and contexts that are situated in intertwined physical and digital realities. We discuss several implications for conceptual modeling scholarship that relate to the necessity of developing new methods and grammars for conceptual modeling, broadening the methodological array of conceptual modeling scholarship, and considering new dependent variables.


Keywords: conceptual modeling, mediation, ontological reversal, digital objects, representation.

1 Introduction

In a world that abounds with digital technologies, modern information systems (IS) no longer only represent reality but also increasingly shape it. This fundamental shift in IS's role has profound implications for the development and use of conceptual modeling (CM) to capture the relevant features of a real-world domain that an IS is intended to support.

The time is ripe to update CM theory because the traditional assumptions of CM scholarship increasingly under-represent and constrain CM's potential to support the ongoing digitalization of reality. Therefore, the purpose of our paper [Re21] was to offer a new framework for CM scholarship that is fit for the burgeoning digital world.

* This extended abstract summarizes our original article "From Representation to Mediation: A New Agenda for Conceptual Modeling Research in a Digital World" that appeared in *MIS Quarterly*, 45(1), 269-300, 2021.

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2 A New Framework for Conceptual Modeling in the Digital World

In our paper we reviewed the literature on conceptual modeling to demonstrate that field assumptions in CM research have been largely stable, even though the IS landscape has progressed. Developments in technology and organizing have made CM field assumptions increasingly distant from and poorly fitting with IS reality. These developments limit the contributions and explanatory power of CM research that remains within the realm constructed by the old assumptions. Therefore, a change in CM research is timely and warranted. In response, we propose a novel framework for CM research and update its research agenda in our paper.

Our new Conceptual Modeling in the Digital World (CMDW) framework recognizes that CM occurs within and between physical and digital realities. It situates the *CM script* as the principal CM artifact at the intersection of physical and digital realities. It also recognizes the *CM agent* as any agent, human or digital, that produces or consumes CM scripts. Finally, the CMDW framework offers a new definition of the *CM context* by describing the CM context as the continually changing socio-material setting in which CM occurs.

3 Conclusions

The main value proposition of our CMDW framework is that it repositions CM scholarship in the digital world so it can continue its prominent role in IS scholarship and heighten its significance in an increasingly digital world.

A second core value proposition of our CMDW framework lies in highlighting uncharted prospects of CM research. These prospects can reignite interest in CM research. Our framework promotes a new, proactive agenda that encourages CM scholarship to speak to the broader issues and challenges organizations and society face in a digital world. At the same time, our framework stays connected to traditional CM scholarship, easing the transition between traditional CM research and the uncharted territories. In the paper we discuss three possible territories for CM research as examples for future CM research.

Following the research agenda suggested by the CMDW framework will reveal new limits of CM but it will also increase our confidence in where, how, and why CM is effective and useful. We may even discover that CM holds promises that have not yet been foreseen.

References

- [Re21] Recker, J., Lukyanenko, R., Jabbari Sabegh, M. A., Samuel, B. M., Castellanos, A.: From Representation to Mediation: A New Agenda for Conceptual Modeling Research in a Digital World. *MIS Quarterly*, 45(1), 269-300, 2021.