

# Digital Transformation for Sustainability-oriented Innovation in Real Estate Companies: From a theoretical model to practical tools

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## Background

**Digital transformation is an inevitable revolution and complex system change in industries carrying profound implications for sustainability-oriented innovation.** It is not simply about adoption of new digital technologies. It is the cultural, organisational, and operational change of an organisation, industry, and business ecosystem through a smart integration of digital technology, processes and competencies across all levels and functions in a staged and strategic way (I-scoop, 2020). Taking real estate industry as an example, Digital technologies applied to building and property, namely proptech, have the great potential to enable sustainability-oriented innovation in urban business. For example, they can promote green energy, smart waste management, safety in housing, equal access to public facilities, healthy lifestyle etc. However, these can only happen if digital transformation in the real estate industry is successfully and meaningfully implemented.

**Real estate industry is set to accelerate digital transformation for sustainability-oriented innovation but faces great challenges at the individual, organisational and business ecosystem level.** The 2022 KPMG report highlights that digitalization is now viewed by real estate professionals as the top priority to maintain a competitive edge. Nevertheless, despite this recognition, the pace of advancement in digital transformation of real estate industry remains sluggish and fraught (Pfnür & Wagner 2020, Ullah et al., 2021). There is an evident gap between the recognition of digitalisation as an inevitable development and the competences and actions to pursue the opportunities and address the challenges (Vigren, Kadefors, & Eriksson, 2022). A significant contributing factor to this disconnect is the absence of practical toolkits that can address the complexities of systemic change.

## Aim of the paper

Taking a design approach, this paper suggests **development of a practical toolkit based on a multi-level multi-dimensional theoretical framework of digital transformation toward sustainability-oriented innovation** for companies to understand the dynamics and mechanisms of digital transformation and to aid development of solutions for sustainability-oriented innovation.

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## **The MM model of digital transformation**

This paper based on a multi-level and multi-dimensional theoretical framework (the MM model) developed by Liu and Palm (2023). The framework combines individual, organisation, and business ecosystem perspective as an integrated lens from a real estate company's point of view. The framework includes 1) three analytical levels, namely the individual, organisational, and business ecosystem level; 2) four lateral factors on each level, namely the actors, determinants, processes and outcomes/impacts; and 3) two types of relations among the different factors at different levels, that are same level relations and cross level interactions.

In this framework, the lower level is micro-foundation of the higher level. The four lateral factors are logically interrelated. The outcomes/impacts of digital transformation do not depend on any single level nor single factors in the framework but the interaction among all the different levels and factors. In other words, it is a system phenomenon.

## **Toward a set of practical toolkits**

Translating Liu and Palm's (2023) theoretical framework into a practical toolkit holds significant promise, especially for real estate practitioners with little experience in navigating the complexities of digital transformation. However, it is imperative that such a toolkit caters to both newcomers and experienced professionals. Fundamentally, it should offer an introductory understanding of digital transformation while also providing a structured approach to orchestrating the process. By doing so, it can serve as a starting point, breaking down the transformation journey into manageable steps and fostering a common language among stakeholders.

The MM model has led to the development of four distinct toolkits: the actor toolkit, the determinant toolkit, the process toolkit, and the impact toolkit. These toolkits comprise a range of tools and techniques designed to work in tandem, providing real estate companies with comprehensive resources to formulate coping strategies. Through the example of a real estate company's strategic plan for AI adoption, the paper demonstrates the practical application of these toolkits, showcasing their utility in guiding organizational decision-making processes.

## References

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