

# Chapter 3

## Enterprise Modelling in the Digital Age

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### ABSTRACT

*Our society is transitioning from the industrial age to the digital age, thus also revolutionising the enterprise landscape. In addition, one can observe how the notion of economic exchange is shifting from goods-dominant logic to service-dominant logic, putting the focus on continuous value co-creation between providers and consumers. Combined, these trends drive enterprises to transform continuously. During enterprise transformations, coordination among the stakeholders involved is key. Enterprise models are traditionally regarded as an effective way to enable informed coordination. At the same time, the digital age also provides ample challenges and opportunities for enterprise modelling. The objective of this chapter is therefore threefold. The first aim is to reflect on the role of enterprise modelling for coordinated enterprise transformation. The second aim is to explore the challenges posed by digital transformations to enterprise modelling. The third aim is to reflect on how enterprise modelling itself may benefit from the new digital technologies.*

### INTRODUCTION

Our society is transitioning from the industrial age to the digital age. The development and maturation of “digital technologies”, such as mobile computing, pervasive computing, cloud computing, big data, artificial intelligence, robotics, social media, etc., further fuel the digital transformation, which now also revolutionises the enterprise landscape.

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Where IT originally was a mere supportive tool for administrative purposes, it is safe to say that IT has now become an integral part of an organisation's primary processes, and has quite often become an integral part of the business model. As a result, only considering the *alignment* (Henderson and Venkatraman, 1993) of business and IT no longer suffices. The difference between business and IT is increasingly fading; they have been *fused* into one (Gils and Proper, 2018). Companies such as Amazon, AirBnB, Uber, Netflix, Spotify, N26, etcetera, illustrate how IT and business have indeed become fused. The CEO of a major bank can even be quoted as stating “*We want to be a tech company with a banking license*” (Hamers, 2017).

In addition, marketing sciences (Vargo and Lusch, 2008; Grönroos and Ravald, 2011; Lusch and Nambisan, 2015; Vargo and Lusch, 2016) suggests that the notion of economic exchange, core to the economy, has shifted from following a goods-dominant logic to a service-dominant logic. While the former focuses on tangible resources to produce goods and embeds value in the transactions of goods, the latter puts the focus on the continuous *value co-creation* between providers and consumers by way of resource integration. For instance, in the airline industry, jet turbine manufacturers used to follow a classical goods-dominant logic by selling turbines to airlines. However, since airlines are not interested in *owning* turbines, but rather in the realisation of *airtime*, manufacturers nowadays sell airtime to airlines instead of jet turbines. *Value co-creation* is shaping up as a key design concern for modern day enterprises (Gils and Proper, 2018).

These intertwined, and mutually amplifying, trends drive enterprises to transform continuously. As discussed in (Proper et al., 2018b), *coordination* among the stakeholders involved is key during such transformations. More specifically, a shared understanding, agreement, and commitment, is needed on (1) what the overall strategy of the enterprise is, (2) the current affairs of the enterprise, i.e. the current situation, as well as the relevant history leading up to it, and possible trends towards the future, (3) the current affairs of the context of the enterprise, and (4) what (given the latter) the ideal future affairs of the enterprise are.

Enterprise models, and ultimately enterprise (architecture) modelling languages and associated frameworks, are generally regarded as an effective way to *enable* such (informed) coordination. At the same time, however, the digital age also provides ample challenges, and opportunities, for enterprise modelling.

In line with this, the objective of this chapter is threefold. The first aim, addressed in section 2, is to reflect on the role of enterprise modelling towards the coordination of enterprise transformations in general. With this as a base, we then turn our focus to the transition to the digital age. In line with this, the second aim of this chapter, addressed in section 3, is to explore the challenges, which digital transformations pose to enterprise modelling. The third, aim of this chapter, covered in section 4, is to also reflect on how enterprise modelling itself may benefit from the new digital technologies.

## THE ROLE OF ENTERPRISE MODELLING

In discussing the role of enterprise modelling in enterprise transformations in general, and digital transformations in particular, we will start by discussing the concepts of enterprise and model as such. Based on this understanding, we then address the important question of the *purpose* of enterprise modelling. As enterprise models are used in a coordinative context involving many different stakeholders, we will finish this section with a discussion on the collaborative dimension of enterprise modelling.

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