Chapter 22
Conclusion

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This conclusion will briefly reflect on the contributions of these chapters in this part.

In the first chapter of this part, we explored the application of cartography (the science of making maps) in light of enterprises. Enterprise cartography is defined to be the process of abstracting, collecting, structuring, and representing architecture artifacts (the observable elements in the enterprise) and their relations from observations of enterprise reality. The latter point ties in with the notion of *grounded modeling* as discussed in the last chapter of this part. One of the key notions in this chapter is the evolution of maps/model from AS-WAS, to AS-IS, to TO-BE.

The notion of an *emerging AS-IS* model is introduced. With increasing speeds of change, it is more and more important to know where you are on the map exactly, and therefore, this emerging AS-IS is so important to the success of digital transformation initiatives. The approach is defined through clear definitions of key concepts (e.g., architecture statement, architecture map, transformation initiative) and five core principles (e.g., "all enterprise artifacts have a 5-stage life cycle"). In the evaluation of the EC approach, based on cases, the authors conclude that maps help with achieving "organizational self-awareness" which, in turn, is key for digital transformation.

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In the chapter of this part, the thread of AS-WAS, AS-IS, and TO-BE is picked up and explored further. This chapter is based on the observation that models can only be of use if they accurately represent the real world. Given that the real world evolves from AS-WAS to TO-BE, it makes sense that models should co-evolve.

The evolution of models is a topic that has been researched extensively. For example, in (Proper, 1994), a theory was presented to capture the evolution of conceptual models in light of evolving application domains. Chapter 20 goes a step further and explores a conceptual model of model evaluation at the architecture level. The study is based on a design science approach and results in a conceptual model with eight concepts (e.g., *enterprise architecture description element*, *enterprise architecture description*, *lifecycle*, *change*, etc.) and ten relations to connect them. The model was implemented in a software tool and tested against the Moody and Shanks criteria (completeness, simplicity, flexibility, integration, understandability, and implementability). Despite some limitations, the conceptual model and approach seems promising in light of its stated objectives to understand model evolution at the architecture level.

Chapter 21 evaluated the ArchiMate modeling language which emerges as the de facto standard for enterprise architecture modeling in the field. Based on a short survey of available literature and the practical experience of one of the authors in the field, several challenges have been identified for architecture modeling in light of digital transformation initiatives. The analysis focused on eight challenges with regard to the expressiveness of the modeling language itself and four challenges around managing the spectrum of modeling concepts. In our view, the development of the next version of ArchiMate should address these challenges. The next evolution step hinges on (a) modular language design, (b) grounded enterprise modeling, (c) adding more semantic precision, (d) fixing/redesigning abstraction mechanisms, (e) more explicit support for value co-creation, (f) capturing design decisions, and (h) managing constant change—from AS-WAS, AS-IS, to TO-BE. We have illustrated how this could play out with examples.

Evaluating and synthesizing the findings of these three chapters, we conclude that architecture modeling continues to play an important role in digital transformation initiatives, but in order to stay relevant and effective, evolution is key: not only for the models themselves but also for the meta-model and frameworks behind them.