Summary

The theoretical and empirical research conducted in this dissertation focused on explaining the role of innovation activity in shaping, aligning, and reconfiguring the business models of high-technology enterprises operating under conditions of high technological and market dynamism.

The doctoral dissertation consists of an introduction, five chapters, and a conclusion. The research method applied to achieve the study objectives was a questionnaire survey. The empirical research was carried out using two complementary data collection techniques: CATI telephone interviews and a CAWI online survey. The respondents were members of the management staff of high-technology enterprises. The research procedure included frequency analysis, Kendall's rank correlation, the Kruskal–Wallis test with Dunn's post hoc tests and Bonferroni correction, as well as exploratory factor analysis based on a polychoric correlation matrix.

The dissertation was prepared in a manner ensuring a coherent progression from theoretical foundations to empirical diagnosis and the modelling of the relationships under investigation. Chapter One discusses the processes of innovation development, the evolution of approaches to innovation activity, and the criteria for classifying innovations as well as barriers to their implementation. Chapter Two focuses on approaches to business models in management science, the relationship between the business model and strategy, classifications and structures of business models, and the problem of the variability and reconfiguration of business models under the influence of innovation activity. Chapter Three presents the determinants of innovativeness from the perspective of industrial transformation and Industry 5.0 in the context of the high-technology sector. It includes the identification of the high-technology sector and the determinants of research and development intensity from both international and national perspectives. Chapter Four contains the research methodology and an analysis of the relationships between innovation activity and the structure of the business model in high-technology enterprises. This chapter includes an assessment of the alignment of business model elements, an analysis of the impact of different types of innovation on improving enterprise performance, and an analysis of the integration of innovation activity with the structure of the business model in the area of management process improvement. Chapter Five contains an assessment of innovation activity in the alignment, integration, and reconfiguration of business

models, a correlational analysis of the relationships, the identification of differences in research results depending on the size and market maturity of the enterprises studied, as well as a model-based approach to the relationships between the factors determining innovation activity and the reconfiguration of the business model structure.

It should be emphasized that the contribution of the conducted research to the fields of management and quality sciences, as well as its role in filling a research gap, lies in the empirical integration of three perspectives that are rarely examined jointly in relation to high-technology enterprises: innovation activity, the structure and alignment of the business model, and the analytical maturity of practices used to assess the impact of innovation on business model elements. The developed recommended model for improving management processes in high-technology enterprises constitutes a conceptual and diagnostic tool enabling business model reconfiguration and the interpretation of changes under conditions of technological uncertainty. A recommendation for the high-technology enterprises studied is the need to manage innovation in a manner integrated with the business model.

Wiktoria Trzepizur