

## SUMMARY

The monograph includes an analysis of the specific nature and determinants of industrial implementation processes, including in particular logistics processes. Its main purpose is to specify the methodological bases for streamlining this group of processes.

Implementation of each logistics process requires proper management. When learning the theory and practice in this respect and setting streamlining as a goal, we deal with *management engineering of logistics processes*, which is the subject matter of the monograph. The author adopted a thesis that it is impossible to manage and streamline processes if we do not simultaneously solve operational problems, which is the domain of engineering. The content and the arrangement of the monograph are to a large extent dependent on proving the thesis.

The monograph is a large-scale compendium of knowledge about rational execution of logistics processes, covering 15 chapters, each of which includes eight subtopics. They make up two separate but strongly integrated parts:

- *part I – managing processes,*
- *part II – improving processes.*

The monograph applies an integrated approach (technological and management approach), while trying to combine two significant trends related to logistics processes: *the humanistic and economic trend* focusing mainly on management, and *the technical and praxeological trend* related to instrumentation of processes. This perspective constitutes a significant novelty in the reference literature.

The said material is an author's lecture, which combines recognised knowledge (references to a wide range of literature) and own experience in the field of production engineering as well as generalising logical syntheses concerning, in particular, the methodology of process improvement. The monograph is of a textbook nature and was prepared in the form of an e-book. Hence, the text is very condensed, but (according to the author) it touches on the essence of the discussed issues.

**Chapter 1** (*Management and its paradigms*) is an introduction to the issue of management. It discusses the notion and characteristics of management, giving particular attention to the relationship with managing, efficiency and effectiveness of management and the key assumptions concerning the classic and modern management paradigm.

**Chapter 2** (*Economic processes*) is a synthesis of issues concerning economic processes. It discusses the essence and the model of economic processes and their participants; it includes a classification of these processes, as well as

their determinants. These issues formed an introduction to the process approach, which served as the basis for discussion of the origin, idea and key assumptions of this type of approach.

**Chapter 3** (*Managing economic processes*) includes a broader consideration of management from a process perspective. Thus, it discusses the notion, essence, specific nature and conditions of process management. This background was used to define the essence of process management engineering and models of process improvement. The author formulated a paradigm stating that “*engineering derives models from science and methods – from technology*”, which forms the basis of the entire concept of the monograph. The system model of process improvement, covering the radical approach (the Hammer-Champy model) and the streamlining approach (the Rummler-Brachy model), was presented from this perspective.

**Chapter 4** (*Industrial processes*) is devoted to the discussion of the essence and specific character of industrial processes. It discusses the classification and typology of such processes and their structure from a system perspective. It presents the criteria for evaluation of the effectiveness of such processes and specifies the reasons for their improvement.

**Chapter 5** (*Managing industrial processes*) describes the specific character of managing industrial processes. It discusses strategic and operational management; special attention was given to the issue of their mapping and modelling.

**Chapter 6** (*Logistics processes in enterprises*) concerns the position and the role of logistics in enterprises and processes defined as “logistics processes”. It describes the notion and the essence of this type of processes, their classification, evaluation attributes and criteria. Special attention was given to the integrated logistics process.

**Chapter 7** (*Managing logistics processes*) introduces methodologies of managing logistics processes from a system perspective. In this respect, having discussed the essence, tasks and priorities of managing this type of processes, attention was given to the management tools from the point of view of process engineering.

**Chapter 8** (*Methods of process improvement*) is the first chapter of part II of the monograph related to improving logistics processes. The point of departure was the classification of methods related to this issue, which is followed by their general description. It discusses the methods of reengineering, benchmarking, outsourcing, lean management, total time management and virtualisation of organisational structures, as well as learning organisations.

**Chapter 9** (*Improvement through innovations*) focuses on a description of innovation as a special tool for entrepreneurs, which enables them to make a change an opportunity for taking up new business activity. It discusses the need for applying this type of tools, classification of innovation by type, sources and

incentives for innovation as well as problems related to implementation of innovations in enterprises.

**Chapter 10** (*Improvement through streamlining*) presents the methodology of conduct related to improving logistics processes through their streamlining. It describes the essence and the model of this type of activities, giving special attention to the issue of standardisation. It introduces the essence of streamlining processes according to the Kaizen and the 5S methodology. It presents the criteria for evaluation of the results and directions of activities in the field of streamlining of logistics processes.

**Chapter 11** (*Improving productivity*) includes broader considerations concerning streamlining processes from the perspective of productivity. It introduces the idea of the productivity movement, the essence of productivity from a technological, economic and social perspective as well as the criteria for its evaluation. Based on it, the monograph describes the factors and trends in improving productivity of logistics processes and the tools (programs and methods) used for this purpose.

**Chapter 12** (*Improving quality of processes*) is a synthesis of issues related to the position and role of management through quality in logistics processes. It describes the essence of the notion of “quality” and introduces tools used to improve quality of processes, paying special attention to the Six Sigma and TQM methodology. It discusses the specific character of the qualitative approach in logistics and specifies the main directions in improving the quality of logistics processes.

**Chapter 13** (*Improving flows*) covers issues related to streamlining flows in logistics processes. These issues are the essence of logistics. The task of management in this respect is related to time limitations. Thus, it introduces the notion of time as the measure of flow. Then, there is a description of improving flows through planning, standardisation, synchronisation, network methods, SMED methodology and telematics.

**Chapter 14** (*Organisational process improvement*) is related to a description of the methods of improving the organisational structure of the logistics process. A description of the essence of activities and specification of general principles of conduct in this field is followed by a more detailed specification of the following methods: JiT, ABC, CD and TOC.

**Chapter 15** (*Improving the information system*) is devoted to activities related to improving the logistics information system (LIS). The system is less and less often based on paper documents as the latest achievements in the field of information technology and telecommunications are applied. Specification of the essence of information and trends in improving activities in the LIS system is followed by a more detailed description of improving the system using the following technologies: EDI, CRM, CPFR and RFID.