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The road to the top of the mountain can be tough as the path is full of technical and organizational obstacles. You will discover that the journey is also a very interesting, instructive and satisfactory one. The roadmap and techniques described in this book will give insight and understanding of a number of powerful tools and techniques to improve processes and quality.

# How to use this book

Thousands of books have been published over the years about process improvement and quality management. You can find many different books on the topics of Lean Management and Six Sigma. This book is different because it reviews an approach across all improvement methods that have been proven to be successful over the past decades, such as TQM, Kaizen, TPM, Lean and Six Sigma. These methods, tools and techniques have been united in the 'Continuous Improvement Maturity Model' (CIMM™). This is a framework that describes the process of Continuous Improvement from a very early stage through to delivering World Class products and services. The CIMM framework connects Lean, Six Sigma and other improvement methods. The framework incorporates the best practices methods and techniques of process improvement, quality management and new product development. CIMM is an open standard and is maintained by the 'Lean Six Sigma Academy' (LSSA).

The structure of this book is based on the Lean Six Sigma Academy Syllabus for Green Belt [12.]. All of the techniques described in this syllabus will be reviewed in this book. We also advise you to use the accompanying 'Lean Six Sigma Green Belt & Black Belt Exercise book' with 120 exercises and answer keys (ISBN: 978-94-92240-02-6). Information about the Lean Six Sigma certification process is reviewed in Appendix A. We advise you to register this book at [www.lssa.eu](http://www.lssa.eu). After registering you will be able to download additional examples and templates.

Those who would like to apply Lean Six Sigma at the Yellow, Orange or Black Belt level are advised to read one of the other books in the series 'Climbing the Mountain' and use the accompanying exercise book within this series.

As the entire journey of becoming World Class cannot be taken overnight, you do not have to read this book entirely at once. We recommend that you start by reading the first three chapters. It will give insight into the five CIMM levels and at what level your organization is currently acting. This will clarify which chapters will be interesting for you to read and which techniques will be useful to apply. The CIMM framework will guide you to define the most appropriate approach for the situation your organization is currently in. Guidelines are given that will help you and your organization from the very beginning until World Class performance. I wish you the best of luck on your journey of 'Climbing the Mountain'.

To aid readability this book has been written with male gender pronouns, but in every case a female gender pronoun could equally be substituted.

This book can be used for two purposes. It acts as a guide for a Green Belt undertaking an improvement project and also for change agents aiming to improve the performance of their organization. In both cases the first chapter is elementary to read. Then, based on the different objectives, the focus may change depending on your role in the improvement process.

**How to execute a Lean Six Sigma DMAIC project:**

Those who follow a Lean Six Sigma Green Belt training and have been assigned an improvement project, should start by setting up a Project Charter [section 3.4] and then follow the DMAIC roadmap [section 3.2.3] to execute their project.

If the main project objective is about ‘Lead Time’ reduction, Table 6.1. demonstrates a number of recommended Lean tools to use in each DMAIC phase. Some of these tools are reviewed in chapter 4 and 5. The Lean tools in chapter 6 focus on efficient processes and First Time Right. Key tools are Value Stream Mapping and Waste reduction.

If the main project objective is about ‘Processes that perform outside specification’, Table 7.1. demonstrates a number of recommended Lean and Six Sigma tools to use in each DMAIC phase. The Measure and Analyze phase are very much data driven. The Improve phase can be data driven as well, or be a combination of tools that are discussed in earlier chapters. The focus of these type of projects is about reducing variation. Without data available it will be very difficult to execute a project on this level.

Keep in mind that each improvement project will be different and selecting the proper tools for a certain problem is something you learn by experience. Table 6.1 and 7.1 are suggested as a good starting point to help you out. In all cases managing the project and managing change are also critically important elements. Guidelines how to do this are discussed in chapters 2 and 3.

**How to bring your organization to a higher maturity level:**

Those who contribute to improve the performance of the entire department or organization, should start by reading the first three chapters. Defining the current maturity level of the organization is the starting point here. The ‘Continuous Improvement Maturity Model’ (CIMM) is discussed in section 1.4, followed by the Project selection process in section 1.5 and Team formation in section 3.1.

# About the author

Having graduated from the University of Twente (Enschede, the Netherlands) in 1994, Theisens (1969) developed his experience of process improvement as a consultant in the automotive and high-tech industry at Texas Instruments, Sensata Technologies, Thales and several other companies. During a period of 20 years he was given the opportunity to help a broad range of organizations deploying Continuous Improvement initiatives in a wide range of industries.

In a production plant in Mexico he led several 5S programs, Kaizen initiatives and a Lean transformation. In several plants in Europe and Malaysia he executed and coached around 50 Six Sigma breakthrough projects. At an automotive engineering department he supported the introduction of Design for Six Sigma.

Currently Theisens is Managing Director and Master Black Belt of a Consultancy and Training company in the Netherlands that is specialized in 'Business Improvement' and he is a guest lecturer at the University of Twente. Theisens is also founder of the LSSA - Lean Six Sigma Academy®, which is Scheme owner of the world wide Lean Six Sigma certification program of the APMG (APM Group Limited), iSQI (International Software Quality Institute) and ECQA (European Certification and Qualification Association).

*"In the beginning of my career I endured tough quality audits from several Japanese, German and American companies, which I think is the best way to understand the importance of quality and to learn what works to improve quality and what does not. In these years, I experienced that there are many different methods and tools for process improvement and also encountered discussions on which method is more effective; Kaizen, Lean, TOC, Six Sigma.... Some say that any problem can be solved with Six Sigma, while others says that Lean is the most effective methodology. I have always been looking to combine best practices."*

*"Currently many use Lean Six Sigma as a holistic approach, but are still struggling with the integration and selection of tools. Others have problems to implement Lean Six Sigma effectively because they underestimate the impact of change. I hope this book will be a guidance for many companies and organizations to define a process improvement strategy, to choose the proper tools and to enthuse others in their journey of becoming World Class."*

*"I would like to thank my colleagues for giving me the opportunity to share best practices, for reviewing this book and for supporting the development process of the 'Continuous Improvement Maturity Model' (CIMM™) that has been the basis for this book. I would also like to thank my family for supporting me to find the time to write this book."*

H.C. Theisens