Why is it so hard to gear up for large-scale and sustainable process improvements? Why is there so little impact from all the advice and improvement methods available? How could our company really get the most out of its process improvement potential from a total perspective without spending too much time and money? Do we even know the quality of our process improvement methods? Why for instance will the Toyota approach and six sigma not do when you have to respond to ever-increasing performance needs?

The questions above are admittedly crucial questions you might have posed when striving for a better company performance. Very few books provide you with a proper answer to these questions. This book does. After all, the world and thus the improvement needs have changed a lot since the days of the quality movement gurus and the origins of statistical control. The ultimate mission of the company processes is not to produce products or services as well as possible, but to continuously satisfy all company stakeholders in a sustainable way. How to lower the costs, increase the price of the products and services, and sell more, without constantly sacrificing the satisfaction of one or more stakeholders, is the equation modern process improvement methods solve.\(^1\) Trying to solve this fundamental business equation in today’s dynamic business environments shows clearly that the currently applied process improvement concepts, approaches, methods, and tools simply do not work. It is high time to improve process improvement itself to respond properly to more demanding improvement needs and more complex, dynamic, and fuzzy improvement settings.

The currently applied process improvement methods provide only a modest process improvement impact in practice, considering the time and money spent. There are simply too many issues, constraints, and obstacles that affect both the process improvement effectiveness and efficiency, which should be targeted properly at the same time to gain a great and sustainable improvement momentum. The methods applied, offering only some leverage to raise the process improvement

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\(^1\)This is the high-performance process improvement equation, shortened the HPPI equation.
efficiency, are thus heavily restricted by nature realizing only a fraction of the true potential related to process improvement. The old slogan “if you have a hammer, everything starts to look like a nail” proves true. Although common sense would suggest the use of a toolbox with different tools to address this concern, the basic problem would remain. Eventually, this becomes evident when you try to raise the ambition level of the improvement work and the related output, albeit the slogan needs a slight modification to suit the case: “if you have a toolbox, everything starts to look like a bolt, nail, or screw”. It is not a complete surprise that the process improvement toolbox contains these days so many different tools that you are not even able to move it by a forklift.

The overall objective of this book is to present a concept, the methods, and the solutions that take process improvement to the next ambition level. I call this level “high-performance process improvement” (HPPI) as opposite to traditional process improvement efforts using, for example, approaches such as hoshin kanri, six sigma, and lean, to mention just a few. The essence of the presented concept is a set of methods forming a generic HPPI process that is able to manage in a classy way all relevant process improvement activities under tight time and money constraints, even in complex and demanding settings. These process improvement activities include the required analyses and syntheses and the practical implementation. The analysis and synthesis parts cover the targeted value chain or network, the related companies or units, and the specific processes. The practical implementation, on the other hand, covers four distinct disciplines. These include the process improvement education and training (raise and maintenance of process improvement knowledge and skills), the realization of the improvement objects or improvement potential, and the follow-up. Besides, the book also targets briefly the issue of how to improve the strategy process and the related output to gain additional improvement momentum. Although primarily intended for companies and corporations, the book is almost as such suitable for persons working in the public sector. Changing terms such as “company,” “profits,” and “owners” to terms such as “organization,” “added-value,” and “the community,” respectively, helps a lot although certain substance issues may need a more profound interpretation to suit the case properly.

Companies of emerging markets, especially high-tech companies, have a special interest and motivation of catching-up and even overtaking the best in a global perspective. In such a setting, and any setting for that matter, it is crucial to consider both the performance and the outcome of the applied improvement methods. For emerging market companies, there is additional good news. Companies applying low-performance process improvement methods are often subject to organizational inertia, locking the companies in the low-performance process improvement illusion at least for years and, in some cases, even forever. Such mental inertia may be lacking in emerging market companies. In fact, this mental inertia difference is an overlooked asset that companies with a low mental inertia level should cultivate properly.\(^2\)

The methods and solutions presented in this book provide, in this regard,

\(^2\)Another type of mental inertia is observable when comparing the dynamics of small and large companies.
a systematic and result-oriented approach on how to achieve and sustain a high improvement traction — and thus also a high-performance business. In that sense, it is attractive to consider this new vista from a macro perspective. For example, a reasonably low number of properly educated and skilled experts running the HPPI process presented in this book, e.g. in the top-100 Chinese high-tech companies and their supplier and subcontractor networks, would work wonders in a country as great as China.

Toyota has improved its quality and operations during the past 60 years in a disciplined way. Other companies have had difficult times replicating this success because of the application of end-results and the reliance on low-performance process improvement methods, potentially even imperfectly applied. The lack of long-term discipline and the use of process improvement approaches and methods that do not improve the company culture properly as a built-in feature are additional issues that make it hard to replicate success. Understanding how to run the required process improvement activities at a high performance level using dedicated HPPI methods, instead of relying on (selective) individual brilliance and low-performance process improvement methods, is the critical key to get things on the right track for the benefit of all company stakeholders. With this in mind, the book targets a general and urgent concern with large and versatile implications. It contains three attractive features that realize the concept of high-performance process improvement in real-life:

- It is the first book to present and define the concepts of process improvement yield and total improvement yield, i.e. the yardsticks to evaluate the real-life process improvement traction that also provide an indication how well the company is able to solve the HPPI equation in practice
- It is the first book to present a verified — and method based — generic process improvement process that solves the major obstacles to high-performance process improvement from a total perspective (solving the HPPI equation)
- It is the first book to present a credible concept, including the methods and solutions, for catching-up and overtaking even the best companies in a systematic and result-oriented manner — and for the best to remain at the top.

The separate terms “high-performance” and “process improvement” are common terms, but the total phrase is not. What matters in the end is the substance behind the term and the real-life implications for you as a company stakeholder. These implications may affect you in multiple ways as a customer, employee, owner, supplier/partner, or investor — apart from the impact on you as a member of society. After all, prosperous companies, and well-functioning public organizations for that matter, are the basis for a prosperous society.

The book is to-the-point, substance-rich, and non-trivial, providing you with both a solid theoretical and practical perspective in this novel substance area. It should resist the ravages of time well, providing you with a proper improvement stimulus for a long period. The book provides also a source to return to for guidance and well-motivated vitalizing vistas.
One interesting feature of the book, which you may encounter, is that it tends to “grow” with each round of reading. For example, this “eye-opening” feature that is present in the analogies presented in Chap. 6, is an example of Pirsig’s transcendent quality definition (Pirsig 1974).

“Quality is neither mind nor matter, but a third entity independent of the two ... even though quality cannot be defined, you know what it is”.

The book contains many opportunities for an aha experience. This exciting attribute is, of course, very individual and depends on many issues. Once you encounter and experience this, the reading and learning experience delivered by the book start to be self-feeding, taking you on an intellectual journey with a new level of understanding as the mental destination. For me, one of the breakthrough aha experiences occurred when I was driving a car back in 1994. At that time, I realized that both the “hard” and “soft” components related to driving have their corresponding issues in the theory and practice of process improvement. This helped me a lot to focus on the crucial substance issues for achieving a detailed total picture of what knowledge and skills the companies actually need to run the process improvement efforts successfully. Another breakthrough aha experience occurred some years ago when I realized that the old slogan “you get what you measure” could also be applied to define, even in advance, the quality output of the improvement approaches and methods from a (total) process improvement perspective. That was when the concept of the process improvement yield was born. Also, the notion that all relevant process improvement activities could be run as a systematic and result-oriented process in a total perspective in addition to the established and well-known problem solving process (the Deming circle), was a breakthrough aha experience that provided the R&D work with a lot of motivation and innovative energy.

The genesis of the related R&D work behind this book traces back to 1993 when I wrote my M.Sc. Tech. Thesis at Siemens AG Zentralabteilung Produktion und Logistik in Munich, Germany. The findings and experience were that reaching a systematic and result-oriented mode of continuous improvement was hard to achieve in real-life despite of all the research and knowledge in the field. Back in 1993 and during the years until today, the approaches implemented by Toyota have been topical and considered state of the art. This led me to think that instead of trying to implement the methods used by Toyota, it would be more fruitful to consider how to design better process improvement approaches that would, in fact, provide momentum to catch-up and even overtake the best. The insight that lean management (lean production) was not an improvement method but the end-result of a set of improvement approaches utilized by Toyota changed my view totally. The kernel is consequently to create high-performance improvement methods, which increase the improvement performance (=the immediate output) that continuously improves the performance of the focus processes in terms of time, quality,

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3Central Department Production and Logistics.
and costs (=the outcome). The issue is not to copy or implement end-results but to increase continuously the ambition levels of the improvement activities, the focus settings and the produced products and services. How to do this under (very) tight time, quality, and cost constraints has been unsolved so far. When I analyzed closer the methods used by Toyota and a broad variety of other approaches as well, I discovered severe shortages and deficits. Strangely enough, these shortages and deficits have received little attention during the years. I think many people have taken the Toyota approach, and in some cases six sigma, as the last word as very few, if any, have challenged this view properly.

This book consists of seven chapters. I wanted deliberately to have seven chapters to acknowledge and honor the origins of quality and process improvement. Seven is, as you might now, the lucky or magic number in Japan, and it relates to process improvement via the seven-step problem solving process (the PDCA logic) that the seven quality tools support. Japan, and more specifically Toyota, has been the breeding ground of the development and application of the first generation structurized improvement methods that took the improvement activities to the first ambition level. It took me 15 years of “nana-korobi, ya-oki”4 to create a decent set of HPPI methods and solutions. That is statistically one fall or rise per year! This is probably not a world record, but surely enough for me to understand the essence of that concept!

The first chapter outlines in a compressed form the main thread of the book. The second chapter introduces the main concepts and definitions that provide the foundation of later chapters. The chapter functions also as a brief refresher course for those who have forgotten the basic concepts related to process improvement. The third chapter is for those devoted persons who would like to know why and how I designed certain issues the way they are. In that sense, I would like to stress the concept of T and V Values that I will reflect upon in practical terms at the end of the core chapters of this book, i.e., Chaps. 4–6. These chapters present the three main phases or sub-processes of the HPPI process. The presentation logic is to communicate the substance from a method point of view and support this presentation with cases. Specifically, Chap. 5 should be read with proper care and reflection, as this is probably the most important and mind-challenging chapter of the book. The presentation is more profound than the other chapters and includes many descriptive and versatile cases. For those of you especially interested in the quality and output of the due diligence process in company mergers and acquisitions or partner/supplier/subcontractor selections, I would like to recommend reading Chaps. 4 and 5 with proper care and reflection. Chapter 5 may be especially interesting for those of you looking for a high-class method and output to define, analyze, and improve process based IT/ERP systems in the own company or client companies. Chapter 6 provides an interesting approach and method on how to deal with process improvement education and training besides the realization of the true improvement

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4Japanese meaning “seven falls, eight getting up”, i.e. if you fall down seven times, get up eight times. It is an encouragement to persevere.
potential and the follow-up. The approach benefits from analogies and visualized stories and cases that boost considerably the learning and the learning experience. IT based solutions and innovative approaches to knowledge and skill transfer are becoming more important than ever, as they provide the means to realize the concept of mass customization for the benefit of meeting the education and training requirements related to HPPI. The final chapter presents two derivative solutions or special cases of the HPPI process. The first issue is the issue of how to improve the company strategy and the related strategy process, and the other issue considers two types of “acid tests” that complement the HPPI process presented in previous chapters. The book ends with some future outlines of HPPI, providing you with some insights related to future opportunities and challenges related to HPPI. The individual chapters of the book provide both a broad and deep insight into the areas considered. These areas form together a coherent and solid basis for truly understanding the essence of modern process improvement.

Many company persons regard, mostly rightfully, process improvement efforts as tedious exercises lowering the share of “real work”. With the right methods applied in the right way, and results delivered promptly, process improvement efforts become interesting and even enjoyable. The world is not what it used to be, and the process improvement efforts truly need to contribute to keeping the companies on the right track – despite turbulence, global competition, more demanding stakeholder needs, and networks and processes that are more complex. Distinguishing the vital few improvement objects (problems) from the trivial many and implementing the improvement objects properly have never been this hard. If you think process improvement is hard these days, wait until the Next Generation (the Millennial Generation) starts to enter the corporate scene in larger masses. The time is now to get a solid perspective on modern process improvement and to consider how to organize and run the process improvement activities properly.

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