

About This Guidebook

Over the past decade, tremendous progress has been made toward the elimination of waste on the factory floor. It is not surprising, therefore, that as lean manufacturing has matured, attention has been drawn to the upstream process of new product development. After all, even the most efficient factory cannot design the products that it produces. If new product introductions are being launched “fat and slow” then all the lean manufacturing in the world cannot ensure a company’s long-term success. Indeed, implementation of lean manufacturing is not enough: competitiveness depends on establishing a product development process that can feed the factory with great, cost-optimized products at a lightening pace.

Herein lies the challenge: product development is different from manufacturing - fundamentally, inexorably different. Yet the compelling need to eliminate waste remains the same. Why is it different? Let me count the ways. Product development is cross-functional, making communication, consensus, and coordination, both complex and difficult. Customer requirements don’t come in the form of drawings and work instructions. Instead they often arrive through ambiguous channels, in a language that requires interpretation and translation. While manufacturing is inherently a recurring process, the design of each new product is, at least in some respects, unique. Risks are higher, the probability of success is lower, and showstoppers such as excessive cost and intractable new technologies lurk around every corner.

The very good news is that, although product development is truly a different animal from operations, much of the knowledge and indeed many of the tools of lean manufacturing can also be applied to this critical upstream process...with a little modification. As you will see in the pages that follow, a practical, proven, and immediately deployable toolbox has evolved over the past decade that can help any firm achieve significant reductions in time-to-market. Moreover, by following a systematic approach to implementation, achieving these gains can be relatively straightforward.

This book is the second in a series of practical manuals for eliminating waste throughout the design and development process. The first installment, entitled *The Lean Design Guidebook*, focuses on strategies for eliminating unnecessary cost. This latest guidebook’s aim is to eliminate *wasted time*, in both the broad, strategic sense of time-to-market, as well as in the more tactical sense of the day-to-day activities of design team members. The intended audience is practitioners: scholars should be warned that they might find their hands a bit dirty after reading this book. The foundation for the material that follows is rooted in an exhaustive study of the literature, but it is the implementation

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experiences and improvement successes of dozens of firms that give the lean tools and methods described in this guidebook their credibility. Executives and managers should view this manual as a comprehensive roadmap to process improvement and strategic deployment. Team leaders will learn practical time-saving tools and detailed instructions on how to use them. Working-level designers and developers will discover many ways to make their daily efforts more efficient, of higher value, and frankly, a lot more fun. Finally, those of you who are consulting and training professionals will find this guidebook to be an invaluable resource in crafting your own customized improvement programs.

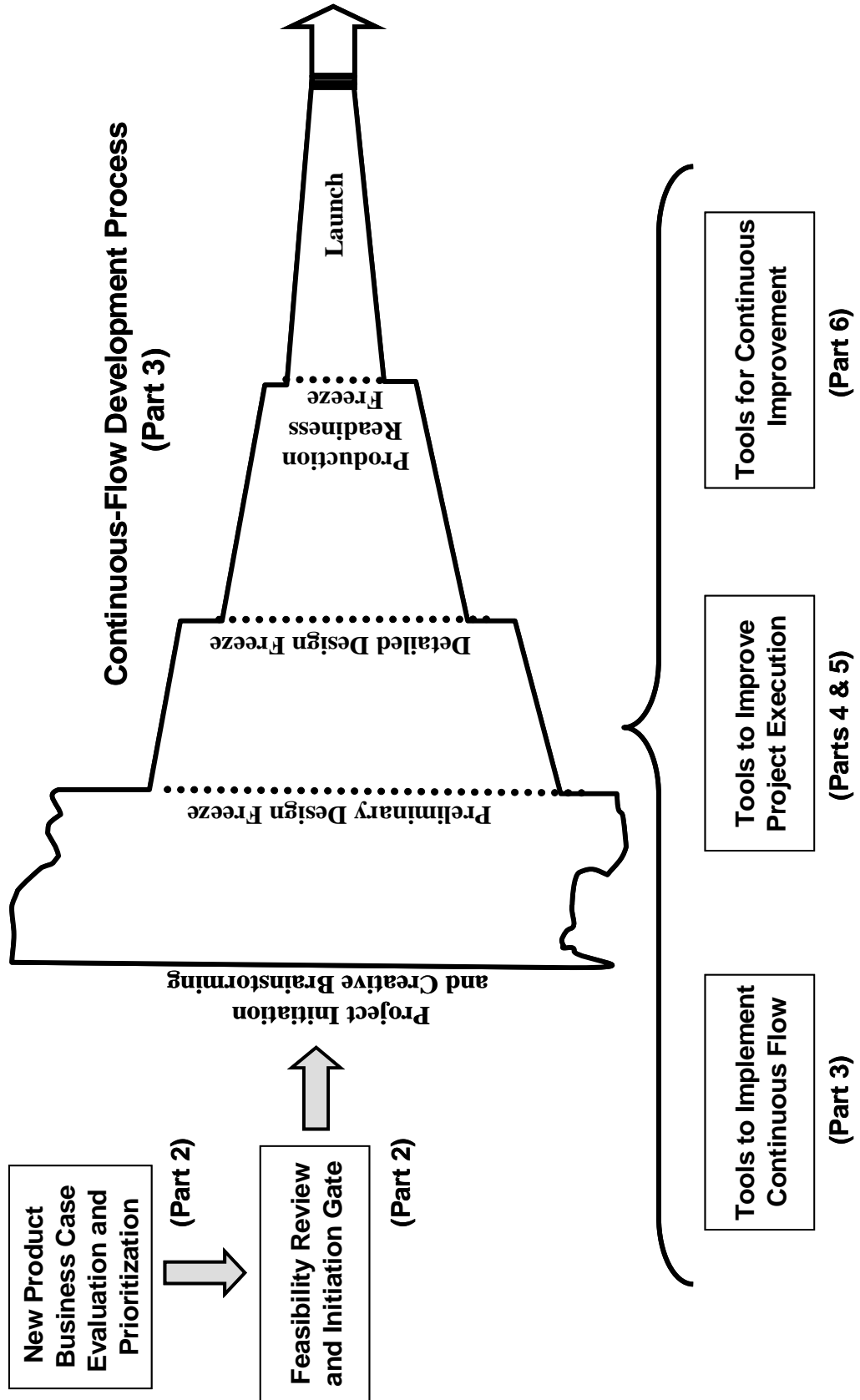
The material is presented in chronological order from the earliest stages of project selection and prioritization to the transition of a new product design to the factory floor.

The term “lean method” is used to identify individual tools or techniques that attack a specific type of waste (e.g., endless meetings, poor communication, disruptive change, e-mail overload, etc.). Those of you who have read *The Lean Design Guidebook* will notice that there is a small but necessary overlap of material. However, both the figures and the text within these overlapping sections have been recreated with a fresh, updated, and time-sensitive perspective, so they are worth a second look.

The writing style is fast and informal, with extensive graphics (over 150 figures and drawings), and a bit of humor thrown in to keep both the reader and the author stimulated. Important concepts are illuminated through a combination of step-by-step instructions and real-world examples. Although the actual experiences of many firms are described, their names have been omitted to protect their privacy and competitive advantage. Near the end of the guidebook, I've identified some useful resources for the serious practitioner of lean product development. A section entitled “Recommended Reading in Lean Product Development” provides a sampling of books that I believe significantly contribute to the field. The bibliography lists over eighty additional references that were used as source material. Finally, a glossary is provided to ensure that we all share a common language.

In closing, I will offer a brief motivational speech. All of us in the lean community know that Toyota Motor Company is great (okay, “great” may not be a strong enough word), but many other fine firms have independently solved problems of waste, risk, and time-to-market in unique and valuable ways. Certainly Toyota's insights are deeply embedded in this material, but the innovations and successes of many other firms are also represented – truly a “best-in-class” approach. Yet reading about other firms' successes can take you only so far. Why not step out on your own and achieve some of your own lean breakthroughs? All it takes is some independent thinking and problem-solving ability to adapt the lean toolbox presented herein to your firm's specific needs. This guidebook will help you and your firm make significant progress toward faster time-to-market and greater product development efficiency...wherever you may be on the path to perfection.

Lean Product Development “Big Picture”



***“Common sense is something
that you already know,
once someone points
it out to you”***

Ron Mascitelli