The Toyota Product Development System Integrating People Process And Technology

How to speed up business processes, improve quality, and cut costs in any industry In factories around the world, Toyota consistently makes the highest-quality cars with the fewest defects of any competing manufacturer, while using fewer man-hours, less on-hand inventory, and half the floor space of its competitors. The Toyota Way is the first book for a general audience that explains the management principles and business philosophy behind Toyota's worldwide reputation for quality and reliability. Complete with profiles of organizations that have successfully adopted Toyota's principles, this book shows managers in every industry how to improve business processes by: Eliminating wasted time and resources Building quality into workplace systems Finding low-cost but reliable alternatives to expensive new technology Producing in small quantities Turning every employee into a qualitycontrol inspector

This is the "green book" that started it all -- the first book in English on JIT, written from the engineer's viewpoint. When Omark Industries bought 500 copies and studied it companywide, Omark became the American pioneer in JIT. Here is Dr. Shingo's classic industrial engineering rationale for the priority of process-based over operational improvements in manufacturing. He explains the basic mechanisms of the Toyota production system, examines production as a functional network of processes and operations, and then discusses the mechanism necessary to make JIT possible in any manufacturing plant. Provides original source material on Just-In-Time Demonstrates new ways to think about profit, inventory, waste, and productivity Explains the principles of leveling, standard work procedures, multi-machine handling, supplier relations, and much more If you are a serious student of manufacturing, you will benefit greatly from reading this primary resource on the powerful fundamentals of JIT.

The Missing Link to Toyota-Style Success—LEAN LEADERSHIP Winner of the 2012 Shingo Research and Professional Publications Award "This great book reveals the secret ingredient to lean success: lean leadership. Not only is it a pleasure to read, but it is also deep and enlightening. This book is an absolute must-read for anyone interested in lean: it's both an eye opener and a game changer." —Michael Ballé, Ph.D., coauthor of The Gold Mine and The Lean Manager "This will immediately be recognized as the most important book ever published to understand and guide 'True North Lean' and the goal of perpetual business excellence." —Ross E. Robson, President and CEO, DnR Lean, LLC, and the original Director of The Shingo Prize "An excellent book that will shape leadership development for decades to come." —Karen Martin, Principal, Karen Martin & Associates, and author of The Kaizen Event Planner About the Book: TOYOTA. The name signifies greatness— world-class cars and game-changing business thinking. One key to the Toyota Motor Company's unprecedented success is its famous production system and its lesser-known product development program. These strategies consider the end user at every turn and have become the model for the global lean business movement. All too often, organizations adopting lean miss the most critical ingredient—lean leadership. Toyota makes enormous investments in carefully selecting and intensively developing leaders who fit its unique philosophy and culture. Thanks to the company's lean leadership approach, explains Toyota Way author Jeffrey Liker and former Toyota executive Gary Convis, the celebrated carmaker has set into motion a drive for continuous improvement at all levels of its business. This has allowed for: Constant growth: Toyota increased profitability for 58 consecutive years—slowing down only in the face of 2008's worldwide financial difficulties, the recall crisis, and the worst Japanese earthquake of the century. Unstoppable inventiveness: Toyota's approach to innovative thinking and problem solving has resulted in top industry ratings and incredible customer satisfaction, while allowing the company

to weather these three crises in rapid succession and to come out stronger. Strong branding and respect: Toyota's reputation was instrumental in the company's ability to withstand the recalls-driven media storm of 2010. But what looked to some to be a sinking ship is once again running under a full head of steam. Perhaps the Toyota culture had weakened, but lean leadership was the beacon that showed the way back. In fact, writes Liker, the company is "as good and perhaps a better model for lean leadership than it ever has been." of innovation and growth. Yet, Industry Week reports that just 2 percent of companies using lean processes can likewise claim to have had long-term success. What the other 98 percent lack is unified leadership with a common method and philosophy. If you want to get lean, you have to take it to the leadership level. The Toyota Way to Lean Leadership shows you how.

From near-extinction in the early eighties, Harley-Davidson rose to worldwide recognition and is still today one of the great, iconic American motorcycle brands. In this insider guide, former Harley-Davidson executive Dantar Oosterwal offers an exclusive look at how Harley-Davidson was able to adapt in an ever-changing world to stay on top and stay in existence. In The Lean Machine, readers learn about Harley-Davidson's secret weapon and go-to formula for outstanding success: Knowledge-Based Product Development. Rooted in Japanese productivity improvement techniques, this method helped Harley realize an unprecedented fourfold increase in throughput in half the time--powering annual growth of more than ten percent. Winner of the 2017 Shingo Prize for Literature, The Lean Machine--which is part business journal, part analysis, and part step-by-step toolkit--takes readers through the day-to-day transformation at Harley and identifies universal change and improvement issues so that companies in any industry can incorporate this game-changing system--with predictably excellent results.

In 2003 Michael Kennedy's Product Development for the Lean Enterprise was published and promptly turned product development in major corporations on its head. Now, five years later, comes a continuation of that book, including case histories that identify the pitfalls and lessons learned in implementing Toyota's product development system. The authors also show how Toyota's set-based learning system can be adapted and adopted by other areas of a business in order to produce major advantages over the competition. Whether a group of engineers is developing new cars, software applications, aerospace equipment, kitchen appliances, controls, sensors, or any of hundreds of different items, the process they follow is pretty much the same, except in one company - Toyota, perhaps the most innovative and highly respected car company on the planet. Companies that are early adopters of the Toyota system are certain to realize tremendous advantages over their competitors. This is a change that is coming to businesses everywhere and this book shows the way. It is a must-read for anyone in management.

Toyota doesn't just produce cars; it produces talented people. In the international bestseller, The Toyota Way, Jeffrey Liker explained Toyota's remarkable success through a 4P model for excellence-Philosophy, People, Problem Solving, and Process. Liker, with coauthor David Meier, provided deeper insight into the practical application of the principles in The Toyota Way Fieldbook. Now, these authorities on Toyota reveal how you can develop talented people and achieve incredible results in your company. Toyota Talent walks you through the rigorous methodology used by this global powerhouse to grow high-performing individuals from within. Beginning with a review of Toyota's landmark approach to developing people, the authors illustrate the critical importance of creating a learning and teaching culture in your organization. They provide specific examples necessary to train employees in all areas-from the shop floor to engineering to staff members in service organizations-and show you how to support and encourage every individual to reach his or her top potential. Toyota Talent provides you with the inside knowledge you need to Identify your development needs and create a training plan Understand the various types of work

and how to break complicated jobs into teachable skills Set behavioral expectations by properly preparing your workplace Recognize and develop potential trainers within your workforce Effectively educate nonmanufacturing employees and members of the staff Develop internal Lean Manufacturing experts Guiding you with expert tips and training aids, as well as real-world examples drawn from the authors' two decades of research and field work, Liker and Meier show you how to get the most out of people who live and breathe your company's philosophy-and who work together toward a common goal.

The world's bestselling Lean expert shows service-based organizations how to go Lean, gain value, and get results—The Toyota Way. A must-read for service professionals of every level, this essential book takes the proven Lean principles of the bestselling Toyota Way series and applies them directly to the industries where quality of service is crucial for success. Jeff Liker and Karyn Ross show you how to develop Lean practices throughout your organization using the famous 4P model. Whether you are an executive, manager, consultant, or frontline worker who deals with customers every day, you'll learn how take advantage of all Lean has to offer. With this book as your guide, you'll gain a clear understanding of Lean and discover the principles, practices and tools needed to develop people and processes that surprise and delight each of your customers. These ground-tested techniques are designed to help you make continuous improvements in your services, streamline your operations, and add ever-increasing value to your customers. Fascinating case studies of Lean-driven success in a range of service industries, including healthcare, insurance, financial services, and telecommunications, illustrate that Lean principles and practices work as well in services as they do in manufacturing. Drawn from original research and real-world examples, The Toyota Way to Service Excellence will help you make the leap to Lean.

The ability to bring new and innovative products to market rapidly is the prime critical competence for any successful consumer-driven company. All industries, especially automotive, are slashing product development lead times in the current hyper-competitive marketplace. This book is the first to thoroughly examine and analyze the truly effective product development methodology that has made Toyota the most forward-thinking company in the automotive industry. Winner of the 2007 Shingo Prize For Excellence In Manufacturing Research! In The Toyota Product Development System: Integrating People, Process, and Technology, James Morgan and Jeffrey Liker compare and contrast the world-class product development process of Toyota with that of a U.S. competitor. They use extensive examples from Toyota and the U.S. competitor to demonstrate value stream mapping as an extraordinarily powerful tool for continuous improvement. Through examples and case studies, this book illustrates specific techniques and proven practices for dealing with challenges associated with product development, such as synchronizing multiple disciplines, multiple function workload leveling, compound process variation, effective technology integration, and knowledge management. Readers of this book can focus on optimizing the entire product development value stream rather than focus on a specific tool or technology for local improvements.

Use Kanban to maximize efficiency, predictability, quality, and value With Kanban, every minute you spend on a software project can add value for customers. One book can help you achieve this goal: Agile Project Management with Kanban. Author Eric Brechner pioneered Kanban within the Xbox engineering team at Microsoft. Now he shows you exactly how to make it work for your team. Think of this book as "Kanban in a box": open it, read the quickstart guide, and you're up and running fast. As you gain experience, Brechner reveals powerful techniques for right-sizing teams, estimating, meeting deadlines, deploying components and services, adapting or evolving from Scrum or traditional Waterfall, and more. For every step of your journey, you'll find

pragmatic advice, useful checklists, and actionable lessons. This truly is "Kanban in a box": all you need to deliver breakthrough value and quality. Use Kanban techniques to: Start delivering continuous value with your current team and project Master five quick steps for completing work backlogs Plan and staff new projects more effectively Minimize work in progress and quickly adjust to change Eliminate artificial meetings and prolonged stabilization Improve and enhance customer engagement Visualize workflow and fix revealed bottlenecks Drive quality upstream Integrate Kanban into large projects Optimize sustained engineering (contributed by James Waletzky) Expand Kanban beyond software development

Si usted quiere entender como se origino el sistema de producci?n Toyota y por que tiene exito, debe leer este libro. Aqui encontrara una introducci?n avanzada del justo a tiempo. El mundo le debe mucho a Taiichi Ohno. Nos ha demostrado como fbricar con mayor eficacia, como reducir costos, como producir una mayor calidad, y a examinar atentamente como nosotros, en nuestra calidad de seres humanos, trabajamos en una fbrica. El relato que Ohno cuenta en este libro es brillante. Deberia ser leido por todos los gerentes. No es solo un relato acerca de la fabricaci?n; sino tambien sobre como dirigir exitosamente una empresa.

Visible knowledge is a tool nearly lost in the West, but it has been used to great effect by Toyota in its 50-year march from noncompetitiveness to its current status as the second largest automobile company in the world. It is key for the 50% growth in market share Toyota plans for this decade despite worldwide overcapacity in the auto business. This book presents the reader with a systematic approach to create, capture, and display knowledge in a way that allows development teams to optimize the design of their products and production processes. Visible knowledge not only applies to knowledge management, but provides a means of collaboration to facilitate better decision-making in the development process. This book has evolved out of a manuscript that Allen Ward, the foremost U.S. expert on lean product development, was writing at the time of his untimely death. It is not intended to be a treatise of Lean product development methods. Quite the opposite—it is focused on one small piece, "visible knowledge." It is, however, one technique that Dantar Oosterwal and Durward Sobek have found to be very effective at Harley-Davidson and other places, and a tool that can make a difference whether used by itself or as a starting point for a larger journey into Lean product development. In completing this work, Oosterwal and Sobek kept the aim true to Allen's original intent. The preface and first three chapters are essentially Allen's original intellectual contribution. They have made editorial changes to improve readability and clarity of explanation. Throughout, they have attempted to preserve Allen's voice in the writing, even keeping the narrative in first person as it was originally written. They have also added a fourth chapter that highlights some practical ways to apply the ideas presented in earlier chapters, illustrated with case examples from their experience.

This is a design guide for architects, engineers and contractors concerning the principles and application of design management. This book addresses the value that design management and design managers contribute to construction projects. As part of the PocketArchitecture series, Design Management is divided into two parts: Fundamentals and Application. In Part 1, Fundamentals, the chapters address the why, what, how and when questions in a simple and informative style, illustrated with vignettes from

design management professionals. In Part 2, case studies from Colombia, Norway and the USA represent unique examples of the application of design management. This book offers a concise overview of design management for postgraduate students and early career design managers.

"The P-51 Mustang—perhaps the finest piston engine fighter ever built—was designed and put into flight in just a few months. Specifications were finalized on March 15, 1940; the airfoil prototype was complete on September 9; and the aircraft made its maiden flight on October 26. Now that is a lean development process!" —Allen Ward and Durward Sobek, commenting on the development of the P-51 Mustang and its exemplary use of trade-off curves. Shingo Research and Professional Publication Award recipient, 2008 Despite attempts to interpret and apply lean product development techniques, companies still struggle with design quality problems, long lead times, and high development costs. To be successful, lean product development must go beyond techniques, technologies, conventional concurrent engineering methods, standardized engineering work, and heavyweight project managers. Allen Ward showed the way. In a truly groundbreaking first edition of Lean Product and Process Development, Ward delivered -- with passion and penetrating insights that cannot be found elsewhere -- a comprehensive view of lean principles for developing and sustaining product and process development. In the second edition, Durward Sobek, professor of Mechanical and Industrial Engineering at Montana State University—and one of Ward's premier students—edits and reorganizes the original text to make it more accessible and actionable. This new edition builds on the first one by: Adding five in-depth and inspiring case studies. Including insightful new examples and illustrations. Updating concepts and tools based on recent developments in product development. Expanding the discussion around the critical concept of set-based concurrent engineering. Adding a more detailed table of contents and an index to make the book more accessible and user-friendly. The True Purpose of Product Development Ward's core thesis is that the very aim of the product development process is to create profitable operational value streams, and that the key to doing so predictably, efficiently, and effectively is to create useable knowledge. Creating useable knowledge requires learning, so Ward also creates a basic learning model for development. But Ward not only describes the technical tools needed to make lean product and process development actually work. He also delineates the management system, management behaviors, and mental models needed. In this breakthrough text, Ward: Asks fundamental questions about the purpose and "value added" in product development so you gain a crystal clear understanding of essential issues. Shows you how to find the most common forms of "knowledge waste" that plagues product development. Identifies four "cornerstones" of lean product development gleaned from the practices of successful companies like Toyota and its partners, and explains how they differ from conventional practices. Gives you specific, practical recommendations for establishing your own lean development processes. Melds observations of effective teamwork from his military background, engineering fundamentals from his education and personal experience, design methodology from his research, and theories about management and learning from his study of history and experiences with customers. Changes your thinking forever about product development.

The Just-in-time (JIT) manufacturing system is an internal system in use by its founder, Toyota Motor Corporation, but it has taken

on a new look. Toyota Production System, Second Edition systematically describes the changes that have occurred to the most efficient production system in use today. Since the publication of the first edition of this book in 1983, Toyota has integrated JIT with computer integrated manufacturing technology and a strategic informa tion system. The JIT goal of producing the necessary items in the necessary quantity at the necessary time is an internal driver of production and operations management. The addition of computer integrated technology (including expert systems by artificial intelligence) and information systems technology serve to further reduce costs, increase quality, and improve lead time. The new Toyota production system considers how to adapt production schedules to the demand changes in the marketplace while satisfying the goals of low cost, high quality, and timely delivery. The first edition of this book, Toyota Production System, published in 1983, is the basis for this book. It was translated into many languages including Spanish, Russian, Italian, Japanese, etc., and has played a definite role in inspiring production management systems throughout the world.

Here is the first comprehensive approach to managing design-in-process inventory from the bestselling author of "Developing Products in Half the Time". Donald Reinertsen reveals a transparent system for tracking, measuring, and managing invisible "design-in-process" inventory to achieve lower costs, higher profits, and better processes. 20 line drawings.

One million. That's how many new ideas the Toyota organization receives from its employees every year. These ideas come from every level of the organization - from the factory floors to the corporate suites. And organizations all over the world want to learn how they do it. Now Matthew May, Senior Advisor to the University of Toyota, reveals how any company can create an environment of every day innovation and achieve the elegant solutions found only on the far side of complexity. A tactical guide for team-based innovation, THE ELEGANT SOLUTION delivers the formula to the three principles and ten practices that drive business creativity. Innovation isn't just about technology - it's about value, opportunity and impact. When a company embeds a real discipline around the pursuit of perfection, the sky is the limit. Dozens of case studies (from Toyota and other companies) illustrate the power and universality of these concepts; a unique 'clamshell strategy' prepares managers to ensure organizational success. At once a thought-shaper, a playmaker, and a taskmaster, THE ELEGANT SOLUTION is a practical field manual for everyone in corporate life.

This book presents a series of high performance product design (PD) and development best practices that can create or improve product development organization. In contrast to other books that focus only on Toyota or other individual companies applying lean IPD, this book explains the lean philosophy more broadly and includes discussions of systems engineering, design for X (DFX), agile development, integrated product development, and project management. The "Lean Journey" proposed here takes a value-centric approach, where the lean principles are applied to PD to allow the tools and methods selected to emerge from observation of the individual characteristics of each enterprise. This means that understanding lean product development (LPD) is not about knowing which tools are available but knowing how to apply the philosophy. The book comes with an accompanying manual with problems and solutions available on Springer Extras.

Whether a group of engineers is developing new cars, software applications, aerospace equipment, kitchen appliances, controls, sensors, or any of hundreds of different items, the process they follow is pretty much the same. Except in one company - Toyota, perhaps the most innovative and highly respected car company on the planet. What is most startling is that Toyota's product development engineers are four times as productive as their counterparts in other companies, according to a study by the National Center for Manufacturing Sciences. Most follow a linear process in developing new products. Toyota's engineers do not. As this book reveals and explains, Toyota's development engineers rely on a development paradigm that is totally different than that found in the West. Companies that are early adopters of the Toyota product development system are certain to realize tremendous advantages over their competitors. This is a change that is coming to businesses everywhere and this book shows the way. It is a must-read for anyone in management.

As competition in the manufacturing sector intensifies, excellence in new product development has become a mandate. Renowned author, educator, and lean product development expert Ron Mascitelli takes the reader through his Event-Driven Lean Product Development process, from its beginnings in innovation, effective problem-solving, knowledge creation, and organizational learning, through to the rapid commercialization of highly successful products. This proven and practical approach balances all aspects of market success: customer value, profitability, time-to-market, and quality. Specific topics covered in this Event-Driven Lean Product Development framework include: - Selecting and prioritizing new product opportunities that have a high probability of market success.- Optimizing the productivity of finite development resources, and arbitrating resource conflicts in a multi-project environment.- Implementation of a practical, flexible, event-driven process that ensures the highest degree of cross-functional collaboration at every stage in new product development.- Managing the day-to-day efforts of developers and project teams through Visual Workflow Management.- Capturing the voice-of-the-customer in every new product by systematically identifying and ranking differentiation opportunities.- Building a realistic project schedule that is created and owned by the developers themselves.- Proactively identifying project risks and mitigating them through systematic (A3) problem-solving.- Employing rapid cycles of learning and set-based design to close knowledge gaps and build a foundation of high-value knowledge for future projects.- Implementing the Production Process Preparation (3P) methodology to maximize the manufacturability and quality of each new product. Mastering Lean Product Development represents the definitive roadmap to achieving breakthroughs in speed, efficiency, and customer value for any firm engaged in new product development.

Motivated by Toyota's product development capabilities, Daniel Sörensen examines the question of how much to invest in pursuing parallel design alternatives. A real option to switch is modeled accounting for interproject correlations. Based upon economic theory, five principles for value-maximizing the product development process are presented.

Examines Japan's innovative, highly successful production methods

Lean Process Creation teaches the specific frames—the 6CON model—to look through to properly design any new process while optimizing the value-creating resources. The framing is applicable to create any process that involves people, technology, or

equipment—whether the application is in manufacturing, healthcare, services, retail, or other industries. If you have a process, this approach will help. The result is 30% to 50% improvement in first-time quality, customer lead time, capital efficiency, labor productivity, and floorspace that could add up to millions of dollars saved per year. More important, it will increase both employee and customer satisfaction. The book details a case study from a manufacturing standpoint, starting with a tangible example to reinforce the 6CON model. This is the first book written from this viewpoint—connecting a realistic transformation with the detailed technical challenges, as well as the engagement of the stakeholders, each with their own bias. Key points and must-do actions are sprinkled throughout the case study to reinforce learning from the specific to the general. In this study, an empowered working team is charged with developing a new production line for a critical new product. As the story unfolds, they create an improved process that saves $5.6 million (10x payback on upfront resource investment) over the short life cycle of the product, as well as other measurable benefits in quality, ergonomics, and delivery. To an even greater benefit, they establish a new way of working that can be applied to all future process creation activities. Some organizations have tried their version of Lean process design following a formula or cookie-cutter approach. But true Lean process design goes well beyond forcing concepts and slogans into every situation. It is purposeful, scientific, and adaptable because every situation starts with a unique current state. In addition, Lean process design must include both the technical and social aspects, as they are essential to sustaining and improving any system. Observing the recurring problem of reworking processes that were newly launched brought the authors to the conclusion that a practical book focused on introducing the critical frames of Lean process creation was needed. This book enables readers to consider the details within each frame that must be addressed to create a Lean process. No slogans, no absolutes. Real thinking is required. This type of thinking is best learned from an example, so the authors provide this case study to demonstrate the thinking that should be applied to any process. High volume or low, simple or complex mix, manufacturing or service/transactional—the framing and thinking works. Along with the thinking, readers are enabled to derive their own future states. This is demonstrated in the story that surrounds the case study.

"Success is Assured" was born from a pair using those design practices over a century ago: The Wright Brothers. They set about methodically learning the causal relationships between the different design decisions they needed to make and the performance of the airplane. The Wright Brothers fundamentally transformed the front end of development into a sharply focused learning and decision-making process, and thereby eliminated the late - process rework in which their competition was stuck. Similarly, Toyota built an amazing manual product development system that consistently created a cadence of high quality products that customers want. Myriads of Lean principles, jargon, and tools have been introduced and applied with minimal impact on design loopbacks, engineering productivity, and knowledge reuse within small to midsize engineering companies – and almost no penetration within highly complex engineering companies. This book teaches methodologies to relentlessly expose knowledge gaps and trade-offs early and optimize results before detailed design begins, thereby avoiding the expensive firefighting and engineering rework that consume most of our engineering capacity today. This book teaches new thinking and methodologies to convert the chaotic front

end of product development into a convergent process of set-based learning and continuous innovation – a game changer for companies that depend upon a steady flow of innovative products. Watch this video and understand how to consistently satisfy your customers on-time and on-budget! Visit www.SuccessIsAssured.com

Innovation is the engine that drives much of what is called success in business and industry. Incorporating the fundamental principles of lean manufacturing and the rules and behaviors of structured innovation into the development process, innovative lean development unleashes the creativity of everyone involved in developing new products, services, or processes; speeds the process; and leads to higher quality. Written by two experts who have successfully made the road by walking it for more than 20 years, Innovative Lean Development: How to Create, Implement and Maintain a Learning Culture Using Fast Learning Cycles focuses on six key areas necessary for dramatic development. It shows you how to — 1. Identify and fill user gaps 2. Use multiple learning cycles 3. Stabilize the development process 4. Capture knowledge 5. Use rapid prototyping 6. Apply lean management principles, including learning cycles and visual boards Applying these principles, the authors have helped development teams cut development time in half and increase speed to market, while delivering award-winning, quality solutions. In this manual, they share those examples while providing a road map that all companies can follow to reach a lean development culture, one where creative thinking and practice converge in ways that lead to innovation, improvement, and success.

Using Toyota's principles for product and process development, this book focuses the implementation of the Lean system during the past 10 years in dozens of corporations across various industries. The book highlights all steps on the journey from common trouble area to remarkable results. As it is written by a manager for other managers, it contains real work discoveries and insights. The author provides case studies from many different fields of application. The reader gains insight on US and European companies that successfully streamlined their innovation and product-development processes. These companies have overcome difficult periods and major challenges thanks to the ability to innovate with new Lean methodologies and, above all, a new workplace culture and mindset. The goal of this book is to help managers successfully apply Lean principles in the innovation and development area of their company while benefitting from the author's lessons learned during his many years of capitalized experience. This book provides a comprehensive framework that supports, step-by-step, the successful application of Lean principles in the innovation and development areas of the company. Readers learn how to drastically reduce the time required to develop products and discover and eliminate hidden costs and critical waste while increasing value for customers.

Project Management in Product Development: Leadership Skills and Management Techniques to Deliver Great Products is written for new and aspiring project managers in product development. Although texts on project management are common, the material presented here is unique, instead focusing on product development, a challenging segment of project management because of the high level of uncertainty, the need for a robust set of problem-solving techniques,

and a demand for broad cross-functional teams. The book also focuses on more than just project management techniques, including a thorough treatment of transformational and transactional leadership. Other topics covered include problem-solving techniques, development, and continuous improvement of processes required in product development, risk recognition and management, and proper communication with mangers and other stakeholders. Finally, project management techniques used in product development are presented, including the critical path method, scrum and XP, and Kanban/lean project development, along with the strengths and weaknesses of each. Provides ways to successfully manage product development projects by teaching traditional and advanced project management techniques like Gantt, CPM, Agile, Lean, and others Covers transformational and transactional leadership, how to create a vision and engage the team, as well as tactics on how to manage a complex set of tasks Uses a practical, common sense approach to the day-to-day activities of a project manager, including project planning, project process development, problem-solving, project portfolio management, reporting, and more Presents a thorough comparison of popular project management tools Includes many examples, cases, and side-bars that are included throughout the book

The Toyota Way Fieldbook is a companion to the international bestseller The Toyota Way. The Toyota Way Fieldbook builds on the philosophical aspects of Toyota's operating systems by detailing the concepts and providing practical examples for application that leaders need to bring Toyota's success-proven practices to life in any organization. The Toyota Way Fieldbook will help other companies learn from Toyota and develop systems that fit their unique cultures. The book begins with a review of the principles of the Toyota Way through the 4Ps model-Philosophy, Processes, People and Partners, and Problem Solving. Readers looking to learn from Toyota's lean systems will be provided with the inside knowledge they need to Define the companies purpose and develop a long-term philosophy Create value streams with connected flow, standardized work, and level production Build a culture to stop and fix problems Develop leaders who promote and support the system Find and develop exceptional people and partners Learn the meaning of true root cause problem solving Lead the change process and transform the total enterprise The depth of detail provided draws on the authors combined experience of coaching and supporting companies in lean transformation. Toyota experts at the Georgetown, Kentucky plant, formally trained David Meier in TPS. Combined with Jeff Liker's extensive study of Toyota and his insightful knowledge the authors have developed unique models and ideas to explain the true philosophies and principles of the Toyota Production System.

Lean Software Development: An Agile Toolkit Adapting agile practices to your development organization Uncovering and eradicating waste throughout the software development lifecycle Practical techniques for every development manager, project manager, and technical leader Lean software development: applying agile principles to your organization In Lean

Software Development, Mary and Tom Poppendieck identify seven fundamental "lean" principles, adapt them for the world of software development, and show how they can serve as the foundation for agile development approaches that work. Along the way, they introduce 22 "thinking tools" that can help you customize the right agile practices for any environment. Better, cheaper, faster software development. You can have all three–if you adopt the same lean principles that have already revolutionized manufacturing, logistics and product development. Iterating towards excellence: software development as an exercise in discovery Managing uncertainty: "decide as late as possible" by building change into the system. Compressing the value stream: rapid development, feedback, and improvement Empowering teams and individuals without compromising coordination Software with integrity: promoting coherence, usability, fitness, maintainability, and adaptability How to "see the whole"–even when your developers are scattered across multiple locations and contractors Simply put, Lean Software Development helps you refocus development on value, flow, and people–so you can achieve breakthrough quality, savings, speed, and business alignment.

This book utilizes historical evidence to describe the development of the Toyota Production System (TPS). The development of TPS typifies the transformation of production control in interchangeable industries in the twentieth century. Much of the extensive literature available on TPS has been geared toward describing TPS from a number of different perspectives. Many researchers consider TPS distinct from American mass-production systems. Although TPS (and, more generally, the production control systems in the Japanese assembly industry) has differentiated itself from similar US production systems, the evolution of TPS is largely attributable to attempts to learn from, imitate, and modify pre-World War II US production methods. Through these efforts, TPS has achieved levels of efficiency in Japan comparable to those of US production systems. Additionally, a reliance on Information and Communication Technology (ICT) in relation to production control has facilitated the development of TPS. The literature on TPS, however, has largely ignored the vital relationship between ICT and production control due to an inordinate focus on "Kanban." Kanban translates to "signboard" in Japanese but is used to refer to an organic linkage between work in preceding and subsequent production processes. This book sheds light on the development of a fully digitalized Bill of Materials (BOM) at Toyota, behind its Kanban and production control.

In 2005, Goodyear's research and development (R&D) engine was not performing up to its full potential. The R&D organization developed high-quality tires, but the projects were not always successful. Goodyear embarked on a major initiative to transform its innovation creation processes by learning, understanding, and applying lean product development principles. Within five years, Goodyear saw its product development cycle times slashed by 70 percent, on-time delivery performance rise close to 100 percent, and throughput improve three-fold – all achieved with no increase in

the R&D budget. Lean-Driven Innovation: Powering Product Development at The Goodyear Tire & Rubber Company describes in great detail how the Goodyear team was able to achieve such significant improvements. Revealing the ups and downs of this successful transformation, the book shares experiences of how this seismic change was managed, how people were engaged, and how Goodyear dramatically reinvigorated its product development and innovation processes—and, in the process, delivered substantial more value to customers and to the company. The book also explains how lean product development helped Goodyear dramatically improve revenue by having every new product available when the market needed it. Presenting wide-ranging perspectives from all levels of leadership, this book is ideal for anyone in R&D daring to take on a lean initiative in R&D or who is struggling with a lean transformation that is not delivering to its full potential. Since the book focuses on universal lean principles, it is as insightful to other manufacturing and nonmanufacturing disciplines in any industry as well. The book presents invaluable insights gained by the author during his 36 years within Goodyear, of which 10 have been directly involved in trying to develop, implement, and sustain lean to achieve the company's business objectives. It distills ideas, practices, failures, and successes into key principles that lean product development practitioners can easily implement. After reading this book, you will gain a practical path for applying lean to the innovation processes of your organization, including where to begin and what to do, regardless of the industry and the status of your transformation. Watch Norbert Majerus discuss Lean-Driven Innovation at: https://youtu.be/yIlJEMJIcyA
The Toyota Product Development SystemIntegrating People, Process, and TechnologyCRC Press
Here is the first comprehensive and systematic explanation of the management system that drives the world's leading automaker. The development of JIT production at Toyota and the company's achievement of unprecedented levels of productivity were made possible by its supportive, integrated management system. This book reveals for the first time exac
Toyo Keizai Business Book Japan #1 best seller"Shusa" is the president of his product and the corporate president takes the role of helping all the Shusas" -- Eiji ToyodaThe Secret Behind the Success of Toyota: How the Original Chief Engineer System Works to Generate Most of the Product Value and Profit" is the first book ever written about genuine Toyota Product Development System based on the "Shusa" system (currently referred the Chief Engineer system) which dates back to 1953. The substance of the book is based on extensive research and interviews with former Toyota executives from the Product Engineering Division and Information System Division, who took charge of different elements of vehicles such as the chassis, power train, electrical & electric, etc., as well as the author's profound experience in management consultancy. Whilst the dominant public wrongly considers the Toyota production System (TPS) as the

source of the competitive edge, today Toyota generates more than 95% of the product value and profit as its product development stage. This book describes, for the first time ever, the TPD as essential functions of the company as the heart and brain of the human organism. It also sheds light on the combination of TPD and TPS, i.e., total Toyota management system.-- From Preface to the Japanese versionCompanies once used to be model of "Japan, Inc." have lost their power in global market in 2 decades.Then why, among them, is it that only Toyota, global company and its group keiretsu companies are still so strong in the world tough competition still today? What is its secret in generating such revenue and profit? If we ask this question, many would answer it is the Toyota Production System (TPS) of Kanban, and Kaizen, or its strong sales force. As a matter of fact, these replies, however, are now of course wrong, or I can say, they are complete mistakes today. Concept and techniques of TPS are quite common these days in the world as well as in Japan. Combination of TPS and Gemba QC style of management is called "Lean" outside of Japan and research and it has already been in practice more than 20 years. Some time has passed now since the US and other countries started to watch the "secret of the strength of Toyota" with the conception that bringing that system into their own operations is one of the most important factor in winning the global market. However, you may notice that no manufacturing companies who studied and applied Toyota way or "Lean" has not achieved the same high level result as Toyota yet. This book aims to clarify the total system of how Toyota, "the largest global corporation in Japan that even most Japanese hardly know about," plans, designs, manufactures, and sells products that meet the world-wide customers' needs.

How companies are using lean development to revolutionize their product and service offerings—vital lessons any business leader can use as an engine of innovation How did Ford Motors use Lean Development to pull off one of the most impressive corporate turnarounds in history? Largely by avoiding the mistakes that so many companies make when in a death spiral. They looked beyond manufacturing efficiency to change the very fundamentals of how they developed vehicles. In Designing the Future, Lean product development expert James Morgan and world-renowned Lean guru Jeffrey K. Liker reveal why so many companies have achieved only moderate success with Lean in operations, with a limited impact on their overall business. They take you through the process of bringing the best of Lean management to your enterprise—in order to link your business strategy to superior value designed for customers. The authors provide an actionable approach to building a better future for your business fueled by an iterative, integrated process that relies on simultaneous engineering, linking strategy and vision.They illustrate how to empower skilled and talented people to make collaboration and innovation a habit—hour to hour and day to day. It's the secret of full implementation of Lean—and this groundbreaking guide takes you through every step of the process. The best way to predict the future is to create it. With

Designing the Future, you have everything you need to create a flexible, iterative business-transformation process that takes you from strategic vision to value stream creation for maximum customer value delivery.

An authoritative guide to new product development for early career engineers and engineering students Managing Technology and Product Development Programmes provides a clear framework and essential guide for understanding how research ideas and new technologies are developed into reliable products which can sold successfully in the private or business marketplace. Drawing on the author's practical experience in a variety of engineering industries, this important book fills a gap in the product development literature. It links back into the engineering processes that drives the actual creation of products and represents the practical realisation of innovation. Comprehensive in scope, the book reviews all elements of new product development. The topics discussed range from the economics of new product development, the quality processes, prototype development, manufacturing processes, determining customer needs, value proposition and testing. Whilst the book is designed with an emphasis on engineered products, the principles can be applied to other fields as well. This important resource: Takes a holistic approach to new product development Links technology and product development to business needs Structures technology and product development from the basic idea to the completed off-the-shelf product Explores the broad range of skills and the technical expertise needed when developing new products Details the various levels of new technologies and products and how to track where they are in the development cycle Written for engineers and students in engineering, as well as a more experienced audience, and for those funding technology development, Managing Technology and Product Development Programmes offers a thorough understanding of the skills and information engineers need in order to successfully convert ideas and technologies into products that are fit for the marketplace.

After six years of research, six case studies, and more than 220 interviews with Toyota employees, distributors, and dealers across the globe, the authors provide fascinating insights on the inner workings of the Toyota company and why it is so successful.

Diploma Thesis from the year 1999 in the subject Engineering - Mechanical Engineering, grade: 1, Massachusetts Institute of Technology, language: English, abstract: The following thesis elucidates the impact of the product design and the product development process on the design of a manufacturing system. In contrast to integrate constraints and restrictions of the manufacturing system and its processes into the initial design of a product , attributes and characteristics of the product design are analyzed by the way they influence and restrict the design of a manufacturing system. The upcoming hypothesis of this thesis claims latter approach to be the natural and logical one. A sophisticated design theory known as Axiomatic Design [Suh 1990] is used to embed the design of a manufacturing system into the

design of the product and the product development system. The generic derivation of such an integrated design framework will allow a broad application to manufacturing and product development system design. The following paragraph outlines the background and the issues related to the motivation for this thesis. In the next step, the thesis objectives and hypothesis are stated, marking the scope and content of this academic discussion. Finally, a brief overview is provided about the content and structure of each chapter.

Building upon the international bestselling Toyota Way series of books by Jeffrey Liker, The Toyota Way to Continuous Improvement looks critically at lean deployments and identifies the root causes of why most of them fail. The book is organized into three major sections outlining: Why it is critical to go beyond implementing lean tools and, instead, build a culture of continuous improvement that connects operational excellence to business strategy Case studies from seven unique industries written from the perspective of the sensei (teacher) who led the lean transformation Lessons about transforming your own vision of an ideal organization into reality Section One: Using the Plan-Do-Check-Adjust (PDCA) methodology, Liker and Franz contrast true PDCA thinking to that of the popular, superficial approach of copying "lean solutions." They describe the importance of developing people and show how the Toyota Way principles support and drive continuous improvement. Explaining how lean systems and processes start with a purpose that provides a true north direction for all activities, they wrap up this section by examining the glaring differences between building a system of people, processes, and problem- solving that is truly lean versus that of simply trying to "lean out" a process. Section Two: This section brings together seven case studies as told by the sensei who led the transformation efforts. The companies range from traditional manufacturers, overhaul and maintenance of submarines, nuclear fuel rod production, health care providers, pathology labs, and product development. Each of these industries is different but the approaches used were remarkably similar. Section Three: Beginning with a composite story describing a company in its early days of lean implementation, this section describes what went right and wrong during the initial implementation efforts. The authors bring to light some of the difficulties the sensei faces, such as bureaucracies, closed-minded mechanical thinking, and the challenges of developing lean coaches who can facilitate real change. They address the question: Which is better, slow and deep organic deployment or fast and broad mechanistic deployment? The answer may surprise you. The book ends with a discussion on how to make continuous improvement a way of life at your company and the role of leadership in any lean transformation. The Toyota Way to Continuous Improvement is required reading for anyone seeking to transcend his or her tools-based approach and truly embrace a culture of continuous improvement.