The Machine That Changed The World : Based On The Massachusetts Institute Of Technology 5-Million-Dollar 5-Year Study On The Future Of The Automobile
Synopsis

Today, the industrial world is experiencing the most revolutionary change since Henry Ford's assembly line -- which forever changed the way things are made. Japanese companies are sweeping the world, as Western companies and governments struggle to find ways to emulate them. The Machine That Changed the World points for the first time to a positive way out of this dilemma. It shows that being defeatist about the Japanese threat, and tougher protectionism, are not the answers. This book outlines the enormous tasks facing Western companies in the 1990s and has cogent messages for Japanese firms as well, as they move abroad. The Machine That Changed the World is based on the largest and most thorough study ever undertaken in any industry: the Massachusetts Institute of Technology five-million-dollar, five-year, fourteen-country International Motor Vehicle Program's study of the worldwide auto industry. Twice in this century the auto industry has changed our most fundamental ideas about how to make things. Now it is doing it again. Just as mass production swept away craft production, so a new way of making things, called lean production, is now rapidly making mass production obsolete. Lean production is the Japanese secret weapon in the industrial wars and is spreading throughout the world. If Western companies and their managers and workers are to survive in the 1990s, they must learn and adapt to lean production. Some of the smartest already have begun to do so. Lean production welds the activities of everyone from top management to line workers, to suppliers, into a tightly integrated whole that can respond almost instantly to marketing demands from consumers. It can also double production and quality, while keeping costs down. Its adoption, as it inevitably spreads beyond the auto industry, will change almost every industry and consequently how we work, how we live, and the fate of companies and nations as they respond to its impact. In clear and compelling terms, this book explains what lean production is, and its global implications for all of us.

Book Information

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I have read a lot of the so called quality books, and have a master's degree in the field, and I have found few books that had this kind of relevance to how things are produced and why they work or don’t work. More importantly, this is one of the few ‘academic studies’ (I recall this one came out of MIT) that is actually clearly written and straightforward. Yes, Toyota is much of the focus in this book and it can sometimes seem to border on the PR level, but that doesn’t take away from the information in this book. Having had access to most of the auto manufacturers when this study was done, and seeing the nuts and bolts, it is what people do wrong at other places that is as important as what Toyota had been doing right (a trend, I might add, that in recent years has dimmed, Toyota has had embarassing quality faults recently). The book does mention that what Toyota "pioneered" was not entirely homegrown, many of the techniques existed, but Toyota was unique in the auto world in the number of things they chose to adopt (as a counterpoint, when the 70's hit and the US auto makers started having real competition, they hired Dr. Edwards Demming as a consultant, he told them many of the things that this book points out and they basically paid the check, used it for PR about how they were serious, and ignored him). And these are not new issues and continue to plague companies, fallacies like: 1) "It is the fault of the labor force"..while the UAW has not exactly been cutting edge, what this book points out is something known in quality circles for years, that most of the problems are using your labor force badly, not listening to them, and just plain bad management. 2) "The secret is robotics"..

This book is a classic on the advantages of being lean - Product Design, Manufacturing, Supply Chain Management - the entire gamut from concept to delivery in the Automobile industry. What Ford’s mass production did to craft production and its profound effects on the developed economies in the first half of the last century is an old but interesting story. With the advent of Ford’s manufacturing techniques, there was a consolidation in the Auto industry. Within a couple of decades the number of automobile manufacturers fell from over a hundred to less than twenty and the big three cornering over ninety percent of the market share. Detroit became the center of pilgrimage for the rest of the world trying to emulate and replicate this success story in other continents. Silently, the Japanese led by Toyota were working on a different concept of putting the
automobile in the hands of the customer, at better quality, lesser costs, shorter development times and with the ability to offer a wider choice. The statistics collected from these "lean systems" is mind boggling. The competitive advantage that Japan enjoyed over the American system was neither due to lower wages in Japan nor due to higher levels of automation as widely believed. It was primarily the lean machine that was conquering the mass machine. This book is based on the research done in the 1980's and published around 1990. The authors while acclaiming lean manufacturing as the panacea for the ills of manufacturing systems globally had at the time of the research and the publication of this work, probably ignored the next major change that would sweep across continents.

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