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COST COMPETTIVE PRODUCTS

MANAGING PRODUCT CONCEPT TO
MARKET PLACE REALITY

PHILLIP R. WITT

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E9760427



Reston Publishing Company, Inc.
A Prentice-Hall Company
Reston, Virginia

Witt, Phillip R.

Cost competitive products.

Bibliography: p.

Includes index.

1. Product management. I. Title.

HF5415.15.W58 1986 658.5 85-1761

ISBN 0-8359-1094-6



*Editorial/production supervision and
interior design by Norma Miller Karlin*

© 1986 by
Reston Publishing Company, Inc.
A Prentice-Hall Company
Reston, Virginia 22090

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**COST
COMPETITIVE
PRODUCTS**

*To my wife Bette,
children Steve, Debbie, Jeff, and Julie,
parents Rita and Ken, and all of my family*

PREFACE

Many companies have been successful in the past by being excellent innovators and marketeers. With the changing environment of the last decade—radical increases of resource and energy costs, slower market growth, more competition (especially from developing countries), and more cost and quality conscious consumers—their profits and hence long-term success is being threatened. In the future, good engineering and marketing will not be sufficient to allow a company to remain competitive. For future success, an efficient total Logistics Process, suited to each product, will also be needed to meet challenges of the changing marketplace and the pressures of competition.

By *total Logistics Process*, we mean all activities which, directly or indirectly, are involved in the procurement, manufacture, and distribution of the product or any portion of the product. This includes the direct physical activities of procuring the raw materials and component parts and the manufacture and distribution of the product. It also includes the activities that establish the process. Design of the manufacturing line, selection of the sourcing strategy and suppliers, and the layout of distribution networks are examples. Additionally, activities that support the physical tasks are part of the total process. They can include order processing, scheduling, and inventory control.

The Logistics Process chosen substantially affects product acceptance, profitability, and, especially, the ability to remain cost competitive in a changing environment. The Logistics Process is composed of many elements that are normally considered independent but should be thought of as parts of a single entity. To be efficient, as well as being integrated, the elements of the Logistics Process must support the product's goals, strategies, and physical requirements. Conversely, to develop an efficient process, the logistics requirements must be considered as an integral part of the design and strategy selections processes very early in the product cycle. Without an effective approach to managing the development of the Logistics Process suited to the product, "some process" will occur. However, often with disastrous results, happenstance processes fail to meet the quality, schedule, and cost goals, and ultimately the customer acceptance and profitability of the product and company.

Everyone in a company, in Marketing, Development Engineering, Distribution, and in all the functional areas of Manufacturing, in one way or another establishes, controls, or influences the Logistics Process. Because of the high degree of interdependency, it is imperative that all of the organizational elements of a company jointly manage Product Design, Strategy Selection, and Logistics Process Development if we are to produce and deliver a cost competitive new product. All of the organizations must work in integrated team approach for total product success. Often this is not done, due to the lack of a comprehensive understanding and approach to such a diverse effort. As a result, the company's competitive future, represented by the new products, is not effectively managed.

In this book, we will describe a composite process that we will call *Logistics Early Involvement*. Logistics Early Involvement (LEI) provides a comprehensive road map to effectively manage the interdependencies, mentioned above, and the myriad of decisions and plans required to make the Logistics Process a reality. The goal of LEI is to develop an efficient Logistics Process, the *key to a cost competitive product*, which satisfies the unique physical requirements and goals of the product. This requires developing procurement, manufacture, and distribution plans that are cost competitive. We must develop the process that has the right materials, parts, and products, at the right place, at the right time, at the *least total cost*. While satisfying this primary goal, we should make the product introduction cycle rapid and efficient and minimize the exposure to costly revisions during the product's production phase. LEI is the framework to manage each product concept to a cost competitive reality in the marketplace.

The LEI road map will describe in detail the plans that drive, comprise, and link the Logistics Process. We must make these plans mutually supportive and suited to the individual product if we are to achieve cost

competitiveness. To be effective, the approach must be implemented early in the product life, starting at the product conception phase. This is when we can realistically influence design and strategy selection to lead to increased manufacturing and distribution logistics efficiency. Early effort is also needed to ensure that the Logistics Process we plan can actually be implemented in time to support the production phase for the product. Once production has started, to change improper strategies, goals, design, or processes, is costly and difficult, at best, and may well be impossible.

The book is written from the viewpoint of a fabricator and assembler of hard goods. However, the approach fits virtually any type of product, business, and marketplace. The decisions we must make, the problems we must address, and the plans we must develop are basically the same. However, to be efficient, a Logistic Process must be tailored to the specific individual needs of each different product's design and set of strategies. We do not in any way subscribe to the concepts of "one size fits all" in the Logistics Processes or in Logistics Systems.

The intention of the book is to define all of the questions that must be addressed, plans that must be developed, and the interrelationships that must be accounted for in designing the proper Logistics Process. Part of the purpose is to provide a framework for planning and managing the difficult effort of integrating many diverse logistics elements and organizational areas to produce an efficient total process. The framework provides the means to segment the total effort into meaningful and manageable portions and to draw the results and plans from each portion into an effective total. Each group must understand its own role and responsibility *and* its relationship with the other areas to develop a proper total process.

There is no intention to provide detail solutions for the logistics process; there are no simple universal solutions to fit all products or companies. For each question to be addressed or plan to be established there are many possible solutions that could possibly be linked many different ways. Of course, in practice, for any given product the choices are limited so that approach is practical to implement. Conceptually, there are infinite solutions that we could not begin to describe. For each of the topic chapters, elements or drivers of the process, full length books have been written covering the basic "how to's"; for the reader who is interested in more understanding and solutions for any element there are references for each chapter. Our purpose is to ensure everyone involved is aware of the elements of each plan that must be developed and the interrelationship that must be satisfied in the individual solutions that compromise the whole.

LEI is a planning process that is essentially creative. With many people involved and the diverse elements and drivers of the process, LEI provides the framework for managing the total creativity of the team. The

structured approach allows the individual creativity to be communicated and incorporated into a whole. It minimizes the exposure of one group's solutions detracting from others. The total integrated approach helps avoid suboptimization, which hurts the product and everyone's effort. While requiring a team effort with good skills, a large amount of manpower is not usually needed to implement the LEI approach effectively. The approach is aimed at all levels of management in every functional area of a company who will influence or be responsible for the successful introduction of a new product. It also provides the professional within a functional specialty the understanding he must have to effectively integrate his work into the total process. LEI is the roadmap for managing the many diverse organizational elements to gain product success.

The LEI approach will not elongate the process of getting the product to the market since the effort is done in overlap with the product development. In practice, the process has been shortened by avoiding false starts in the product design and Logistics Process development or by avoiding inappropriate logistics solutions that must be changed later. The approach recognizes the need to often rush a product to the market before all of the Logistics Process can be implemented (with planned later improvements). However, if the proper base is not laid by LEI in the early product phases, the desired improvements can be impossible or impractical to implement. The advantage of early market entry is lost and the long term success is hurt with poor total quality, cost, and schedule performance due to improper logistics plans and solutions.

We cannot emphasize too heavily that LEI is a structured approach to managing the planning of the Logistics Process. To stress this concept, each section of the book is titled by a specific set of plans needed. In turn, the plans for each logistics element must be integrated into the others and the Product Design and Strategies to produce an efficient Logistics Process. An efficient Logistics Process suited to the product is the key to making a cost competitive product a marketplace reality.

LEI provides the approach to developing the appropriate process for each product. The approach addresses the plans, questions, and relationships, which basically do not change by business or time as solutions do. Hence, the road map of LEI will be valuable now and in the future in managing the introduction of cost competitive products.

Authors Note: This book grew out of work, started in 1978, specifically aimed at the above goals. As parts of the LEI approach were developed, they were tested and applied to products with good results. However, the real pay-off came when we integrated the individual elements into a total approach. As we have implemented the full concept of LEI, we have experienced very significant positive gains in introducing cost competitive products more rapidly and efficiently to the marketplace. Happily, the benefits we anticipated are occurring as we apply the approach.

ACKNOWLEDGMENTS

I thank the many people who have contributed ideas over the last few years, which are incorporated in the book. John Bruggeman and Sid McCready were instrumental in honing the structure, editing, and providing references. Win Orcutt provided significant input to the release and Engineering Change areas. Carl Terpack and Joe Tondreau provided time and resources necessary for me to develop the concept and working details.

A very special thanks to my friend and fellow Program Manager, Jim Sedlak, who not only contributed technical information, editing, and created the idea of the TAKO as an illustration, but also was a great motivator the last two years during the final writing.

I owe a large debt of gratitude to Mal Dorber who started and encouraged me in the field of Material Logistics. His ongoing teaching and counsel as well as his technical and editorial contributions are deeply appreciated.

The many people come from very diverse organization, skill, and product areas. Their one common denominator is they all have in-depth practical experience in new product production and the desire to make

the process more effective. Their experience and knowledge provided valuable input to the LEI concept.

Finally, to Bette who noted, “it can’t be published if it isn’t written.”

Phil Witt

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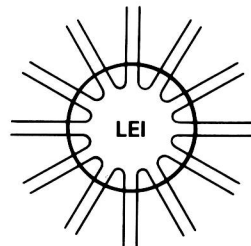
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THE LOGISTICS PROCESS PLAN: NEED FOR AND APPROACH TO AN EFFICIENT LOGISTICS PROCESS