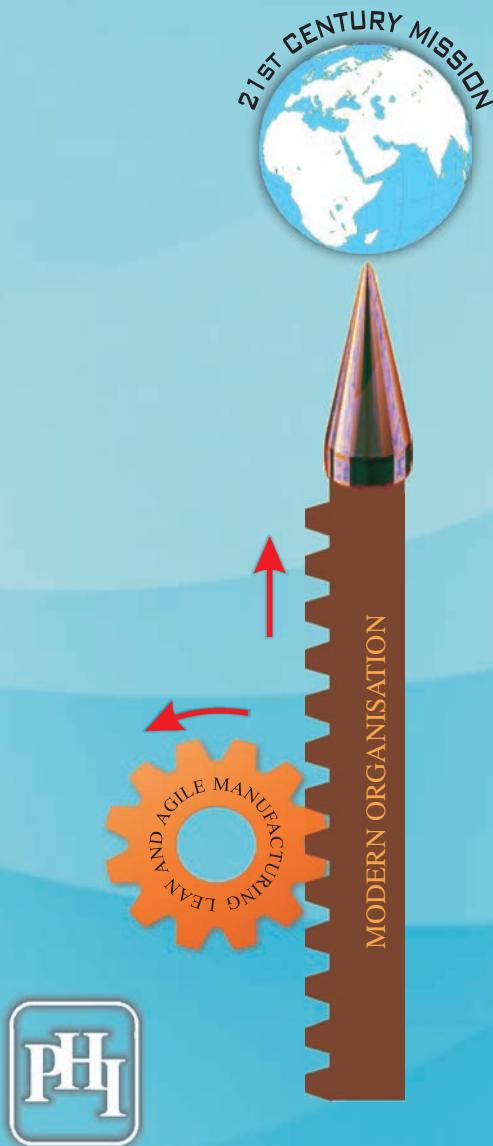


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LEAN AND AGILE MANUFACTURING

Theoretical, Practical and Research Futurities



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Lean and Agile Manufacturing

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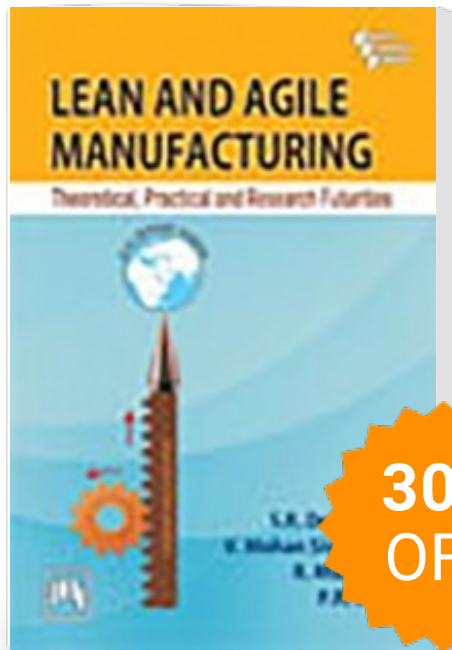
Preface

Producing products had been an important profession of mankind. Several factors triggered the mankind to become producers of products. In the ancient time, mankind became a producer of weapons due to the necessity of efficiently hunting the wild animals. This necessity further progressed to meet several requirements. This progression had been happening through several centuries which created thousands of producers of products. These producers confined their skills and knowledge within themselves and did not reveal these skills and knowledge to the fellow producers. This practice created specialised producers. These producers were recognised under the designations like Carpenters, Jewellers and Cobblers. These producers carried out all production operations under confined facilities. This kind of production paradigm is today called by the theorists as *craft production*. Under this paradigm, one or a few persons worked to offer a product or service to the customers. While adopting this production paradigm, the technical know-how and business results were known only to a few persons who produced the product or offered the service.

The mankind was adopting craft production paradigm till the time industrial revolution occurred in the world. As a result of the occurrence of industrial revolution, companies employing a large number of people and facilities came into existence. These companies employed a paradigm called *mass production*. Through the employment of mass production paradigm, large quantities of products and services were offered by the companies to the customers. Due to the availability of large quantities of products and services, the customers' position got strengthened. This situation created competition among the companies. Subsequently, scientific tools and techniques emerged in the world to face the competition. In most cases, these scientific tools and techniques facilitated the companies to face the competition successfully and garner good profit.

The world was adopting mass production paradigm from the industrial revolution period to the middle part of the twentieth century. From the middle part of the twentieth century, quality gurus like Deming, Juran, Crosby and

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