

ZHOU XIANG

XIN

JING JI

DE

ZHI ZHAO

GE

走向新经济的



制造革命

甘德安 王琳 著

中国对外经济贸易出版社

走向新经济的 制造革命

甘德安 王琳 著

中国对外经济贸易出版社

图书在版编目(CIP)数据

走向新经济的制造革命/甘德安,王琳著. -北京:中国对外经济贸易出版社,2001.9

ISBN 7-80004-926-4

I. 走... II. ①甘...②王... III. 工业经济-经济发展-研究-中国 IV. F424

中国版本图书馆 CIP 数据核字(2001)第 068747 号

书 名: 走向新经济的制造革命

作 者: 甘德安 王琳

责任编辑: 聂海鹰 张荣生

出版发行: 中国对外经济贸易出版社

地 址: 北京东城安定门外东后巷 28 号

邮政编码: 100710

印 刷: 武汉珞南印刷厂

电话 027-87801719

开 本: 850×1168 1/32

印 张: 12.5

字 数: 250 千字

版 次: 2001 年 9 月第 1 版

印 数: 2000 册

书 号: ISBN 7-80004-926-4/F.533

定 价: 25.00 元

前 言

一场革命，制造业的革命，横空出世。这场革命不是大工业时代机械工具代替手工器械，而是信息技术、网络技术代替机器大工业的革命。不论是发达的美国，还是发展中的中国，都赋予极大的热情与关注，这就是走向新经济的制造革命。

本专著拟定研究新经济对传统经济，特别是对制造业的影响，为此，我们把制造业放在一个新千年、新经济的背景中给予考察。详细研究制造业所要面临新经济的挑战与机遇，研究信息技术、网络技术对制造业所带来的影响。特别研究在新经济背景下发展制造业对我国国民经济的重要意义。

经济学家发现：许多传统产业的公司恰恰是高科技产品的消费大户。这些传统产业的公司并不是想把自己变成“dot.com”公司，而是想继续留在传统产业中。现在“新经济”与“旧经济”之间的互动，已经成为未来经济发展的新模式。对“新经济”公司来说，只做“网络”的公司，是无法在未来生存的。网络只是一个途径，它的背后需要强大的制造业，特别是用新经济的理念、技术、网络改造过的制造业。没有传统制造业，国民经济无发展之本，若没有新经济对传统制造业的改造，则国民经济无发展方向。

本专著第1章，我们首先界定新经济内涵与特征，然后介绍新经济背景下的数字经济理论及企业理论；并指出，在新经济的背景下，企业生存与发展的基础是企业的知识化与网络化。

第2章，我们从历史与现实的角度对制造业的作用、地位和

新经济背景下的历史使命给予了研究。首先回顾了机器制造业在人类进步中的作用；然后把视野移到中国，审视 100 多年来制造业发展的艰难里程，特别拿出篇幅介绍改革开放以来制造业的迅速发展的经验。同时也研究中国制造业在 20 世纪 90 年代所面临的困境及出路。

第 3 章，我们研究新经济对产业结构的影响，产业结构演变所出现的新特征。随后从产业结构演变特征与经济的关系，新经济背景下产业结构演变新特征作了研究，介绍了产业结构的几种模型。

第 4 章，我们在第 2 章与第 3 章的研究结果的基础上，即在新经济背景下产业结构新特征的基础上，介绍新经济主要产业：主体产业—知识产业、基础产业—信息产业和新兴产业—服务产业。对知识产业、信息产业及服务产业的特征、现状、面临的困难及发展的思路做了一定的研究。特别研究了新经济与传统制造业结合后的新特征，新方向。

第 5 章，在新经济背景下介绍了信息技术与制造业的变革，特别重点研究与介绍了柔性制造、精益生产、敏捷制造、绿色制造和 CIMS 等制造业最新制造的理念和战略。

第 6 章，研究了新经济背景下制造企业管理的革命。作者没有把当前西方的新管理理论罗列在一起，泛泛而谈。而是首先批判传统工业经济的哲学指导思想：牛顿二元哲学思想，提出新经济背景下的企业管理应有新的哲学思想，提出了新经济的哲学指导思想是三元哲学。并在企业新范式的理论中把当前企业管理界的各种学说统一起来，提出了企业管理新范式的理论；并在随后逐步地论述了作者的观点；重点论述了企业再造、企业信息化管理等理论。

第 7 章，研究了新经济背景下的制造企业的营销新特征。研

究并介绍了网络营销、绿色营销、模糊营销等。

本专著是作者首次从新经济的角度研究制造业的一次尝试。我们希望既能站在宏观视野也立足微观立场研究制造业。我们也试图综合利用信息科学、制造技术、技术经济学、管理学和经济学的理论与方法来研究制造业。本专著耗时两年，走访了众多企业，翻阅了大量专著论文。作者希冀，专著的出版能对制造企业的制造、营销，组织、知识管理的改进有所裨益。两年来，虽然我们十分尽心，但由于我们才疏学浅，研究结果如何，拿出来也是十分忐忑不安的。但我们愿意做一些抛砖引玉的工作。希望在广大读者与专家的指正下，使我们的研究成果更加深入与科学。希望我们一起为推进中国制造业在新经济、新千年获得生机与活力，为中国制造业成为中国经济的主力军而奉献微薄之力。

本专著是合作者通力合作的研究成果。其中第2、第5、第6（除第一节）、第7章（除第一节）是王琳同志撰写。其余部分是甘德安同志撰写。资料收集、出版等工作主要是王琳同志完成。

在撰写本著作的过程中，参阅了大量专家学者的成果；我们在参考文献中尽可能的列出，并在此表示感谢。若有些资料引用因疏忽而没有注明的，在此表示歉意。我们还对支持我们调研的企业表示感谢。

作者谨识

2001年9月4日

Preface

A revolution the manufacturing revolution appears unexpectedly. Instead of machines replacing handwork in the industrial times, it is information and internet technique that now replaces machines. It gains unprecedented enthusiasm and attention whether in the developed America or in the developing China. It is the manufacturing revolution to new economy.

This book is intended to exploit the influences of new economy to the old traditional economy, especially to the manufacturing industry. So we set it in a background of a new millennium and new economy to give a detailed research of the new challenge and scope which the manufacturing industry has to face and the influences which information technique and internet technique bring to it and the significance of developing the manufacturing industry in new economy to Chinese national economy in particular.

Economists find that a lot of enterprises belonging to the traditional industry are just the big consumers of the high technical products. These enterprises do not want to become "dot. com" enterprises. On the contrary, they just want to stay in the traditional industry.

Now the interaction between "new economy" and "old

economy" has become a new model in the developing economy. For those enterprises belonging to "new economy", merely changing into "internet", enterprises are far from existing in the future. Internet is only a method. It needs a strong manufacturing industry, especially the manufacturing industry which has been changed with the ideas, technique and internet belonging to new economy. If there are no traditional industries, there is no ground for national economy; if there is no change of the traditional manufacturing industry, there is no direction for the development of national economy.

In the first chapter, we give the definition and characters of new economy, and then introduce the theories of numerical economy and enterprise in new economy; we also point out that the bases of enterprises living and developing are widely using knowledge and internet.

In the second chapter, we study the function, status and historical mission of the manufacturing industry in terms of history and reality. We firstly review the function of the mechanic manufacturing industry during the development of human beings; then we look into China to examine the one-hundred-year difficult development of the manufacturing industry, with which especially introduce the experiences of the rapid development since Chinese reforms.

Meanwhile we also study the difficulty and way-out of Chinese manufacturing industry in the 1990's.

In the third chapter, we exploit the influences of new economy to industrial structure and the new characters of

industrial structure. Then we introduce several models of industrial structure in terms of the relationship between the characters of the evolution of industrial structure and the development of economy and new characters of the evolution of industrial structure in new economy.

In the fourth chapter, based on the conclusion of chapter 2 and chapter 3, namely based on the new characters of industrial structure in new economy, we introduce the main industries in new economy: the main industry—knowledge industry, the basic industry—information industry and new industry—service industry. We study the characters, status quo, difficulty of knowledge industry, information industry and service industry and how to develop them. We pay special attention to the new characters and new directions after the connection of new economy and the traditional manufacturing industry.

In the fifth chapter, we introduce the transformation of information technique and manufacturing industry in new economy. We lay emphasis upon flexible manufacture, lean production, agile manufacture, green manufacture and CIMS etc., which belong to the newest ideas and strategies.

In the sixth chapter, we study the management revolution on enterprises in new economy. Instead of merely listing current new Western management theories and talk in general terms, the author firstly criticizes the guiding principle of the traditional industrial economy: Newton Bivariate Philosophy, and then put forwards the ideas that the enterprise

management in new economy ought to have and points out that the guiding principle of new economy should be Ternary philosophy. He unifies various theories in current management sphere in terms of the theory of the new enterprise model and put forwards the theory of the new enterprise model, and then he expounds his contentions step by step, especially enterprises recreate, enterprise management based on information, knowledge management and so on.

In the seventh chapter, we study the new marketing characters of manufacturing enterprises in new economy and introduce network marketing, green marketing, fuzzy marketing and so on.

In this book it is the first time that the authors studies the manufacturing industry in terms of new economy. We hope that we are able to study the manufacturing industry in terms of both macro—analysis and micro—analysis. We also try to make a comprehensive use of information science, manufacturing technique, technological economics, management science and economic theories and methods to study the manufacturing industry. We spend two years visiting lots of enterprises, looking up a number of articles and thesis. We hope that the publication of this book can provide references to the manufacture, marketing, organization, knowledge management of the manufacturing enterprises.

In the past two years, though we have tried our best, we are still very careful to publish it. No matter what we conclude, we hope that this book can bring more attention and

other good books upon this subject. We also hope that we can improve our research through the criticism of all readers and experts. We would like to contribute our efforts in helping Chinese manufacturing industry winning more opportunities and becoming the main force in Chinese economy.

This book is a fruit of collaboration. In this book the second, fifth, sixth(except the first part), seventh(except the first part) are written by WangLin. The rest chapters and parts are written by De — an Gan. WangLin is mainly responsible for data collection, publication and other work.

In the course of writing, we thank those experts and scholars whose fruits which we refer to and try to list in the book. We also apologize to those whose data that we use but do not list because of carelessness.

We also thank those enterprises which support our research.

The author
2001/9/4

目 录

前言	1
1、走向新经济的管理变革	1
1.1 新世纪、新经济	1
1.2 新经济对社会生活的影响	9
1.3 新经济的数字经济理论	14
1.4 新经济的企业理论	17
2、新经济背景下的制造业	35
2.1 工业革命与制造业	35
2.2 中国制造业的现状与困境	54
2.3 制造业面临新经济的挑战与机遇	70
2.4 21世纪振兴我国制造业的战略思路	90
3、新经济对产业结构调整	105
3.1 新经济对传统制造业的影响	105
3.2 产业结构演变特征与经济发展	109
3.3 新经济下的产业结构演变新特征	119
3.4 新经济促使产业结构模型知识化	131
4、走向新经济的新兴产业与制造业	139
4.1 走向新经济的主体产业:知识产业	139
4.2 走向新经济的基础产业:信息产业	146
4.3 走向新经济的新兴产业:服务产业	160
4.4 制造业与新兴产业	177
5、走向新经济的制造革命	181
5.1 信息技术与制造业的变革	181

5.2 柔性制造系统	185
5.3 CAD 技术的发展趋势展望	189
5.4 精益生产	199
5.5 计算机集成制造系统	205
5.6 敏捷制造	241
5.7 绿色制造	256
6、新经济与管理革命	275
6.1 我国传统制造企业管理模式的变革	275
6.2 新经济背景下的制造业管理新范式	278
6.3 企业再造理论	304
6.4 制造企业的信息化管理	309
6.5 制造企业的决策创新	318
7、新经济与制造企业的营销革命	333
7.1 新经济背景下的营销创新	333
7.2 新经济背景下制造企业的网络营销	342
7.3 新经济背景下制造企业的电子商务	350
7.4 新经济背景下制造企业的绿色营销	356
7.5 新经济背景下制造企业的模糊营销	365
附录:专业术语缩写一览表	369
参考文献	371

Contents

Preface	5
1、The Transformation of Management in New Economy	1
1.1 New Century, New Economy	1
1.2 The Influences of New Economy to Social Life	9
1.3 The Theory of Digital Economy	14
1.4 Theories on Enterprises in New Economy	17
2、The Manufacturing Industry in New Economy	35
2.1 Industrial Revolution and the Manufacturing Industry	35
2.2 The Difficulty of present Chinese Manufacturing Industry	54
2.3 The Challenge and Opportunity of the Manufacturing Industry Facing New Economy	70
2.4 The Strategy of Developing Chinese Manufacturing Industry	90
3、The adjustment of Industrial Structure by New Economy	105
3.1 The effect of New Economy on Traditional Manufacturing Industry	105

3.2 The Features of Industrial Structure Evolution and Economy Development	109
3.3 The Features of Industrial Structure Evolution in New Economy	119
3.4 Industrial Structure Mode intellectualized by New Economy	131
4. Sunrise Industry and New Manufacturing Industry in New Economy	139
4.1 The Main Industry stepping into New Economy; Knowledge Industry	139
4.2 The Basic Industry stepping into New Economy; Information Industry	146
4.3 The Sunrise-industry stepping into New Economy; Service Industry	160
4.4 The Manufacturing Industry and Sunrise Industry	177
5. The Manufacturing Revolution stepping into New Economy	181
5.1 The Revolution of Information Technique and Manufacturing Industry	181
5.2 Flexible Manufacturing System	185
5.3 The Prospect of CAD Technique	189
5.4 Keep—improving Production	199
5.5 CIMS	205
5.6 Agile Manufacture	241
5.7 Green Manufacture	256
6. New Economy and the Management Revolution of the Manufacturing Industry	275

6. 1 Management Evolution of Traditional Manufacturing Enterprises	275
6. 2 The New Model of Manufacturing Industry Management in New Economy	278
6. 3 The Theory of Business Reengineering	304
6. 4 The Information Management of Manufacturing Enterprises	309
6. 5 The Decision Innovation of Manufacturing Enterprises	318
7、 New Economy Marketing Revolution of Manufacturing Enterprises	333
7. 1 The Marketing Innovation in New Economy	333
7. 2 The Internet Marketing of Manufacturing Enterprises in New Economy	342
7. 3 The Electronic Business of Manufacturing Enterprises in New Economy	350
7. 4 The Green Marketing of Manufacturing Enterprises in New Economy	356
7. 5 The Obscure Marketing of Manufacturing Enterprises in New Economy	365
Appendix: The Abbreviation of Terminologies	369
Reference Books:	371

1、走向新经济的管理变革

1.1 新世纪、新经济

一、众说纷纭“新经济”

有个笑话：说现在的新经济热到什么程度呢，有个叫化子在华尔街讨钱，他胸前挂了一块牌子，上面写着 BEG，没人给他钱。后来一个教授说：你在这 (BEG) 后面加上 .COM。他就加成 BEG.COM，马上就有人给钱了。后来又有教授说：你在前面再加上 E。于是他就加成了 E.BEG.COM。这回过来好几个风险投资家说：“你跟我走吧，你的网站我买了！”

新经济是指在经济全球化背景下，信息技术革命带动的、以高新科技产业为龙头的经济。有人认为以计算机和网络为代表的经济是人类经济史上继农业革命和工业革命后的第三次产业革命。据有关资料，收音机由面世到拥有五千万用户用了三十余年，电视机只用了十三年，而互联网仅用了五年，有学者把新经济的特点归结成一个公式：新经济 = 高技术 × 全球化，可以说较准确地揭示了新经济的影响。

作为全球化的一分子，中国自然无法置身事外，实际上，互联网对中国而言并不陌生，并且其影响日益强大。一时期，关于新经济的讨论充斥于各类媒体，认为新经济是人类经济发展史上的奇迹者有之，直言新经济是经济泡沫者亦有之，孰是孰非，目前难下定论，但是新经济的贡献却是有据可查：以美国为例，统计资料表明，1999年，高新科技给美国增加了5070亿美元的产值和230