

当代经济学系列丛书

Contemporary Economics Series

主编 陈昕

# 信息化与 产业融合

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周振华 著

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# 作者近照

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# 出版前言

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**为**了全面地、系统地反映当代经济学的全貌及其进程,总结与挖掘当代经济学已有的和潜在的成果,展示当代经济学新的发展方向,我们决定出版“当代经济学系列丛书”。

“当代经济学系列丛书”是大型的、高层次的、综合性的经济学术理论丛书。它包括四个子系列:(1)当代经济学文库;(2)当代经济学译库;(3)当代经济学教学参考书系;(4)当代经济学新知文丛。该丛书在学科领域方面,不仅着眼于各传统经济学学科的新成果,更注重经济前沿学科、边缘学科和综合学科的新成就;在选题的采择上,广泛联系海内外学者,努力开掘学术功力深厚、思想新颖独到、作品水平拔尖的“高、新、尖”著作。“文库”力求达到中国经济学界当前的最高水平;“译库”翻译当代经济学的名人名著;“教学参考书系”主要出版国外著名高等院校的通用教材;“新知文丛”则运用通俗易懂的语言,介绍国际上当代经济学的最新发展。

本丛书致力于推动中国经济学的现代化和国际标准化,力图在一个不太长的时期内,从研究范围、研究内容、研究方法、分析技术等方面逐步完成中国经济学从传统向现代的转轨。我们渴望经济学家们支持我们的追求,向这套丛书提供高质量的标准经济学著作,进而为提高中国经济学的水平,使之立足于世界经济学之林而共同努力。

我们和经济学家一起瞻望着中国经济学的未来。

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# ABSTRACT

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## INFORMATIZATION AND INDUSTRIAL CONVERGENCE

The informatization tide currently rising up all over the world is bringing about new historical evolution to the whole industrial structure, i. e. , industrial convergence in the process of informatization. As to traditional industrial division, industrial convergence is a great revolution in industrial economics. Changes in its content and basic structure are the actually “overflowing” information which cannot be contained or covered by the traditional industrial economic theories. To explore this new mode of industrial revolution, especially to give scientific and rational theoretical explanations to its expansion trend in a larger scope, and to build a predicative basic framework of the industrial convergence theory and its policy implications, is a new challenge to industrial economics.

In the process of informatization, with the development and extensive application of information technology, especially the formation and maturity of internet, the fixed boundary dividing industries

such as telecommunication, broadcast & television, and publishing firstly began to diminish in the 1990s, and these industries are gradually converged together. At the same time, there are discussions in foreign countries about convergence, digital convergence or industrial convergence. However, serious academic studies on industrial convergence didn't begin until later 1990s. Green Paper on the convergence of telecommunication, media and information technology industries presented by European Committee is of great influence, evoking an extensive discussion in Europe on industrial convergence and governmental regulation, and hallmarking a new period of European Union policy making on communication environment. But generally speaking, most of these studies are positive descriptions instead of abstractive theoretical analyses. In respect of theoretical analyses, Ono and Aoki carried out relatively prominent research. They built an analytic framework in 1998



to display the converging process of media and information service including telecommunication and broadcast.

This book carries out a case study on the convergence of three industries such as telecommunication, broadcast & television, and publishing. It is of great academic value to carry out a systematic analysis on this subject.

(1) The current informatization is a historical developmental trend after industrialization, and industrial convergence is a new industrial pattern endogenous within the process of informatization. With the continuous advance of informatization process, it is absolutely possible that industrial convergence will expand to other areas and will most probably become a typical industrial pattern in a real information society in the future.

(2) In traditional industrialization, technological progresses happened mostly within the boundary of a certain industry instead of at the boundary

edge of different industries. Therefore, every progress of industrial technology, although differs greatly in details, is creating new industrial boundaries or strengthening the boundaries. However, industrial convergence is totally different from traditional industrial division in that it diminishes industrial boundary. The negation of the traditional industrial division is a historical symbol of new industrial revolution.

(3) Industrial convergence of telecommunication, broadcast & television, and publishing industries based on digital convergence breaks the boundary of industrial division, enables telecommunication, media and information technology industries to seek overlapping products, platforms and interest-sharing sectors, and thus leads to rational distribution of resources in a wider scope. At the same time, it also provides great new commercial opportunities for enterprises. Managers in different industries influenced by convergence are seeking

opportunities to carry out their traditional service business and expand new service business. So industrial convergence gives new impetus to industrial development and economic growth.

However, study of industrial convergence should not be limited to case analyses. Instead, based on the case study, we should further ask: Is it only a special case of industrial change in the process of informatization, or does it predict or symbolize the development direction of industrial economics in the process of informatization, i. e., industrial convergence happening in a wider scope? At present, there is no profound systematic discussion on this issue, only some estimation. For example, famous Japanese industrial economist Uekusa Masumi estimated that in manufacturing industry, convergence will also be further developed. What this book tries to break through in the study of industrial convergence is in the general explanations of the expansion of industrial convergence. On the contrary, it seeks to build

a theoretical framework or system to understand the industrial convergence in the process of informatization.

We already have a traditional theoretical paradigm to observe phenomena in the development of industrial economics. For a long time, we have been consciously or unconsciously dependent on this theoretical paradigm to observe industrial economic phenomena. The issue is whether the traditional theory can be the paradigm for us to observe the new phenomenon of industrial convergence? That is to say, whether we can adopt the traditional industrial economic theory to explain the new phenomenon of industrial convergence? This theoretical paradigm was able to give rational explanations to industrial interrelation or industrial structural changes in the era of industrial economics, and profoundly revealed the general principle of industrial economic development under the historical conditions at that time , but the standing point of

traditional industrial economic theories is the “industrial division” based on the production and exchange of products in kind in the era of industrial economics, and the study method focused on characteristics within the industries. Obviously, it is incompatible to industrial convergence emerged in the process of informatization.

Although at present it is not mature to carry out comprehensive systematic study on industrial convergence because mostly importantly informatization itself hasn't unfolded its complete historical picture yet, theoretical power lies not only in its explanation of reality but also in its predictability of futures. The key issue is what research method we are going to adopt to provide general explanations for industrial convergence, and when things are not clear, master their essential changes to predict their evolutionary trend and then guide our practices.

The method we choose and identify for the study of industrial convergence in the process of

informatization is neither induction, nor deduction, but a method of retroduction or abduction. This method is a basic inference method of realism. In respect of paradigm, it is an inference process from "superficial phenomena" to some "deep" causally-related matters.

The book aims to generalize the concrete facts of industrial convergence of telecommunication, broadcast & television, and to give explanations to this new phenomenon of industrial convergence in the process of informatization, in particular to understand and illustrate structures and powers which are hidden behind but in fact controls the phenomenon we see, so as to display the relationship between informatization and industrial convergence and reveal the trend of industrial convergence becoming the mainstream.

The book begins with case analyses on the industrial convergence of telecommunication, broadcast & television and publishing. Using the framework

of industrial boundary, the book analyzes the evolutionary process of these three industries from divided to converged, and reveals the historical negation by industrial convergence against traditional industrial division, showing its great significance as a new industrial revolution. Then, it further investigates how the convergence of these three industries breaks through the restriction of industrial division, brings about new opportunities for industrial development and potential expansion, and promotes the development of a new pattern of industrial system, to reveal the historical great significance that industrial convergence will become a new engine for the development of industrial economics.

Based on this, it continues to analyze the dominant factors behind the convergence of these three industries, and put these factors in the greater background of informatization process to discuss its endogenous possibility, which forms the background analysis of industrial convergence and

its expansion. In addition, these dominant factors are also investigated in the scope of the whole industrial economics to analyze whether the expansion of industrial convergence has the support of the dominant factors and to analyze endogenous abilities for the expansion of industrial convergence.

In order to illustrate the mechanism realizing expansion of industrial convergence, while building an analytical model of extensive information technology application, the book analyzes the learning cost and potential productivity benefits of information technology application, reveals the value mode of information technology application, and discusses the great influence of information technology application on industrial interrelation. Through analyses on basic changes of industrial interrelation, change of its inherent structure and its characteristics, and expansion of interrelated industrial boundaries, it reveals the important structural conditions for the expansion of industrial convergence.



In addition, by describing the basic process of industrial convergence expansion through a theoretical model, to analyze the essence of industrial convergence and the basic implication of industrial convergence expansion, and discuss several typical types for the expansion of industrial convergence.

As the new paradigm of industrial convergence will cause a great shock to the traditional industrial economic theories, so while criticizing the traditional industrial division, this book put forward a new industrial categorizing method based on the inherent mechanism of this new paradigm. It redefines the structural rationalization under industrial convergence, and re-explains structural bottleneck limitation, coordinated development of industries, dynamic structural balance. In addition, it emphasizes the influence of industrial convergence on market boundary and market structural changes, reveals the market structural changes under industrial convergence. It further analyzes the fundamental