

Research on Technology Innovation of New Energy Automobile Industry and The Development of Market Cultivation

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Abstract—In recent years, with the global oil production is increasing, the crude oil prices continue to rise, coupled with the urgent requirement on the world to protect the environment. Other development the new energy automotive industry has been the focus of attention, after 10 years of efforts, an important breakthrough in technology innovation of China's new energy automobile, independent development of products began to enter the market, industrial development has a good foundation, however, but on the whole, the present stage of China's new energy automobile existing development strategy is not clear, technology weak innovation ability, lack of market demand, the problem of inadequate facilities, through technical innovation and market of new energy automotive industry develop two-way driving issues, to explore China's new Energy automobile industry development strategy, to provide reference for China's new energy automotive industry development.

Keywords—*Bidirectional driving; Major issues and constraints; proposal*

I. INTRODUCTION

Currently, the contradiction between the increasing number of cars and the environment have become increasingly prominent, relying solely on the moral and excessive administrative power respectively leads to inadequate and public power expansion, while not conducive to sustained economic development, with the emergence of new energy vehicles, first of all, greatly promote the smooth transformation of our country, to complete the transportation energy .The second. Also will make the new energy automotive industry has become a new growth point of China's economy. But on the whole, the present stage of China's new energy automobile existing development strategy is not clear, the technological innovation capability is weak, inadequate facilities ^[1], the cost, the concept of consumers and enterprise resource integration there is insufficient demand ^[2], China's new energy vehicle market is not on technology innovation driven, technological innovation and market demand is not closely associated. Research on these questions and explore solutions.

II. TECHNOLOGY INNOVATION AND MARKET CULTIVATION OF TWO-WAY DRIVING MECHANISM

For Pete as the representative of the technology push theory suggests that technological breakthrough will subvert the traditional mode of technology research and development, the production process and marketing model innovation, and ultimately create a new market demand. At the same time,

technological innovation and market development are two major forces to promote the development of strategic emerging industries, from the existing research results at home and abroad, the technology push and demand pull on said this is quite rich, but for the two interaction and jointly promote the development of emerging industries are relatively scarce, this paper summarizes the interaction between the theory and practice of technology innovation and market cultivation on the growth of emerging industries can be summarized into two aspects(see Fig.1).

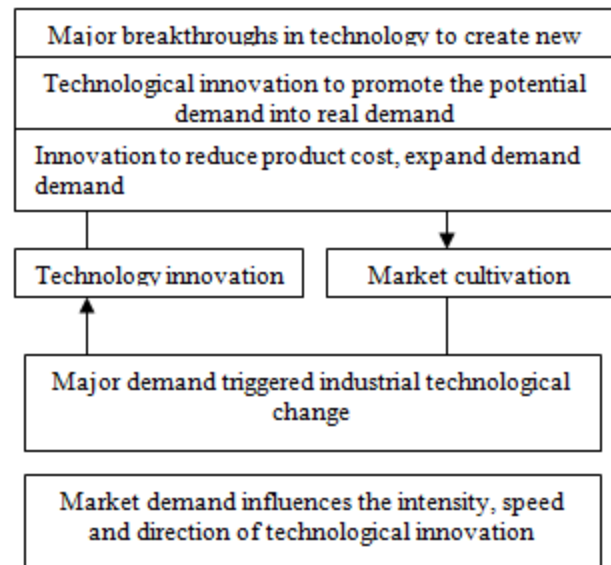


Figure.1. Technology innovation and market cultivation of two-way driving mechanism

A. Technological Innovation Can Create or Meet New Needs and Thus Contribute to the Rise of New Industries.

On the one hand, major technological breakthroughs that are discontinuous technology innovation, you can create a new demand. Scholars generally believe that it is developed through technological leapfrogging, access to an important way to control the ^[3] industrial technology, small businesses, start-ups and post enterprises to create an important way for new technology. At the same time innovation it is a kind of marketing concept, technical innovation is not the pure concept of science and technology, it is not a vague sense of scientific discovery, but a modern marketing concept, to create new demand.

On the other hand, technological innovation can make the potential demand into real demand. Such as energy saving and environmental protection technology, new energy technology, the development of biological technology can bring economic and social development of the bottleneck of resources and environment is transformed from the potential demand into actual demand. And thus the birth of a new industry. In addition to technological innovation through technological innovation, technological innovation to reduce the product price, and then expand the scale of demand. For example, nearly two years of Yutong successively through technical innovation released new hybrid buses, H8 plug-in hybrid electric bus, so as to promote public transit in our country, the market of new energy bus accounted for than from 11% in 2012, up to 70% of 2015. Because in many medium and small cities, due to the high cost, charging stations and other facilities development are lagging behind and some of the mountain complex road, objectively increased of plug-in hybrid electric vehicle (HEV) demand. H8 makes small and medium-sized cities have also used Yutong new energy bus, does with technology innovation the potential market into a real market..

B. Demand is to Pull the Industrial Technological Change to Promote the New and Old Industries to Renew the Important Force of the Alternative

On the one hand, the market demand influence the speed and direction of technological innovation, such as in the real life, along with the global energy security, environmental protection, food and health issues are closely related to climate change and the development of human society has become increasingly prominent, thus stimulating the biological engineering, new materials, new energy, space technology, marine technology, new based on the group technology and other high-tech industries and strategic emerging industries rise quickly.

On the other hand, the major demand changes in industrial technology. A questionnaire survey of 8 industries 121 companies 567 innovation samples of the Mayes show that 75% of respondents think demand is the main factor to stimulate enterprise innovation activities^[4]. In today's society, the enterprises gradually pay attention to consumer preferences and demand diversity heterogeneity in the evolution of technological innovation in the role, for example today, Chinese consumers a mainstream trend is with the concept of health products. Customers pay more attention to health today than ever. So in the spring of 2016 a large number of foreign brands drinks debut rum, according to a forecast report released the latest Nelson Chinese, beverage category in 2016 the market will further expand the scale, functional beverage and fruit juice will become the two major push. Drink beverage market development Feed enterprises according to the diversity of customer preference, and demand heterogeneity in product formulation, packaging style, and product specifications and other main push health drinks. From this, we can see that significant demand is an inexhaustible motive force for the reform of industrial technology.

III. CHINA'S NEW ENERGY AUTOMOTIVE INDUSTRY TECHNOLOGY INNOVATION AND MARKET DEVELOPMENT OF THE MAIN PROBLEMS AND CONSTRAINTS

A. High Cost of Innovation, Resulting in the Purchase and Use of the Product Is Not in Line with Market Demand

The initial stage of the development of new energy automotive industry, facing the same dilemma all the emerging high-tech industry, namely the innovation cost is high; resulting in low market awareness, related services supporting the imperfect situation of new energy vehicle price is high, beyond the ordinary consumer psychological expectations and can withstand the limit. Reasons for the following several points: first of all, are not to cross the border. Three new energy automotive batteries, motors, electronic control the core technology has not reached the very mature stage^[5]. Secondly, perfect supporting facilities. New energy vehicles are facing the greatest difficulty was undoubtedly charging facilities construction is lagging behind. Depending on data from the national grid, at present our country has built a charging pile number only 2.6 million. And often a hard charging, filled with long, resulting in need to charge extra parking fees, which have led to consumer acceptance is poor.

B. Consumer Demand Can not Be Effective in Stimulating Industrial Technology Innovation

In recent years, due to the increase of various policies and the concept of environmental protection, new energy sales volume rapid growth. But from an overall point of view, consumer demand is not yet high. According to a survey by Net Ease of automobile consumers' preferences: 2% of consumers have purchased or intend to purchase, 37% of the consumers are at the edge of the possible purchase, 60% of consumers have a wait and see attitude, see Figure 2. The reason. First of all, the industry on new energy vehicles in China is really green. There are questions. Secondly, China's auto consumption market generally has low levels of consumption, customers of energy-saving environmental protection technology awareness are not high, the industry concentration degree is low, scale production goal difficult to achieve.

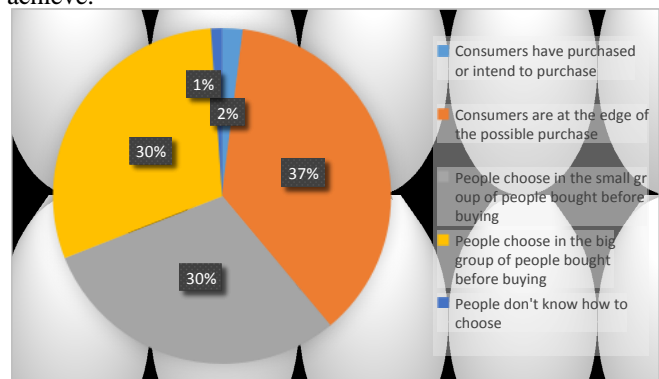


Figure.2. Consumers' acceptance of new energy vehicles

C. Technology Innovation and Market Demand Is Not Closely Combined

China's new energy automotive industry is showing a preliminary products supply and demand mismatch, that is, supply market or demand products etc. phenomenon. The reason, the development of China's new energy automotive industry into the subject has been the emphasis in government and scientific research institutes, the main research can't very good docking

IV. ON THE NEW ENERGY AUTOMOTIVE INDUSTRY INNOVATION CAPABILITY AND MARKET DEVELOPMENT PROPOSALS

A. Implementation of the Fiscal and Taxation Policies to Promote Technological Innovation and Related Facilities

One is to increase financial investment in research and development, and new energy vehicles subsidies, the establishment of special funds, support for energy-saving and new energy vehicle demonstration and extension, arrange special funds for supporting, play government procurement policy in promoting independent technological innovation and encourage and support private purchase of new energy vehicles, encourage pilot demonstration of urban construction of charging facilities, to carry out battery recycling.

Second is to increase tax policy support, in the sales process, the production of tax subsidies Third is to improve the financial support system, Fourth is to strengthen the protection of intellectual property rights and the reform of the industry access system^[6]

B. Production, Learning, Research, Using a Combination of Technological Innovation Model

First of all, to encourage new energy automobile enterprises to enter the universities and research institutions, relying on talent advantage, development of new products, new technologies encourage universities and research institutes in conditions of the enterprise, the establishment of the master, doctoral flow station, attract outstanding research talents into doing research. Then fiscal investment to establish production, learning, extension of the cooperative research base and research results of the exchange center, enterprises, universities and research institutions advantage complementary and improve the effect of transformation of scientific research achievements

Secondly, the formation of leading enterprises, enterprises, government, research institutions, industry associations involved in the industrial innovation system, to large enterprises and industry associations lead in innovation, and makes the vehicle manufacturing, parts and components production, charging station construction related energy enterprises, upstream and downstream enterprises of all types

of common linkage, establishing favorable to the production, learning and research, dynamic mechanism of effective communication

C. Expand Energy Conservation and New Energy Vehicles Promotion and Application

By strengthening the bus demonstration, and ultimately promote the private car market consumer demand. To pilot demonstration area as the basis, to further expand the energy-saving and new energy vehicles to promote the application scope, and guide the non pilot demonstration area of a charging infrastructure is established, to encourage car enterprises R & D and production of a variety of vehicles and for the needs of different consumer groups, support public sector procurement of energy-saving and new energy automobile official vehicles, increase the proportion of government procurement, also give enterprises to purchase personal and financial subsidies or tax breaks to buy.

D. Vigorously Promote the New Energy Automotive Industry Business Model Innovation

The innovation of the supply mode, the implementation of battery leasing profit model, improves industry profitability, can effectively promote the development of new energy automotive industry. The innovation of financial operations, to encourage the city taxi company or the bus company can take the financing lease mode, solve a vehicle purchase financial pressure. From 4S to 5S 6S's business model in vehicle sales, spare parts, service, customer service, information feedback 4S marketing mode based on the period before and after the end of and increase the product diversification and personalized manufacturing, run in period of driving experience, battery charging and maintenance free rental, and other services, to encourage new energy automobile dealers joint production, supporting enterprises to create 5S, 6S etc. the new business model

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