Research on Urban Innovation and Entrepreneurship Base Based on Energy Saving, Emission Reduction and New Energy Development

Wei Wei*
Entrepreneurship Guidance Center, Tianjin University Renai College, Tianjin, China

*Corresponding author: jingzhang@tju.edu.cn

Abstract. Innovative companies often face strong resource disadvantages, making it difficult to gain a foothold in emerging industries. Existing research still lacks an in-depth investigation of the internal mechanism of how innovative companies in emerging industries break through resource constraints, successfully develop entrepreneurial opportunities, and then build competitive advantages. Based on this, this article sets a new orientation for the training objectives of innovative and entrepreneurial professionals in the maintenance of new energy vehicles, designs a connection plan, builds an integrated curriculum system, and optimizes professional courses at different stages.

Keywords: Energy saving and emission reduction, new energy, innovative city, innovation and entrepreneurship.

1. Introduction
In recent years, my country’s new energy industry has developed rapidly, especially in photovoltaic power generation, wind power generation, nuclear power technology, and strong smart grids based on new energy access. My country has changed from a technology learner to a leader in advanced technology. A new stage focusing on independent R&D and innovation of technology and equipment. The transformation and upgrading of my country's new energy industry has brought historic opportunities for the development of the power industry. In the context of the accelerated development of the industry, more and more new equipment, new technologies, and new processes are being developed and applied. Related industries and enterprises have put forward newer requirements for the quantity and quality of innovative high-skilled talents [1]. The resource patchwork theory aims to describe how a new enterprise can survive and grow in a highly resource-constrained context by creatively using existing resources and social networks, which helps explain the process of constructing a competitive advantage for new energy vehicles and new enterprises. However, the research of resource patchwork is still in the stage of theoretical discussion, and the relationship between the realization of entrepreneurial resource value and opportunity development from the perspective of patchwork has not yet been theoretically constructed.
2. New energy vehicle development model and effect

The organizational model of industrial development is the way of resource allocation of the entire industry under the constraints of factors, which mainly includes the development model of industrial clusters, the development model of industrial alliances and the model of industrial integration. The development model of industrial clusters is a new form of spatial economic organization between the market and the hierarchical system [2]. Many enterprises, institutions, organizations and other actors in the industry gather in a certain area and share resources with each other. There is a production organization model that has close personnel and information exchanges, and gains a competitive advantage in competition and cooperation.

Industrial alliance refers to two or more enterprises in the industry in order to achieve market advantages, seeking new scale, standard, function or positioning, resource and knowledge sharing, risk sharing, and complementary advantages formed between enterprises. Vertical integration of industries, where companies expand along the industrial chain and lay out their business in several links of the industrial chain is called vertical integration. According to the current situation of new energy vehicles, it is more appropriate to choose the axle-wheel industrial cluster development model. With FAW as the axis, other power battery manufacturers, motor manufacturers and electronic control manufacturers and other key component manufacturers are distributed around FAW and work closely with FAW while maintaining independence [3]. The main purpose of the New Energy Automobile Industry Alliance is to develop new technologies so that new energy vehicles can be scaled and industrialized as soon as possible. Therefore, it should be an alliance that opens up new fields. Figure 1 shows the industrial alliance model, and Figure 2 shows the industrial cluster model.

![Figure 1. Industry alliance model](image-url)
3. Relevant factors affecting the construction of innovation and entrepreneurship bases

(1) Initial resource endowment. The initial resource endowment refers to the total capital that the entrepreneur had before starting a business, including capital, human capital, social network, reputation, etc. The initial resource endowment of a new energy vehicle new enterprise with a state-owned enterprise background has both advantages and disadvantages [4]. Therefore, using superior resources and inferior resources to measure the initial resource endowment can more comprehensively cover the characteristics of the initial resource endowment.

(2) Patchwork of resources. As mentioned earlier, resource pooling refers to immediate action and reorganization of existing resources to solve new problems and develop new entrepreneurial opportunities. Based on literature reading and semi-structured interviews, we have summarized two ways to put together resources. One is the means-oriented resource piecing based on the company’s existing resources; the second is the social network type that integrates external resources with the help of established network relationships.

(3) Opportunity recognition. Opportunity recognition refers to the identification of an initial idea and then transforming it into a business idea that can create value. Only when an entrepreneurial opportunity is identified and considered to have commercial value can it be possible to obtain entrepreneurial profits. Therefore, we use the identification of potential initial ideas as a key measure of opportunity identification.

(4) Opportunity utilization. Opportunity utilization refers to the establishment of effective large-scale operations for products or services formed by business opportunities. The existing measurement of opportunity utilization mostly focuses on the decision-making and intention of opportunity utilization, and lacks the measurement of opportunity utilization behaviour. Therefore, we start from the origin of opportunity, regard technology and market as the main aspects of opportunity utilization activities, combine interview materials, use market-based opportunity utilization and technological opportunity utilization to summarize opportunity utilization, which has certain theoretical validity.

(5) Competitive advantages of new enterprises. Competitive advantage mainly refers to the ability of enterprises to show good performance in market competition. The competitive advantage of new enterprises is measured by market response speed, product quality, production efficiency, and innovation speed [5]. This article takes new enterprises in the new energy automobile industry as the research object, mainly examines the competitive advantages of products and markets, combines existing research and semi-structured interview data, and selects market share, product performance, new product development, and market response speed as metrics an important indicator of the competitive advantage of a new enterprise.
4. Construction of a training base for urban innovative talents under the development of new energy vehicles

4.1. Cultivating the link between curriculum system and content

Implement 6 years and 12 semesters ("5+0.5+5+1.5") of the combination of work and study. The first "5" is the 5 semesters during the student's on-campus period, the second "0.5" semester is for the productive training of car maintenance, repair and reception, etc. in the off-campus training base, and the third "5" is high at the school stage, the fourth "1.5" is the company's on-the-job production internship stage, and on this basis, the curriculum connection for middle school students will be constructed. Curriculum connection includes two aspects: the connection of curriculum system and the connection of curriculum content. The connection of professional curriculum system is the key to the connection of secondary and high vocational education [6]. In the connection of professional courses, there are basically two modes: one is vertical promotion, that is, students can obtain vocational qualifications in the same or similar work fields at all stages, but the vocational qualification level obtained at the student stage is higher than that obtained at the student stage Professional qualifications. The second is horizontal expansion, that is, students obtain vocational qualifications in different fields of work at various stages, but the level of vocational qualifications obtained by students is mainly suitable for cultivating compound talents. Based on the target positioning of talent training proposed in this topic, an integrated curriculum system framework is designed. As shown in Figure 3, the connection of professional courses has achieved vertical and horizontal development, that is, in the maintenance field of traditional automobiles (internal combustion engine power), professional courses are promoted vertically, and the electromechanical maintenance of traditional automobiles is extended and deepened in the direction of electronic control technology. In addition, through the horizontal expansion of professional courses, students will have basic maintenance and inspection capabilities and qualifications in the field of new energy vehicles.

Figure 3. The framework of the core curriculum system for the integration of new energy vehicle personnel
The professional courses for the application and maintenance of new energy vehicles, in accordance with the requirements of professional positions, strengthen the training of employability, and build a professional certification system for the implementation of the "dual certificate" system; open the teaching resource environment to meet the needs of students for independent learning, and provide training and training for high-skilled talents [7]. Build a lifelong learning system and build a public platform. Design the main curriculum system of the new energy major, which mainly contains 16 courses, as shown in Table 1.

| Serial number | Course Title                                                                 | credit | Class hours | Assessment  |
|---------------|------------------------------------------------------------------------------|--------|-------------|-------------|
| 1             | New energy vehicle electrical and electronic technology                       | 3      | 54          | examination |
| 2             | Introduction to New Energy Vehicles                                          | 2      | 36          | test        |
| 3             | Maintenance and maintenance of new energy vehicles                           | 4      | 72          | examination |
| 4             | New energy vehicle electrical system maintenance                              | 4      | 72          | examination |
| 5             | New energy vehicle body control system maintenance                            | 5      | 90          | examination |
| 6             | New energy vehicle chassis system maintenance                                 | 3      | 54          | examination |
| 7             | Electric Vehicle High Voltage Power Consumption and Protection                | 4      | 72          | examination |
| 8             | New energy vehicle power battery and management system maintenance           | 3      | 54          | examination |
| 9             | Automobile drive motor and control technology maintenance                     | 3      | 54          | examination |
| 10            | New energy vehicle at network system maintenance                              | 4      | 72          | examination |
| 11            | Hybrid electric vehicle structure and maintenance                             | 3      | 54          | examination |
| 12            | Internet of Vehicles Technology and Application                               | 2      | 32          | test        |
| 13            | Comprehensive troubleshooting of new energy vehicles                          | 2      | 54          | test        |
| 14            | New energy vehicle maintenance business reception                             | 2      | 54          | test        |
| 15            | New energy vehicle operation and management                                   | 2      | 54          | test        |
| 16            | Auto insurance and claims                                                     | 2      | 54          | test        |
| total         |                                                                               | 48     | 932         |             |

4.2. Professional positioning of new energy vehicles

The investigation found that the employment direction of the three different levels of undergraduate, junior college and secondary vocational students majoring in new energy vehicles is different. Undergraduate college graduates are mainly engaged in new energy vehicle product design, research and development, testing, modification and other related work; higher vocational college graduates are mainly engaged in new energy vehicle production, maintenance, fault diagnosis and repair, vehicle sales, claims, after-sales service, etc. Work; New energy vehicle graduates from secondary vocational schools are mainly engaged in front-line operations such as new energy vehicle manufacturing, maintenance and sales [8]. The new energy vehicle major of undergraduate colleges should be positioned to cultivate engineering and technical talents in the design of new energy vehicles and parts, production process preparation and innovation, and key component development; the new energy vehicle major of higher vocational colleges should be positioned to face new energy vehicle production and maintenance service enterprises, training to be able to engage in the production, manufacturing, process processing, after-sales service and operation management of hybrid vehicles, electric vehicles, and bioethanol vehicles, and engage in after-sales service of new energy vehicles; new secondary vocational schools The energy vehicle major should focus on cultivating the first-line skilled personnel for the production of new energy vehicles and parts, as well as the new energy vehicle maintenance and sales skills.
5. Conclusion
The creation of enterprise innovation is the process of successful development of entrepreneurial opportunities. In the early stage of enterprise growth, enterprise innovation attempts to perceive market demand or tap untapped resources, aiming to identify entrepreneurial opportunities that can transfer resources to a more promising and optimized configuration. In the new energy automobile industry, the market environment is still unstable and the supply chain needs to be improved, which undoubtedly increases resistance for enterprises to innovate and explore new market demands. Enterprise innovation with a state-owned enterprise background has a certain initial resource endowment. Redundant resources in manpower and technology drive enterprise innovation through means-oriented resource patchwork activities to find matching entrepreneurial opportunities and promote the identification of new opportunities.

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