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Research on Knowledge Flowing Path of Innovation and Entrepreneurship Education

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ABSTRACT
This article researched constructing path of knowledge network about innovation and entrepreneurship in universities. On the perspective of cultural and creative fields, establishing the theoretical model of knowledge flowing path among faculties, students and industrial incubators. Following a logic order with categories-attributions-connections based on the theory of value network and modularization. By analysing the case of Q University, summarizing its modular format, and characteristics of knowledge flowing path in the phase of incubation.

Keywords: *Knowledge Flowing, Innovation and Entrepreneurship, Actors.*

1. INTRODUCTION

In recent decades, innovation and entrepreneurship education has become the third major mission of universities in the process of nurturing students. How to build the education system for innovative and entrepreneurial practice? How to deeply promote the cooperative linkage between universities and industry? These related issues are key problems have to be resolved in the development of innovation and entrepreneurship education. In china, integration of campus and industrial park has become a useful model for development of innovation and entrepreneurship education. Innovation and entrepreneurship education can accelerate the binding of theoretical and practical work. In the normal situation, universities will kick off the innovation and entrepreneurship education from the course called as basis of innovation and entrepreneurship. But the essential work of innovation and entrepreneurship education is for construction of knowledge network among teachers, students and related enterprises, who are the decisively creative capacity for innovation. Exclusive knowledge network is the core of successful education. So, the relationship and knowledge flowing path among teachers, students and enterprises in the education system, as well as the developing routine schedule, play theoretical and practical meanings in the process of sustainable development of innovation and entrepreneurial education.

2. THEORETICAL BASE AND KNOWLEDGE ACTORS

2.1. Value Network and Modularization Theoretical Basis

The value network is analytical method about resources allocation in the process of value creation activities. Normann and Ramirez (1993) argued that in the modern economic environment, the strategy of enterprise development should concentrate on the social network of value creation with the systemic innovation view which is about flexible cooperation[1]. Thus, the nodes in the value network represented as teachers, students and related organizations involved in the process of knowledge values creations. And every single node forms an entire education system through delivering of tangible and intangible resources. Furthermore, the modularization theory holds that the modular integration of the value network should according to different functions, especially in the context of the complex value network system, along with the sophisticated value flowing among nodes. The modularization theory was widely used in the field of computer software at beginning. Baldwin(1997) argued that different modules are designed independently based on network rules and created value. Ultimately, they are integrated into an efficient value network system[2].

Innovation and entrepreneurship education as a variable knowledge integrated process, the resources

delivery between nodes mainly expressed as transmission of knowledge value. Therefore, this study analyzed the construction path of innovation and entrepreneurship education system is mainly on the perspective of the construction of the knowledge value network. Starting from knowledge actor to the actor's knowledge attribute, through the case study to achieve the module division of value network, and finally this study will form a conceptual model about the knowledge value delivering. In the other word, according to the logical relationship of the category-attribute-connection, we analyzed the network structure of knowledge value about the innovation and entrepreneurship education.

2.2. Knowledge Actors

Yongming Shang, Gang Zeng(2015) argued that alliances between universities and enterprises are the source of regional economic development models[3]. This area not only should be sustainable and referred to in the regional economic development, but also has a certain meaning in the process of guiding the construction of education system. Landry(2000) summarized the characteristics of the innovative milieu of the western urban in the book 'Creative City'--Located in the center of the city, the four corners of the area are characterized by churches, government agencies, universities and trade markets[4]. The central area is enterprise land and public land which is aimed to build a platform for the creative talents to exchange ideas and transfer knowledge freely. Based on the innovative milieu of the western city, the knowledge actors who form the innovation and entrepreneurship education system can be divided into seven parts: 1. innovative and entrepreneurial students, 2.normal students, 3.innovative and entrepreneurial incubators, 4.cultural and creative research institutions of universities, 5. administrative department of universities, 6. economics and management department of universities, 7. Simulated markets of innovative and entrepreneurial activities.

Table 1. Conclusion of knowledge attributes and flow characteristics

Knowledge Attributes / Flow Characteristics	Analytical	Synthetic	Symbolic
Innovation Path	Creation of logic knowledge	Innovative integration of existing knowledge	Reintegration of existing knowledge in the new context
Core Method	Theoretical model based on induction	Combination of applicative questions	Reuse or challenge traditional customs
Cooperation Mode	Formal cooperation between actors	Interactive learning with customers and suppliers	Learning and communicating with experts and street cultures
Knowledge Form	Dominated by explicit knowledge with the form of patents and publications	Dominated by tacit knowledge related to social resources and efficient management	Tacit knowledge (spirit) depends on experience
Knowledge Actors	Universities' teachers	Industrial incubators	Innovative and entrepreneurial students

3. CONNOTATION AND ATTRIBUTES OF ACTORS' KNOWLEDGE

3.1. Connotation of Actors' Knowledge

Although, according to the education function, the knowledge actors can be classified as 7 types. In the terms of the knowledge connotation of actors, it can be simplified as three main types: core entrepreneurial talents (students), industrial organizations and research institutes of universities. First, core entrepreneurial talents (students) are essential actors of innovation and entrepreneurship education system. The key work of this education system is to stimulate the cooperation among students and finally create the valuable products. Therefore, knowledge connotation of creative talents mainly refers to innovative skill mastered by talents and can be used to create economic value. It emphasizes more functions of direct contribution to economic value. Second, as catalyst of innovation and entrepreneurship education, industrial incubators make overall planning for limited economic and social resource, expecting to reach the better efficiency of value creation. So, the knowledge of industrial incubator is inclined to social and industrial resources support for innovation and entrepreneurship education. At last, departments of universities are thinking tanks of innovation and entrepreneurship education system. They undertake the task of strategic management for incubated organizations. Obviously, the connotation of knowledge mainly underlines abstract theory and highly-concluded entrepreneurial knowledge.

The value co-creation of innovation and entrepreneurship education system is closely centered around universities as foundation core, industrial incubator as driving force, entrepreneurial talents as the direct manifestation.

3.2. Knowledge Attribute of Actors

From the intellectual background of innovation and entrepreneurship activities, Bjorn T. Asheim (2009) divided knowledge into three types: analytical, synthetic

and symbolic[5]. Each type of actor has important effect on talents and entrepreneurial environment. Actors show different preference for knowledge sharing in the process of innovation. This study draws on Asheim's division for creative knowledge, concluding different attributes of knowledge (as shown in table 1). Theoretical knowledge is the main knowledge type of universities, such as cultural and creative institutions of universities, economics and management department and administrative department. This kind of knowledge is obtained through formal cooperation between organizations, based on theoretical construction or logical induction to obtain the explicit knowledge and taking the patent or publishing thesis as the final form. Synthetic knowledge is the main type of industrial incubator, such as firms for recruiting business entity and event planning organization. This kind of knowledge summarizes the new regulated knowledge through communicating with suppliers and customers in practice work. It is the main way of innovation and tacit knowledge is main knowledge type related to know-how and efficient management. Symbolic knowledge is the type of core innovation and entrepreneurship talents (students), such as music production or fashion design enterprise, such knowledge mainly absorbs inspiration from previously professional groups or marginal street culture, challenges traditional customs as a core way of knowledge creation. Random and relaxing communication as main form, knowledge type mainly lie in learning exchange of tacit knowledge or form studying process of tacit knowledge in communication.

Innovation and entrepreneurship education system is composed of students and related teachers as well as industrial incubators. The disciplinary professors guide the students to understand the process of innovation and entrepreneurship and help the potential students seek the interested project. Counsellor of universities as the intermediator among disciplinary professors, industrial incubator and students and means they can well communication with other actors. For students, counsellors are the behaviour guider and controller. For disciplinary professor, counsellors are the professional assistance to communicate with students and industrial incubator. For industrial incubators, counsellors are the advanced entrepreneurs who can cooperate with students. The course named as basic theory of innovation and entrepreneurship accelerates the formation and understanding of entrepreneurial project in the way of providing more opportunity to experience for students. Therefore, the knowledge attributes of students are symbolic and tacit. Industrial incubators and complementary enterprises undertake the functions of integration and improving the efficiency. So, its knowledge attribute is synthetic. At last, professors and counsellors of universities are thinking tanks and their knowledge is analytical. In conclusion, knowledge network of innovation and entrepreneurship education system is mainly based on the entrepreneurial talents (students) who create the valuable project and then creating symbolic knowledge based on the learning and communicating with variable experts.

4. CASE ANALYSIS

4.1. Case Introduction

This study took Q University as the object of study. The development of innovation and entrepreneurship education focus on fashion industry based on the distinguished fashion major in creative industry institution of Q university. Since the government advocated activities of innovation and entrepreneurship, the innovation and entrepreneurship education system of Q university developed from nothing. And until now, it has formed an entire system to improve students' ability in the field of innovation and entrepreneurship. It has accumulated enriched experiences at communicating path among different actors and the first author of this study visited Q university for one year and attended the courses and workshops about the innovation and entrepreneurship, as well as observed the activities of teachers and students in these events as the first-hand resources for this study.

4.2. Theoretical Model of Innovation and Entrepreneurship Education

The theoretical model of innovation and entrepreneurship education is formed by the knowledge flowing path among different actors. The innovation ability of education system mainly relies on the implicit knowledge created in the process of studying and living. So, the implicit knowledge is acquired in the exchange of the professional creative subjects and local culture. The implied knowledge has a high degree of sticky and distinctive local cultural characteristic. It is often difficult to use codified and formal language to express. Therefore, in order to study the knowledge flow of innovation and entrepreneurship education system at the initial stage, the key work is to reveal interactive ways and the process of interactions among actors. As shown in Figure 1.

As shown in Figure 1, cultural creative research institutions plus economics and management department are the basic research actors of universities which are the basis of the innovation and entrepreneurship education system. They hold the major professional knowledge and can empower the students to success the innovation and entrepreneurship activities. But the main form of the knowledge scholars hold is explicit and they would not like to directly participate innovation and entrepreneurship in full time. So, they are located in the bottom line of this figure. Above the bottom level is the administrative department which are the linkage between direct actors and indirect actors. Administrative department is a part of university but their major work is

serving the education process and taking care of the psychological and living conditions of students. Counsellors are the core of administrative department who are closer to students than scholars but not enough practical comparing with industrial incubators. So administrative counsellors are being considered as the structural hole of innovation and entrepreneurship education system. The upper level of this figure are direct actors of innovation and entrepreneurship education system. They are the superstars of this education system. Although students registered in professional department of universities but they have to step out of the network of the campus for seeking innovation and entrepreneurship opportunity. So, students are out of the campus and enter into incubators for practicing their ideas which knowledge flowing inclined to implicit knowledge.

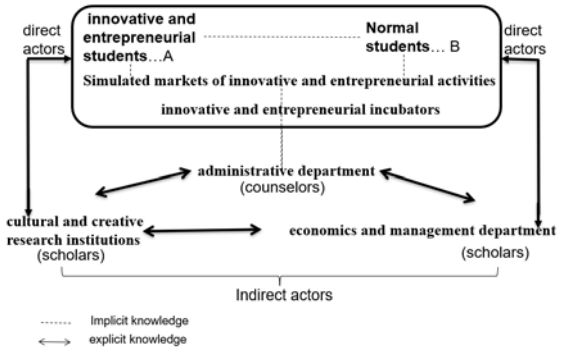

Figure 1 Innovation and entrepreneurship education system

5. DEFAULT RULES OF KNOWLEDGE FLOWING

In the stage of incubation, the default rules of the knowledge flowing in the education system are based on the explicit knowledge of university's researching institutions, aiming at nurturing the implicit knowledge of the system. Formation of default rules for system is based on the practice of communication and cooperation among actors, and build up the rules for mutual aid and learning in the form of incubated enterprises' association, community and so on. In addition, the initial knowledge flow of the education system should balance the role of students and institutions of universities in the formulation of rules. The knowledge's flowing default rules of talents' association transferring to universities, researching institutions who then can fully integrate the explicit knowledge of the analytic model, and finally optimize the default rules.

Forming the implicit default rules about innovation and entrepreneurship education system can automatedly select the cooperative way of innovative activity and effectively reduce the disordered cooperation and conflict among actors. Incubated firms are the core actors of knowledge flow and value creation. Its innovative ability and knowledge communication's behaviour directly determine the performance of education system. Therefore, talents (students) should always dominate the process of knowledge flowing. According to the original intention of developing innovation and entrepreneurship education system, we can integrate creative organizations with regional cultural characteristics to form the concept of efficient value creation with the talents. We gradually shape the knowledge flowing path that integrates regional cultural characteristics through the knowledge's complementation and coordination among actors.

6. CONCLUSION

The evolutionary characteristics of innovation and entrepreneurship education system can be summarized as from guidance to self-organizing. At the beginning of the system, construction of default rule is the main target. As the development of the education system, the system can improve to an entire ecosystem which can be the cradle of the innovation and entrepreneurship.

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