

Value Realization of University Libraries in Social Dynamic System of Scientific and Technological Innovation

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Abstract. Social system of scientific and technological innovation is a dynamically changing system constituted by multiple main bodies. The survey shows that the functions and value of university libraries in it have not yet been fully recognized. University libraries should conduct self-innovation, create brand service products and cultivate a knowledge-based professional service team. Besides, they should also reform the information quality education for students and strengthen the training of innovative talents. Innovation activity links of science and technology need to be actively and flexibly embedded. They should pay attention to strengthening product packaging and promotion to play their role implicitly and explicit in multiply aspects, thus realizing their value in social dynamic system of scientific and technological innovation to the full extent.

Introduction

Science and technology are the primary productive force, and scientific and technological innovation is the goal that science and technology pursue and the source of social progress. System theory believes that scientific and technological innovation is a social production system involved diversified main bodies of innovation where each main body undertakes its respective responsibility, and the main bodies as a dynamic circular system are interdependent and interactional with each other. In this dynamic social production system of scientific and technological innovation, what kind of responsibility should university libraries bear, and what roles and how do they play these roles to achieve their maximum social value? These are the main issues to be discussed in this paper.

Social dynamic system of scientific and technological innovation

Social dynamic system of scientific and technological innovation is a social production process of knowledge constantly updating and technology transferring involved multiply main innovation bodies and a variety of innovative elements. Establishing the orientation of university libraries in the system by analyzing the relationship between main bodies; studying the important innovative elements can help clarify the libraries' responsibilities in the system.

Diversified main bodies of scientific and technological innovation

According to some theories, scientific and technological innovation is the need and the result of collaboration of the whole social system. Social scientific and technological innovation is an innovative network system where the government, universities, research institutes, enterprises and users are main bodies, and on the basis of trust they establish stable relationships in the long-term cooperation by ways of scientific and technological policies, sharing platforms, technology intermediaries, financial innovation, regulatory mechanism and so on. In this network system, the main bodies play different roles and functions, among which the government is the leader in innovation environment, enterprises are the main bodies in technological innovation, universities and research institutes are the source of technology transferring, while users are the guide of technology demands. They are in a relationship of equality and reciprocity, complementary with each other in functions. With the deepening cooperation and expansion among these main bodies, universities have been developed more broadly and more directly in their scientific research functions. Some of their latest research findings can be directly converted into products for enterprises. Some can help

enterprises promote their scientific and technological innovation or improve production management and foster productivity, thus realizing universities' value as producers of scientific and technological innovation in the whole social innovation system.

Innovation of "human " element

It is undisputable that science and technology are the primary productive force. However, there must be three factors for transforming science and technology into productivity, knowledge of science and technology, innovative talents and market demands, while the " human" factor is the most important. Knowledge is the reflection of things and their law of development in human brain. Only by being known, mastered and applied can science and technology be transformed into production capacity and the power of practice in practical activities so as to enhance social productivity. Moreover, knowledge innovation is a kind of cognition sublimation on the basis of original knowledge and technology. Scientific and technological innovations include the innovations of knowledge and technology, and knowledge innovation includes the innovations of theories and talents. New knowledge innovation will bring new technological innovations that in return can promote the progress of knowledge to a higher level, thereby forming a innovative production chain of science and technology that increasingly develops. In this innovation chain, knowledge innovation is the foundation and guarantee of technological innovation, and technological innovation presents social value of knowledge innovation. New theories and innovative talents will interact and work together on the innovation of knowledge.

Thus it can be seen that in the innovative production chain of science and technology, "human" is the most important factor. Innovative talents mean the success of innovation, so the cultivating of innovative talents is a very important part in the entire innovative production chain. In this social production system of scientific and technological innovation, the most important and basic function that universities as one of the innovative main bodies undertake in those responsibilities is to cultivate talents. In the increasingly competitive social environment of science and technology innovation, this function has been more intensified, and universities were required to emphasize and strengthen the cultivation of innovative talents. Universities by taking measures of discipline construction, professional reform, and curriculum restructuring and so forth cultivate more young talents with innovative spirit and innovative abilities, providing strong wisdom power of scientific and technological innovation for society and thus indirectly boosting the advance of productivity. Universities throughout the innovation system are not only one of the main bodies of direct production, but also a producer of scientific and technological innovation, whose importance of its position and role is self-evident.

The demand status of university libraries in innovative activities of social science and technology

University libraries as a literature information guarantee center of institutions of higher learning have noticeable advantages in information resources. According to the incomplete statistics, the total literature resources of university libraries total account for 60% of all social information. As we all know, rich information resources are the foundation and capital for university libraries to keep a foothold in eco-system of scientific and technological innovation.

Analysis of university libraries' functions in social activities of scientific and technological innovation

What functions do university libraries play in social activities of scientific and technological innovation? To put it simply, there are two: the recessive function and the dominant function. On one hand, the recessive function of university libraries is indirectly realized through the function of education, that is to say, they provide literature information resources and educational environment for innovative talents in universities, offer universities academic service of high quality, carry out information educational activities like information quality teaching to raise students' innovation awareness, and establish reading innovation communities to help students develop their innovation capability. On the other hand, university libraries also can provides information service through other

main innovation bodies and help complete a micro-innovative process that can indirectly act on social scientific and technological innovation, thus embodying the service value of university libraries in social system of scientific and technological innovation.

As to the dominant function, university libraries directly contribute to social activities of scientific and technological innovation. There are many approaches, such as embedding into every aspect of the innovation activities and integrating their wisdom power into the process of innovative design, experimentation and transformation. Other work like novelty search of science and technology also can be implemented, making objective novelty judgment on creative ideas that play a direct role at the initial conceptual stage to avoid rehandling labor of scientific and technological power and the waste of funds; developing information products, issuing policies and industrial information, or directly undertaking innovative projects, designing and producing innovative products to directly affect the innovation activities of other main innovation bodies.

Status survey of the demand degree of social scientific and technological innovation for university libraries

University libraries have advantages of information resources and information pipelines, but are their role in current innovation system truly recognized by other main innovation bodies in the system? What is the degree of demand for them in social activities of scientific and technological innovation? We have conducted a relative survey on 102 enterprises of science and technology identified by the government, including 15 large enterprises, 31 medium-sized ones and 56 small and micro enterprises.

Self innovation, realize the greatest value in social technology innovation ecological system

At present, elements in social technology innovation are at conditions change quickly, university libraries need capture the change of the restricting factors of scientific and technology; analysis the reason and influence of change of various factors; do self-innovation; change the invariable service mode in the past; use the information resource and human resource flexible; implement dynamic focusing type service mode; improve the suited ability of themselves and social technology innovation system, give play to maximum effect; realize the greatest value in technology innovation social system.

Practice the internal strength; realize the value of university library technology innovation service

Talent is not only the innovation strength, but also the main power in the service innovation. If university libraries want to realize the service value in technology innovation activity, they should attach importance to the construction of professional talent team; focus on service innovation goal; strengthen the structure planning of talent team; build innovative learning environment; pay attention to knowledge complementary and restructuring of talent team; form the knowledge professional service team; intensive team knowledge and wisdom power to serve for science and technology innovation.

The recognition of university library is not high, much of the reason is due to they don't form their brand service products. Therefore, cultivating brand service products should become an important subject of university library. In careful study science and technology innovation demand; analysis their conditions objectively; concentrate superior forces and develop service products to meet innovation demand. University library with good condition can develop in many directions; create many competitive brand service product; while, university library with less condition can choose to cultivate one or two advantage service product to create for brand. One can carry out subject service or college innovation service in recessive aspects; it can also show the dominant role of university library through science and technology novelty search, information analysis, and competitive intelligence products.

Therefore, university library should give play to the advantage of literature information resource; create their own brand service products; establish and build a knowledge professional service team;

strengthen library core competitive power, this is the foundation to realize the service value of scientific and technology innovation.

Set up diversified system; realize the value of university library technology innovation

The realization of value of science and technology innovation education in university library, it mainly reflects in innovation quality cultivation of college students, namely, cultivating college students' innovative consciousness, innovative thinking and innovative ability. Information literacy education is the main battleground for university library to cultivate college students' innovation quality. The traditional information literacy education couldn't adapt to the demand of technology innovation development, and must be carried out reform in comprehensively, which includes education pattern reform and teaching reform.

Flexible embedded actively, realize the direct value of university library technology innovation

The relationship of innovation main body of scientific and technological dynamic system is interdependent and influences each other, not hold by using the so-called executive orders, the common pursuit about science and technology is the most important foundation. University libraries should exchange, share, and collaborate with other innovation main body organizations, they shouldn't be limited to the boundaries of universities or libraries, service objects should face to whole society, service content should meet demand the requirement of innovation.

Creating diversified service platform, university library not only take the university as platform or realize the social service value through the collaboration of school scientific research units, but also set up directly collaboration relationship by using available advantage resources with government, enterprises, research institutions, and subscribers, besides, university libraries could give play to the advantages of mature operation university library joint network and regional library shared network, it has become a science and technology information center in cross-industry.

Breaking the mechanism of personnel organization; cooperate research organization corresponding service team of innovation projects; use the high quality service to embed into every research link in technology innovative activity; formulate the corresponding service plan to different content in different research stages; offer different level s of service, such as science and technology novelty search, intelligence analysis, information predicting, technical support, planning research, project cooperation, science and technology intermediary, the library research academic ability and wisdom are embedded into science and technology innovation activities in needed way flexible; realize the consistent of the embedded service and information demand of innovative main body.

Strengthen the service brand packaging, attach importance to the propaganda, and expand influence

As the saying goes, Good wine needs no bush. However, the survey shows that good wine also needs bush. Therefore, when university libraries create high-quality service brand, they should pay attention to strengthen the service brand package; analysis the demand characteristic; refine the brand service content and centroid, offer custom service for different demand of social and technology innovation; meet the different consumption level and different characteristic of multiple information service products under the same brand.

University libraries must also pay attention to strengthen propaganda, using various channel and media, like newspaper, website, and micro blog to promote scientific and technology innovative service. The science and technology novelty search service of Huizhou university library can get corporate identity; the important reason is that Huizhou science and technology bureau establishes a special link in its website. University libraries can also participate in science and technology enterprise innovation training activities or meetings of relevant government departments; explain scientific research innovation and knowledge for enterprises; give out propaganda productions of library science and technology innovative brand service; push the brand service of library to enterprise; make science and technology enterprises have opportunity to touch the charm of science and technology innovative brand service of university libraries.

Conclusion

Technological innovation is a social activity, talents, knowledge, technology, and market innovation elements are all in dynamic state. University library serve for social science and technology innovation; realize their value in the service. This is the best embedded in university libraries practical socialized service, and is also a good mechanism to realize innovative information sharing resources. Many libraries have adopted modular way or embedded forms to integrate into the science and technological innovative social system, and play a positive role in promoting social progress. However, in socialization science and technology innovative system, university libraries have great space, it needs to break system constraints; update the technological change and knowledge; realize self-consciousness; practical sharing and the spirit of innovation, so as to maximize the realization of social value of university libraries.

References

- [1] Lv Jing, Qingjun, Pu. The collaborative innovation of small and medium enterprises and model analysis [J]. Science & Technology Progress and Policy, 2011, (3): 81-85
- [2] Qi Lao, Zhang Ming, Ding Gang. Strategy on resource—sharing among collaborative innovation entities based on game theory [J]. China Soft Science, 2013, (1): 149-154
- [3] Nianjun, Xia. Statistic analysis on the research papers on university library's socialized service [J]. Research in Library Science, 2012, 10: 7-11
- [4] Huilan, Song. A survey and analysis of information literacy and cultivation of innovation talents of college students [J]. Journal of The Sichuan Society for Library Science, 2010, (3): 56-61