Research on Agricultural Technology Management Mechanism of Universities and Construction of Social Service Platform

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Abstract. Presently, to serve the society with technology is a main task of universities. Universities gather numerous specialized talents, and offer various curriculums, which deserves to be called the ocean of knowledge. Hence, universities play an important role in serving the society. In this paper, an attempt is made to discuss how to grasp the overall situation in technology management and serving the society in the long run, and enhance technology management mechanism and social service platform construction from the perspective of guiding role of technology management, to substantially improve both management and service, and promote universities to contribute social-economic development.

Introduction

Presently, universities have three major functions, i.e. scientific research, talent training and social service. Universities are the sea of knowledge. Once knowledge is combined with production factors, productivity can be generated, which is a force that cannot be ignored. This force can push forward enterprises to innovate production [1]. The enormous demand for technology in the process of China’s modernization promotes universities to become the main force of social service. How universities adapt themselves to the new situation in respect of technology management according to the realistic needs and development needs, and actively study their technology management mode and the construction of social service platform has become an important and urgent task. This paper aims to discuss the pathway of the building of social service capacity of universities from the perspective of technology management in combination with the guidance practice of technology management and social service of Fujian Agricultural and Forestry University (FAFU).

I. Social Service Strategy of Universities in Technology Management Process

1.1 Technology management innovation is the basis for universities to improve their social service level

The fundamental aim of technology management mechanism is to promote the efficiency of transforming science and technology to rise [2], and the essence of technology management practice is to regulate and control scientific and technological activities to schematically plan and coordinate the subject, object and information of scientific and technological activities, and raise the operating efficiency of the science and technology system. Science and technology plays an immeasurable role in promoting the harmonious development of society and economy in various aspects.

By the subject, technology management mechanism can be classified into three types: government technology management mechanism, university & research institute technology management mechanism, and enterprise technology management mechanism. The university technology management mechanism refers to the rules, systems and methods that universities must implement in the process of managing technology activities in their charge. Chinese universities must participate in various scientific and technological innovation activities, so they must innovate their technology management to raise the efficiency, to promote the cooperation between the
scientific and technological circles and industry and enterprises and realize the objective of sustainable and integrated development of technology of universities.

Chinese universities own abundant scientific and technological resources, but are not in line with the market demands. How to solve this problem must be taken seriously and focused on by universities to improve technology management. Through innovating technology management of universities, the poorly-managed scientific and technological resources can be put under good management and integration, so that the utilization rate can be raised, and the transformation of scientific and technological achievements of universities can be pushed forward under the action of market rules and incentive mechanism. Service rendering is the objective of technology management. Universities are supposed to drive the innovation of technology management mechanism with a new management philosophy according to their own characteristics, to push universities’ technology innovation activities to be line with social service.

Agricultural modernization is the only way for agricultural development. For agricultural modernization, talent investment, and scientific and technological innovation are indispensable. Accelerating the technology management innovation of agricultural universities can further promote universities to come in line with the actual situation of agriculture, and quicken the transformation of scientific and technological achievements, which is one of the indispensable driving forces to realize agricultural modernization [3]. Besides, agricultural universities should take the actual needs into account in developing their technology management mechanism, guide and motivate researchers to go to market and rural areas to help the peasants solve the realistic production difficulties, and carry out researches on topics and issues of technically actual significance and broad market prospect typically and purposefully.

1.2 Social service is an important criterion for quantitatively assessing and evaluating technology management of universities

Social service refers to that universities, besides talent training and scientific research, also output specialized talents and provide services to enterprises and even the whole society as needed. The service includes development of new technologies, transformation of technological achievements, provision of professional sci-tech consultations and guidance, etc [4]. Universities make direct contributions to all trades and professions and the economy by providing the aforesaid services to the society and enterprises.

Presently, the social service function of universities attracts more and more attention, which in turn urges universities to provide targeted services according to their technological advantages. This measure undoubtedly has greatly promoted economic development. In the 1980s, with economic globalization, science, technology and economy were further integrated. As a result, industry-university-research cooperation and joint scientific and technological innovation activities between various organizations and sectors were widely carried out, and many world famous universities established research centers in reliance upon their unique technology advantages to solve realistic social difficulties. In this respect, however, China lagged behind. Hence, scientific researchers of Chinese universities should be guided to carry out researches to address real social needs, and the government should make efforts to coordinate technology management with other sectors, to strengthen the link among the society, government, enterprises and universities. Why China lagged behind in this field was caused by China’s planned economic system in a sense. Consequently, universities failed to keep pace with the times to innovate their technology management philosophy, which was even regarded as a kind of rigid and passive service. We have been ignoring the core significance of technology management—innovation. Only creative technology management can give proper strategic guidance in scientific research [5]. Presently, to efficiently utilize the funds for technology development of universities, and smoothly transform the scientific and technological achievements of universities to have radiation effect on economic development, it is supposed to quicken the construction of a platform for serving the society with technology, which is an important criterion for assessing and evaluating the technology
management result of universities. The National Key Technology R&D Program and the National High-tech R&D Program of China (863 Program) also have reflected this.

II. Pathways of Agricultural Universities Innovating Technology Management Mechanism and Improving Social Service Platform Construction Level

2.1 Innovation of concept and mode of technology management

Agricultural universities are related to rural areas, agriculture and peasants. The distinctiveness of social service of agricultural universities has influenced their innovation of the concept of technology management. Any action is under the guidance of certain ideas. If the guiding ideas are not in line with the times, then the actions there under of course are expected to have no innovation. Research management of agricultural universities should create a proper scientific research environment as a server, to facilitate the transformation of scientific and technological achievements. According to different objectives and different needs, there are three ways for universities to innovate their technology management. Firstly, universities can adjust and innovate their technology management functions. The ideas and suggestions of research management of universities should be based on when establishing a technology development plan. The technology management team of FAFU has reviewed the systems and strategies on technology development within the province and learned about the conditions of technology management of other universities through exchanges and communications. Secondly, efforts can be made to innovate the technology management system, deepen university-industry cooperation, develop cooperation with local agricultural sector in technology, and establish a cooperative relationship with local government, to constantly enhance universities’ technological competitiveness and improve the base of scientific and technological achievement transformation to be more comprehensive and sound. A scientific research management mechanism supported by projects can make for giving full play to the advantages of all sides, and help them adapt themselves to the change of real needs, and completely integrate internal and external resource allocations. Thirdly, an incentive and restriction mechanism, and a rational feasible scientific research management evaluation mechanism can be established. More attention should be paid to the evaluation of social service, to form an incentive and restriction mechanism pushing universities to actively participate in social service and communication, realize rational and scientific research management evaluation, and promote researchers to participate in social service.

2.2 Coordination of scientific and technological resources of universities, and building of technology service platform

Firstly, universities should build a technology research and development platform, innovative technology team and innovation base, actively promote the transformation of scientific and technological achievements, establish a platform for modern agricultural technology innovation and transformation closely based on the large demand in modern agricultural development in Fujian for agricultural technology innovation, and integrate related technology innovation resources all over the province according to the main direction of technology innovation and transformation of FAFU in this field to establish a modern agricultural technology innovation and transformation platform consisting of improved varieties selection technology research and development center, agricultural product deep processing technology research, development and transformation center, featured horticultural product development center, agro ecological safety technology research and development center, modern forestry technology research, development and transformation center, biomass energy resource development and utilization center, and so on and perfect and improve it.

Secondly, research should be made on the organizational system of the peasants, to further consolidate the construction of the primary-level organization of the peasants, and promote the construction of new socialist countryside. Presently, the construction of Chinese peasant primary-level organization needs to be further improved. Thus, researches in this aspect should be
strengthened to facilitate the peasants in agricultural products purchase and provide more professional technical training to the peasants.

Thirdly, an innovation service platform should be built, and the achievement transformation channel should be unblocked. Efforts should be made to comprehensively utilize project promotion via exhibition, connection of scientific and technological achievements, smooth technology transfer, and gathering of talents in reliance upon the “6.18” industry-university-research cooperation channel of Fujian, and constantly push universities to promote the direct cooperation and transformation of achievements with enterprises via exhibition, scientific and technological achievement connection agreement signing ceremony, and scientific and technological achievement connection agreement signing ceremony, etc.

Fourthly, a university-industry scientific and technological cooperation platform should be built. Efforts should be made to create exchange opportunities between institute of science and technology of universities and enterprises, establish related scientific and technological cooperation relationships, and seek face-to-face negotiation chances via university-industry seminar and technical advisory session. It is suggested to integrate the resource advantages of universities in reliance on Fujian Department of Education, and establish the “Fujian Provincial Universities Technology Development Center” that is affiliated to Fujian Department of Education and provide project supporting services to enterprises and universities as an independent entity through researches and explorations, so as to encourage researchers to go to enterprises, rural areas and the front line of community construction.

2.3 Improvement of comprehensive quality of research management of universities

Technology management is not a simple task. It involves a wide academic scope, including arts, science, engineering, medical science, and agriculture science. Researchers don’t only act as “airfone”, and execute specific tasks or scientific research either, but also are required to achieve specific objectives. Firstly, they should be helped and encouraged to enhance the consciousness of innovation and social service. It is suggested to establish a researcher training system to train researchers to systematically master modern management knowledge, so that modern technology managers have both subject knowledge and management knowledge to improve the management and service ability. Only by doing this can the perspectiveness of technology management is reflected. In a long period in future, it is expected to form more accurate determination and planning of the coordinated development of technology and industry, and improve the professional level of technology managers of universities. In addition, the talent training mechanism also needs to be improved, and a talent management and evaluation mechanism should be established, to create an innovative cultural environment.

III. Guiding Practice and Exploration of Technology Management and Service of FAFU

3.1 Getting support from two aspects to unblock the industry-university-research utilization channel

Efforts should be made to combine the technology service mode of universities with local economic development service mode harmoniously. Firstly, the cooperation between university and enterprises should be strengthened, and a platform should be built for researchers to serve the society. Universities can sign cooperation agreement with municipal, county, town or village governments on planning projects to be developed preferentially, integrating resources and determining major projects by organizing and implementing “benefiting-farmers project” and constructing “ten-county, ten-town and ten-village technology demonstration sites”, etc. The implementation of Juncao (mushroom) technology in Changji Prefecture in Sinkiang under the direct support of our university has solved the technical difficulties of the Juncao industry development in Mount Tianshan, boosted the Juncao industry development in Mount Tianshan, and increased the income of the farmers and herdsmen there year by year. FAFU attaches great importance to poverty alleviation by science and technology and the construction of new socialist
countryside. During the period from 2006 to 2009, the university had sent professional scientific and technological personnel to make plan for the Bayi village in Sanming Xiaotao town; drew 3 persons from the small talent pool and sent them to take a temporary post in poverty-stricken rural areas in Fujian in 2 batches. Under the help of FAFU and the leadership, care and support of the Party committees and governments at all levels, remarkable achievements have been made in poverty-relief work, both economy and various social undertakings have greatly developed, the peasant’s producing and living conditions have been greatly improved, and the poverty-stricken rural areas in Fujian have taken a stride towards the objectives of construction of new socialist countryside. Secondly, the achievements of “6.18” should be made use of, to accelerate scientific and technological achievements to transfer to enterprises. This platform provides a channel for teachers, students and researchers to take project achievements and patented technologies to enter enterprises. Thus, universities can realize cooperation with enterprises in respect of scientific and technological achievements with intellectual property rights guaranteed, to reduce the risk of enterprises, and facilitate technology cooperation.

3.2 “Four Approaches” for pushing technological innovation elements of universities to gather

FAFU has promoted complementary advantages and mutual benefit with enterprises to realize common development through four pathways. Firstly, FAFU has sent scientific and technological personnel to provide intellectual support to enterprises. The university has employed experts and researchers of the university to act as experts for serving enterprises with technology, has established an enterprise liaison system, carried out the “Spring Action of the West Side of the Straits”, sent technology specials, expert service team, and technology service team, and appointed technology service staff as technical consultant at the front line of production of enterprises, to give face-to-face guidance on production technology of enterprises, offer training to technician of enterprises, assist enterprises in solving problems, and improve enterprises’ independent innovation ability. As to “technology specials”, cooperative agreement had been signed, more than 120 stations for technology promotion and cooperation in the long run had been built, technology specials participated in agriculture development and economic construction in rural areas, remarkable economic, social and ecological interests had been obtained, great contributions had been made to revitalizing local economy and promoting social progress, and the construction of national-level technology specials entrepreneurship industry chain and provincial-level technology specials entrepreneurship demonstration base had been strengthened. The technology specials tea industry entrepreneurship chain under the leadership of our university was rated as one of the first batch of national-level technology specials entrepreneurship industry chains in 2009. Secondly, FAFU offers professional education and technical training, and output talents for enterprises. The university has played its functions as a national science talent training base, software talent training base, and ministerial and provincial-level innovation platform to offer professional scientific research education and technical training for rural areas in western China and developing countries by means of concentrated training and site instruction in reliance upon its advantages of adult education and distance education according to the talent demands of enterprises. Thirdly, FAFU has established an open technology innovation platform jointly with enterprises, to provide technical support to enterprises. The university and enterprises have made full use of their resource advantages to jointly build technology research and development base, scientific research workstation, and achievement transformation demonstration base in reliance upon the platform and high-quality interdisciplinary talents of the university to solve key problems of enterprises in production development, and strive to make technological breakthrough and create a technology innovation system for enterprises. The modes of industry-university-research integration between university and enterprises and of serving local government had been adopted to push university to efficiently serve the society with quality guaranteed. Fourth, FAFU has created the Strait Business Incubation Center, to enhance industry-university-research cooperation. The university has established the Strait Business Incubation Center, learned the advanced achievements of the industry-university-intelligence
operation center of National Chung Hsing University, invited hundreds of experts and scholars from both mainland China and Taiwan to form a highly capable innovation research development tutorial expert team, integrated 36 ministerial and provincial-level key laboratories and engineering technology research centers of the university into an innovation and entrepreneurship service platform to push forward the transformation of technological achievements. Presently, a large number of local enterprises have settled in the Strait Business Incubation Center, and the center also has reached an agreement with the Department of Agriculture of Guangxi Zhuang Autonomous Region on providing technical and talent support in the fields of sugarcane, edible mushroom and tea industrialization. Through promoting university-government cooperation, making use of the achievements of “6.18” and pushing innovation elements to gather in enterprises via four ways, FAFU has made great achievements in the construction of new countryside and of the Economic Zone on the West Side of the Straits.

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References


