Research on Building Mechanism of Postgraduate Workstations in U/I Alliance

Jia-yin SONG* and An-ping WANG
Scientific Research Institution of Northeast Electric Power University, China
*Corresponding author

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Abstract. In view of the society’s urge of qualified personnel, The U/I Alliances link enterprises, universities and research institutes closely together as postgraduate workstations, using high quality resources of them, to train graduate students’ abilities of scientific researching and innovating. Through the analysis of the internal composition of the workstation system, external influencing factors and running mechanism of workstations, we explore the environment conditions and the specific process of the establishing of the stations and analyze in detail running mechanisms of graduate workstations. Finally, we depict motivation and forms of the evolving of stations and point out that the ultimate goal of building graduate workstations is to achieve mutual benefit and win-win of multi-agents. It may be useful for the innovation of graduate education in our country and the improvement of the quality of qualified personnel.

Introduction

Enterprises lack of innovative talents and advanced production technology, universities and research institutes lack scientific research funds for scientific research, the construction of graduate workstations has solved the problem of the shortage of enterprise innovation and the shortage of scientific research funds.

Joint training model as the highest level of graduate training, can enhance the enterprises, universities and research institutes of the contact and cooperation, accelerating the construction of internal innovation system of the U/I Alliance, promoting the transfer of knowledge elements and the realization of its value [1]. The postgraduate workstations of U/I Alliance promote enterprise scientific and technological innovation, enhancing the economic efficiency of enterprises, and ultimately achieve the multi-agency mutual benefit and win-win goal [2].

Summary of Domestic and Foreign Research on Postgraduates' Workstations

R. Rothwell and Rothberg, who first proposed the theory of the U/I Alliance. They found that enterprises, universities, research institutions to work together more and more efficient [3]. Santoro found that the purpose of the U/I Alliance is to complement resources and bring potential benefits to participants [4]. Nieto analyzed the manufacturing industry, believing that the higher the degree of collaboration between the workstations, the more the benefits of increased performance [5].

Early cooperation will be the quality of college students as the primary task of the workstation in U/I Alliance. However, with the continuous improvement of workstation construction, enterprises occupy the leading position of the workstation, improving the economic efficiency of enterprises has become the main goal of the operation of the workstation.

The Internal System of Postgraduate Workstations in U/I Alliance

Composition of Postgraduates' Workstations in U/I Alliance

Work station resident staff mainly consists of four parts: Business mentor, college tutor, research
institute experts, school graduate students. Enterprise mentor is selected from the enterprise technology backbone, enterprise mentors understand the direction of the development of enterprises and mode of operation, familiar with the development of new products and new technologies. College tutor is a graduate tutor, the main job is to teach graduate students' theoretical knowledge, explore the students' scientific research ideas. Research institutes have a large number of experts, they have a strong scientific research strength. The stationed graduate student is the most important part of the staff inside the workstation. To ensure the quality of inbound graduate students, workstations should implement rigorous selection mechanisms. Postgraduate students need to guide the station before the station recommended station.

The Organizational Structure of Postgraduates' Workstations in U/I Alliance

![Organizational Structure Diagram](image)

In order to ensure the effective operation of graduate workstations, it is necessary to set up a "Postgraduate Workstation Management Committee". The main functions of the postgraduate management committee are setting daily management systems for workstations, coordinating the cooperation between the parties, planning the research objectives and research areas. In order to refine the management of the workstations, the Committee should have multiple offices to manage the workstations, such as the Department of Integrated Management, the Admissions Department, the Science and Technology Innovation Department, the Course Construction Department, the Examination and Evaluation Department, the Logistics Department. Workstation Management Committee should meet regularly, with the functional departments to discuss science and technology innovation plan. Composition of internal organizational structure of graduate workstations, as indicated by figure 1.

The Composition of the Basic Management System in Workstations

Work station resident staff mainly consists of four parts: Business mentor, college tutor, research institute experts, school graduate students. Enterprise mentor is selected from the enterprise technology backbone, enterprise mentors understand the direction of the development of enterprises and mode of operation, familiar with the development of new products and new technologies. College tutor is a graduate tutor, the main job is to teach graduate students' theoretical knowledge, explore the students' scientific research ideas. Research institutes have a large number of experts, they have a strong scientific research strength. The stationed graduate student is the most important part of the staff inside the workstation. Postgraduate students need to guide the station before the station recommended station.

After the graduate student enters the workstation, entering the enterprise's innovative practice process, needing a process of adaptation. Enterprise tutors should help students to quickly understand
the corporate culture, understand the operation of the enterprise system. In addition, U/I Alliance should formulate rules and regulations, clearing the rights and obligations of colleges and universities, enterprises, research institutes and graduate students. Cooperating with strong business will shorten the production-run period and research tripartite run-in period and improving the efficiency of workstation construction.

Graduate application for entry. College tutor can recommend both academic and excellent students to learn into the workstation. Graduate students can study their own research and business development direction of the combination, carrying out innovative practice activities. Postgraduate attendance management. Graduate students need a comprehensive understanding of the workstations of the management methods and corporate culture, abide by the joint training time and attendance system strictly, as soon as possible into the workstations of the research. Attendance management can ensure that stationed graduate students on time to complete the research project. Postgraduate station process management diagram, as indicated by Fig. 2.

![Postgraduate station process management diagram.](image)

Workstations should innovate on the way courses are taught. Workstations teaching ways need to break the traditional model. The lessons are moved from the classroom to the production workshop, research laboratory. The teacher through the actual operation of the subject research process to show students, so that students can more intuitive observation of the entire process of scientific research and innovation and cultivate students interest in graduate station. Meanwhile, the curriculum system needs to be logically designed. The construction of the new workstations should take into account the particularity and flexibility of the joint training of graduate students, absorbing the experience of excellent workstation design at home and abroad, building a logistic curriculum system.

Supervisors should choose in the noble morality, a strong academic ability, a higher sense of innovation of the academic leaders in universities and technical backbone of enterprises. After the comprehensive selection of the U/I Alliance, to obtain the qualification as a graduate workstation instructor, becoming a full-time Tutors in the workstation. Supervisor is directly managed by the Workstation Management Committee, which developing the appropriate rules and regulations, the constraints of the mentor's behavior, to protect the mentor's rights.

**The External Influencing Factors of Postgraduates' Workstations in the U/I Alliance**

**Support for National Policy of Country**

In recent years, with the continuous upgrading of China's economic structure, enterprises continue to transition, all sectors of society have implemented innovation-driven development strategy, innovation and development has risen to the national level policy. At present, China has promulgated a number of preferential policies to support the U/I Alliance to work together to establish workstations. The state hopes to cultivate graduate students through workstation to explore the new impetus to the development of enterprise innovation and enhance the economic efficiency of
enterprises and the social influence of colleges and universities. In this regard, the state for the U/I Alliance workstation to develop a specific policy, and for the U/I Alliance within the collaborative innovation, for construction of the workstation provided the premise and protection.

Participate of Government and Community Departments

To promote the close cooperation between the multi-party and the main body, the construction of efficient operation of the graduate workstations, but also inseparable from the government departments and the community wide participation. The co-ordination of the government is very important to the construction of the joint training system. The government should actively participate in the construction of the workstations, formulate long-term development plans for the workstations, and create a favorable environment for its development and construction. The government departments at all levels pay more attention to the development of research and development alliance, the joint training system will be more perfect. Government finance departments and tax authorities to support the development of joint training system for graduate students also play an important role. The government should establish a corresponding incentive system, to led by the government, financial investment, relying on the leverage of financial funds to find the strategic fulcrum of scientific and technological innovation, to promote the transformation of scientific and technological achievement.

Evolution Mechanism of Postgraduates' Workstations

The Motivation of the Evolution of Workstations in U/I Alliance

In the initial stage of joint training of graduate students, universities, enterprises and scientific research institutions may only establish a graduate work station for the purpose of complementary or scientific resource sharing. With the further development of the work of building a station, the level of science and technology has been continuously improved. Enterprises, universities and research institutes on the joint training system awareness and goals are more and more consistent, within the Union will have an impetus to promote the workstations gradually from the primary mode of cooperation to a more advanced mode of evolution. And so, workstation construction should grasp the interests of the alliance of industry and academia, accelerate the workstations from the primary level to the advanced level of evolution, better for multi-party of the U/I Alliance to provide services, and ultimately achieve multi-objective and win-win goal.

The Concrete Manifestation of Workstation Evolution in U/I Alliance

It is an important indicator to evaluate the rationality of the postgraduates' workstations, and to establish the new talents training mode and improve the comprehensive quality of the graduate students. Before entering the workstation, graduate students have been learning theoretical knowledge in colleges and universities, not too many opportunities for scientific research and practice. So, the students are weak in the scientific research ability and practical ability. During the workstation, postgraduates can apply the theoretical knowledge of school learning to scientific research and practice to improve their practical ability and professional skills as soon as possible. Through the work and training during the station, graduate students will not only greatly improve the level of innovation and scientific research ability, but also to enhance their social adaptability. For the enterprise R&D personnel generally lower education, and the lack of innovative research personnel, the establishment of graduate workstations for the introduction of innovative talents and training to provide a new channel. Workstations mainly through three ways to expand high-quality talent: First, the station can be on the station of high-quality personnel resources for a reasonable deployment, to ensure that the unit belongs to the same circumstances, the university instructors and research institutes experts through the signing of the agreement, the introduction of scientific research service center for enterprise innovation services; Second, enterprise could improve the working capacity of company staff. Workstations need to regularly organize enterprise staff training,
re-learning and re-education of relevant business knowledge, so that employees fully understand the current technological trends. Third, enterprises can also rely on the platform of this university, recommended scientific research and innovation ability, the value of training staff to study part-time graduate students, after graduation for the company services.

**The Ultimate Goal of Workstation Evolution in U/I Alliance**

The joint training system for postgraduate students is an extension of higher education, Graduate workstations will be the main combination of U/I Alliance to strengthen the post-graduate and workstation contact and communication. For graduate students, during the station can not only carry out scientific research to help enterprises improve innovation and core competitiveness, but also experience the excellent corporate culture, to understand the business model. At the same time, graduate students also could facilitate enterprise management, can bring youth to the vitality of the enterprise. Workstations can provide enterprises with invention patents, improving the enterprise's innovation, to create more economic benefits for the enterprise. The ultimate goal of the evolution mechanism of graduate workstations is to realize the mutual benefit and win-win in U/I Alliance.

**Summary**

Through the analysis we can see that the graduate workstations are multi-faceted in order to adapt to the market development trend, integrate the advantages of resources, and ultimately achieve mutually beneficial and win-win products. The research and development of the U/I Alliance can not only improve the scientific research ability and innovation ability of the graduate students, but also can play the enterprise capital advantage and the production superiority. The U/I Alliance should strengthen the work of the workstation system to ensure the efficient operation of graduate workstations. In addition, the strong support of the government and the community is also an important guarantee for the efficient operation of the workstation. Graduate workstations are from the initial project cooperation model evolved to multi-agent collaborative innovation of the high-level cooperation model, and ultimately achieve multi-objective mutual benefit and win-win goal.

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