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2021 Pujiang Innovation Forum Bulletin II

Communicate with the Innovation Forces to Jointly Shape the Future of Career

Editor's Note: In 2021 Pujiang Innovation Forum –World Tech-transfer Manager Summit, with the theme of "Communicate with the Innovation Forces to Jointly Shape the Future of Career", well-known experts and scholars at home and abroad had in-depth discussions on the development and training of tech-transfer managers around the world. This bulletin is a summary based on the reports from the participating guests[1], and is intended for reference.

[1] Dean of College of Efficiency and Energy Management, Steinbeis University Berlin; CHEN Xiujuan, Deputy General Manager of Sinoipro IP Management and Technology Transfer Co., Ltd.; JIE Yucheng, Director of China (Yunnan) -Israel Innovation Center; DAI Ning, President of Institute of Applied Research on Intelligent Science & Technology, Jiangsu and Chinese Academy of Sciences; YAN Minghua, Co-founder of Indig China; CHEN Peng, CEO of Shanghai Kejiniu; and HUANG Junjie, Global Technology Innovation Think Tank (according to sequence of giving speech).

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Since the turn of the 21st century, global science and technology innovation has been unprecedentedly intensive and active. A new round of scientific and technological revolution and industrial transformation is reshaping the global innovation landscape and the structure of global economy. Against this backdrop, the development of world tech-transfer managers who undertake the important task of promoting the commercialization of scientific and technological achievements, and the professional technology transfer institutions composed of such managers, are spotlighted and much-anticipated. With "Communicate with the Innovation Forces to Jointly Shape the Future of Career" as the theme and the clue, the World Technology Managers Summit invited tech-transfer managers from professional technology transfer associations, technology transfer offices of colleges and universities, platforms for innovation incubation, etc. in the whole technology transfer chain from all over the world to have in-depth discussions on the progress and experience in the construction of the professional system for tech-transfer managers, and the development and cultivation of new tech-transfer managers. **The Participating experts agreed unanimously that as tech-transfer managers are important participants in the transfer and commercialization of global scientific and technological achievements, it is vital to establish the professional system for tech-transfer**

managers. In the open and innovative world, the development of tech-transfer managers in the world is of great significance to connect the chain of science and technology innovation and improve the ecosystem of scientific and technological services.

Ⅰ. Changing Paradigm of Science and Technology Innovation Brings New Opportunities for the Development of World Technology Transfer

Firstly, basic research is the source power of innovation and will have growing influence on the development of world technology transfer. In the opinion of **Irit Sagi, Deputy Director of Technology Transfer, Weizmann Institute of Science**, it is necessary to motivate innovation with good basic research. Basic research is a tool to make innovative infrastructure generate new knowledge on campus. Therefore, the integrative development of talents, environment and basic research can trigger paradigm transformation and eventually benefit all mankind. In early 2021, Weizmann Institute of Science established a new commercialization research unit called BINA (Bridge, Innovate, Nurture, Advance), for the guidance for and progress of the projects without registered intellectual property rights or clear industrial prospects in the early stage, aiming to involve the relevant, including scientists, staff, students, postdoctors and senior professors. To achieve this goal, educational and community construction programs, and even induction programs and online activities for alumni as well as friends and industrial

partners around the world will also be implemented. In the opinion of **Robert Emond, Science and Technology Counsellor, Canadian Embassy in China**, Canada is always focusing on the basic research conducted by industrial clusters, from the R&D stage to product commercialization. These industrial clusters include electronic, biotechnological, artificial intelligence and marine industrial clusters.

Secondly, carbon neutrality has become a new direction of global cooperation on science and technology innovation to tackle the global challenge of climate change. As pointed out by **Felix Moesner, Science Consul & CEO, Swissnex China, Science Consulate of Switzerland in China**, in the past decade, Switzerland remained a leading position in innovation, as it has to invest in people's intelligence to cope with the challenge of climate change due to insufficient natural resources. The promise to achieve carbon neutrality by 2050 requires more investment and further coordination. According to **Richard Cuntz, Consul of Science and Technology, Consulate General of Germany in Shanghai**, in Germany, 50% of the energy was generated from renewable resources last year; in the last quarter, 20% of the cars sold were new energy vehicles; and in the future energy structure, a large proportion of energy will be replaced with renewable energy. The hydrogen strategies of European countries, including the *National Hydrogen Strategy* of Germany, are comprehensive enough to cover all links in the supply chain, including production, application, and transportation. Germany wants to promote the trading system of "carbon credits", in which all

enterprises are provided with carbon credits, and encouraged to participate in carbon neutrality. Hydrogen energy now accounts for 2% in the energy structure, and will increase to 9% to 20% in the future. The most important goal is to cut costs while improving efficiency, as well as promoting innovation and technology transfer. We hope to enhance productivity and make hydrogen-based production meet the global demand through international cooperation. Only green production and internationalization can effectively promote the large-scale application of hydrogen energy on the planet; so, we need the participation of the whole world. As expressed by **Bertram Lohmueller, Director of Steinbeis Global Institute Tübingen, and Dean of College of Efficiency and Energy Management, Steinbeis University Berlin**, in this fast-changing world, digitalization is the key to technological development. We also need to deal with the issue about internationalization, which is related to the establishment of technology network in a region to serve local enterprises and people, as well as carbon emission reduction and sustainable development, with green leadership as its core challenge.

Ⅱ. Accelerate the Construction of the Professional System for Tech-Transfer Managers and Promote International Cooperation on Science and Technology Innovation

Firstly, new requirements have been put forward for the construction of the professional system for world tech-transfer

managers. As expressed by **Bertram Lohmueller, Director of Steinbeis Global Institute Tübingen, and Dean of College of Efficiency and Energy Management, Steinbeis University Berlin**, to successfully introduce a technology into the market, we shall comprehensively consider the cost variables, rules and regulations, data and process security and other codes we shall abide by, as well as the transportation and supply chain. In integrated management, tech-transfer managers lie in the middle, who shall be able to deal with technology transfer strategies, coordinate other people in the process (including staff in the organization, upstream and downstream partners, or participants of the whole process), process internal and external information, push technology into the market, and adapt to future innovation. According to **CHEN Xiujuan, Deputy General Manager of Sinoipro IP Management and Technology Transfer Co., Ltd.**, tech-transfer managers shall have knowledge and capabilities in four aspects: basic knowledge and skills, business knowledge and skills, legal knowledge and skills, and comprehensive application ability. Specifically, they shall have strong analytical capability, learning ability, carefulness, and sense of responsibility; profound scientific research and technical background; excellent English listening, speaking, reading and writing skills; proficiency in domestic and international patent laws, the ability to tackle industry, product and technology market competitions; the ability to manage product R&D, approval and marketing process, a good understanding of the specific situation of the target companies, the ability to evaluate patent and technology value; proficiency in domestic and

international contract laws; and excellent communication and negotiation skills.

Secondly, the training system of world tech-transfer managers tends to be globalized and cooperative. As pointed out by **Felix Moesner, Science Consul & CEO, Swissnex China, Science Consulate of Switzerland in China**, Switzerland has a solid foundation for education. According to World University Rankings 2021, the education system of Switzerland ranks second in the world. Switzerland has also invested a lot in vocational training, including the training for innovative and highly-motivated professionals, which is a good way to promote innovation. Switzerland is a very open country with a top-down structure and a competitive funding system, which will help China and Switzerland cooperate in educational research and innovation. Among them, there are three specific projects related to the start-ups in the technology transfer field, including the projects for venture capital leaders, biotechnology and laboratories for deep technology. In the opinion of **MA Juan, Chinese Representative of the Shanghai Office of Steinbeis Technology Transfer Company**, Steinbeins Technology Transfer Company is an all-round and comprehensive international platform for technology transfer, one of the four largest technology transfer organizations in the world. Through the resources of the German headquarters, it has helped incubate and establish more than 200 German science and technology enterprises in China. Meanwhile, it also positively cooperates with various Chinese ministries, commissions, local government scientific

research institutes and universities, and has implemented technology transfer and innovative talent development projects in many fields, all of which have achieved good results and are unanimously praised. According to **ZOU Shujun, Executive President of National Eastern Tech-Transfer Center**, in the future, National Eastern Tech-Transfer Center and Steinbeins will jointly promote the cultivation of tech-transfer managers, especially the cross-border cultivation of technical and trade talents, and offer short-term training for various types of tech-transfer managers with mutually recognized courses and credits. In the future, they will also cooperate to introduce some sophisticated technologies and experience of Germany and even Europe, including their technology transfer patterns, to the Yangtze River Delta in China for development. Meanwhile, the advanced technologies of China may also go abroad through this channel.

Thirdly, the cultivation system of tech-transfer managers tends to be diversified and multilayered. As pointed out by **Bertram Lohmueller, Director of Steinbeis Global Institute Tübingen, and Dean of College of Efficiency and Energy Management, Steinbeis University Berlin**, the roadmap of the achievement commercialization plan includes innovation process and strategy, long-term and short-term activities, technology introduction into the global market, the production process, business development and the service process, as well as the deep integration of these processes with digitalization. It also involves the flexibility and agility in face of complex changes, which shall be

combined with the financial strategy and interact with other management fields. The framework of the cultivation of technology transfer management personnel is comprised of the aforementioned. Technology transfer involves four key stakeholders, including the driver, the technology transfer expert, the market promoter and the process promoter. The combination of these stakeholders may provide good concept training for all technology transfer management personnel in six aspects: challenges in technology transfer, the transformation of ideas into innovations, different technology transfer patterns, strategic business development, concept of the development of self-owned business, and cross-cultural communication and exchanges in technology transfer. In the opinion of **ZHAO Pu, General Manager of Green Support (Shanghai) Co., Ltd.**, in order to establish a diversified and multilayered cultivation system for tech-transfer managers, we shall extend to the frontiers, establish relevant professional degrees in universities to cultivate talents from the university period, and establish talent teams. For example, relevant majors are opened in Tongji University MBA, which is worth promoting. In addition, we shall combine theory learning and practice training during the cultivation, and pay more attention to practical training. There are no training systems at present; so, it is of more importance to constantly learn from practice, conduct optimization, and enrich the training contents.

Summarized by Xue Ya