

Technology Transfer Unit for Commercialization of Intellectual Property

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Abstract. Saudi Arabia adopted “Vision 2030” as a roadmap for economic growth and national development. Faculty of Computing & Information Technology (FCIT) to comply with the national vision will establish a new unit for Technology Transfer and Commercialization of Intellectual Property, specializing in technology transfer. In general, universities have two main functions. One is to educate students and pass on knowledge; the other is to engage in research and innovation. In universities, some research is purely scientific research conducted to promote scientific development and human progress, and these studies/researches may never have practical commercial value. Commercial entities will not pay attention to this research project due to the unpredictability of commercial value. But at the same time, the research of many universities is of great commercial value, and universities can obtain huge benefits from it. These benefits can be used to support research funding and enhance reputation in the future. As a result, the existing potential is not being used effectively enough, and although innovative activity and indicators of technological development tend to gradual growth, but still remain low. The FCIT unit for technology transfer and commercialization of intellectual property will be a tool of innovative infrastructure, which allows for the efficient distribution of technological information and the search for partners for implementing technological innovative projects. There is no term “commercialization” in the legislation, it is replaced by the expression “involvement of intellectual property in economic turnover” which fits our national vision. However, commercialization is an essential element of the innovation process. The commercialization of technological inventions in King Abdul Aziz University (KAU) faculties will be adopted in “three-step method. First, to identify which inventions may bring huge business benefits. Second, to strategize and combine intellectual property rights that are protected for commercialized inventions, to maximize their potential commercial value. The third step is to create a mechanism that is conducive to increasing the commercialization opportunities of the invention, such as the establishment of a startup company model through asset stripping and splitting. As an international best practice for the commercialization, countries in the development and commercial use of the new technologies. According to Swisscom statistics, over 100 startups in the field of AI, IoT, language engineering and data science work in the country, large research projects with millions of investments. Startups in the field of artificial intelligence originate in Switzerland both within and outside universities a whole, the level of implementation of business projects are very high, and most scientific ideas are brought to practical implementation, and commercialization entities in the universities. Similar to the international best practice, the paper considered as a proposal to establish FCIT unit for the purpose of technology transfer in KAU that will operate, to help finding partners for the development and implementation of new high-tech technologies, promotes the commercialization of high-tech technologies created at KAU different faculties, and their transfer to enterprises. The unit for Technology Transfer includes: 1. Section of marketing and commercialization of intellectual property, 2. Section of Patent licensing, 3. Section of information and exhibition projects, 4. Innovative activity among different colleges in KAU.

Keywords: Technology Transfer, Foreign Experience, KAU University, Scientific Organizations, Commercialization, Intellectual property.

1. Introduction

The paper aligns with the conference topic no 5 “research and innovation” specifically the topic titled “Challenges and obstacles of research and how to overcome them”^[1].

One of the most important tools for the innovative development of the economy, and especially its high-tech industries, is technology transfer and commercialization in the scientific educational sphere. Today, this process is carried out spontaneously, and not efficient enough and does not provide a massive influx of research and development results into the real sector of the economy. The paper analyzes the advanced foreign experience in technology transfer in the scientific and educational sphere and the main trends of its development. The results can be used to create an effective technology transfer unit in KAU of Faculty of Computing and Information Technology (FCIT).

The need to study and adapt modern foreign experience in technology transfer is one of the urgent tasks of the development of the country's scientific and technological complex. At present, technology transfer and commercialization task in most of the Arab countries is carried out spontaneously, and is not efficient enough and does not provide a massive influx of research and development results into the real sector of the economy, for the widespread dissemination of new manufacturing technologies. Summing up, the paper will distinguish the following main modern trends in the development of technology transfer and commercialization and the need for FCIT independent/integrated unit in the scientific educational sphere^[2]:

1. Technology transfer and commercialization have stood out and is developing as an independent

professional field, including not only intellectual property management, but also risks and investments; market research, advertising, etc.

2. In industrialized countries (Germany, Great Britain, USA, Japan, etc.) a new market sector is being created, regulated and guided by the Technology Transfer and Commercialization departments in most of the universities.
3. Established in 2008 as a result of the integration of pre-existing networks of Euro-Info Centers (EIC) and innovative relay centers (technology transfer centers - IRC).
4. There is increasing pressure on scientific and research organizations from government bodies that require intensified efforts to transfer technology and Commercialization.
5. The integration of technology transfer centers, both autonomous and those created on the basis of scientific and educational organizations, technology parks and technology cities, into regional and national networks.
6. There is an internationalization of national technology transfer networks and transnational transfer networks are being formed.

Foreign universities include departments responsible for the interaction of the university and business^[3]. These include technology transfer and commercialization entity for advanced technologies and commercialization of the results of scientific and technical activities (Switzerland, Sweden, Great Britain, Germany, the USA, China, Japan, etc.), which assist in the commercialization of university developments. In particular, in China, every

major research university has in its structure a department engaged in technology transfer and commercialization and funded from a share of the total funds allocated to the university by Government^[4-6].

2. The Importance of the Research

King Abdul Aziz University launched its own site of the Center for Knowledge Economy and Technology Transfer to give valued and unlimited support for innovation and the transfer of technology localization.

That event made our research to establish an independent/integrated unit for patents commercialization more important and highly needed.

In modern conditions of the development of scientific and technological progress and geopolitical instability, high technologies, scientific and technological developments and high technology products, the intellectual and educational potential of personnel, which are all the "innovative ability of the nation", are becoming important levers of economic growth independence.

International experience has shown that a key role in the transformation to an innovative Knowledge Economy based on skills, experience and knowledge has always belonged to higher education organizations. The formation of the international scientific, educational and business space requires the creation of a common market for services, including educational services. An innovative approach to the coordination of the market for educational services should be aimed at restoring the mobile balance of supply and demand,

The innovation process is the process of creating and transforming a scientific idea into a product based on commercialization. Therefore, the innovative activity of scientific organizations and units of higher education

requires a high degree of mobilization of financial, material, information and human resources for the commercial use of the results of scientific research and development and the effective promotion of innovative products in the domestic and international innovative Knowledge Economy

The most important condition for the development of economic systems in the 21st century is the same important for establishing an independent/ integrated unit for patent technology commercialization. It is combination of driving forces acting in the form of education, science, technology, personnel competencies, innovations that have formed a knowledge-based economy, or a knowledge economy^[7,8]. Commercialization is a methodology used to identify a type of economy in which knowledge becomes a source of sustainable growth, play a crucial competitive role, thereby changing the entire economic architectonics of the world that is the paper objective.

3. Research Objectives and Proposed Design

The objectives of the work are to analyze the existing mechanisms of commercialization, operating both in Saudi and abroad, assessing the applicability in conditions of world-tested and proven forms and methods of stimulating innovative development, as well as the development of practical recommendations on improving mechanisms for state regulation of the commercialization of research and development results. Then establish a framework of FCIT Unit for Technology Transfer and Commercialization.

The study is based on official statistics, operating in the scientific and technological field, and the results of our own pilot study regarding assessment of factors, working conditions and development strategies of dynamically growing small innovative enterprises. The study goes through different

worldwide universities engaged in the transfer and commercialization of technologies that that going to be a part of the KAU technology transfer activities and functioning on the national level, then as a subject of the

processes of organizing the functioning and development of the UTTC, (academic and business conjunction. Figure 1 illustrates the standard world class patent reward and objectives.

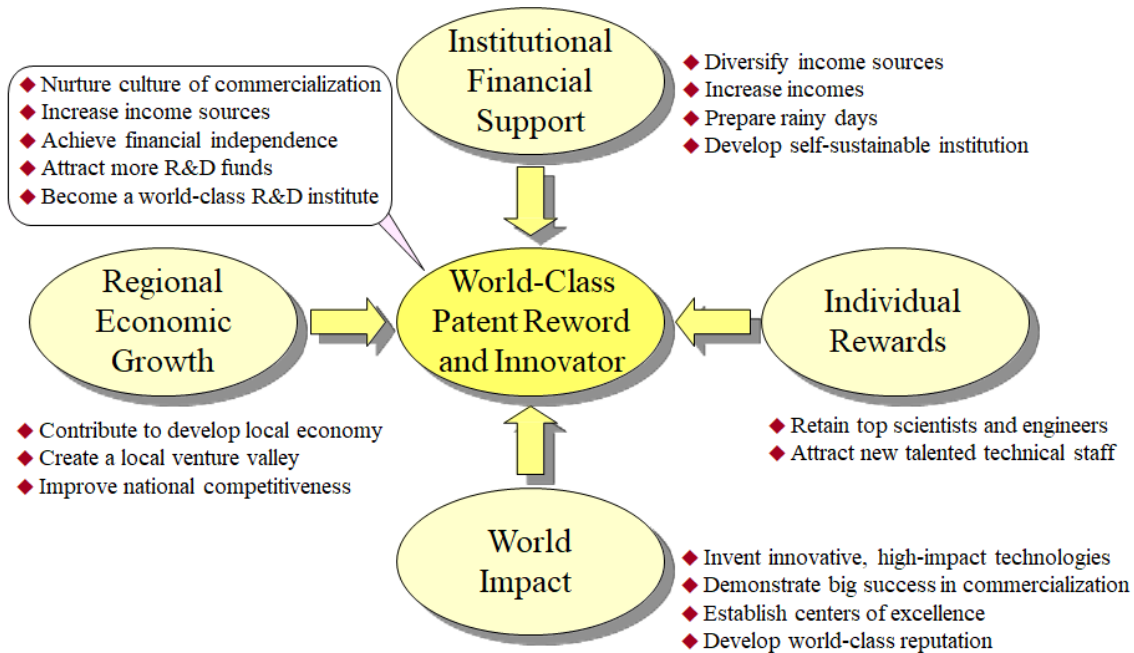


Fig. 1. Levels Patent Reward^[9] by SRI International.

3.1 Technology Transfer Reference Countries

In 1989, the “National Competitiveness Act” opened the green light for the creation in the USA of a modern technology transfer infrastructure as an independent / integrated in the scientific and educational sphere^[10].

Following the United States, other industrialized countries followed this path. In particular, the Basic Law on Science and Technology, adopted in 1995 in Japan^[11], provided for a set of measures aimed at strengthening cooperation in the field of innovative developments between scientific institutions and industrial companies. In 1998, Japan adopted the Law on Promoting Technology Transfer between Universities and Industry (Law of Promoting University-Industry Technology Transfer), similar to the

American Bayh Dole Act^[12]. In 2004 Japanese law granted all national universities independent legal status so that universities could participate in initiatives related to the establishment of technology transfer independent/integrated departments^[13].

Foreign worldwide universities include independent / integrated departments responsible for the interaction of the university and business. These include technology transfer and commercialization activities of advanced technologies of the results of scientific and technical activities, (Switzerland, Sweden, Great Britain, Germany, the USA, China, Japan, etc.)^[14], which assist in the commercialization of university developments. In particular, in China, every major research university has in

its structure a department engaged in technology transfer and commercialization. In terms of the volume and content of the functions performed, university technology transfer departments are divided into two main types: The first type is “consultant-administrator” or “science store” (the science store includes from 5 to 30 years National Key Basic Research and Development Plan aims to solve major scientific/society/ industry problems in national strategic needs, as well as scientific frontier issues that will play an important role in human understanding of the future jobs). Such a section acts as an official contact point for the potential partners and customers of scientific research, and also provides various kinds of consulting and reference services to university employees. Examples include the Office of Technology Transfer of the University of Augsburg^[15] (Transfer stelle der Universität Augsburg, Germany), the Science Store of the University of Twente (The Science Shop at the University of Twente, Netherlands)^[16]. Most work technologies related to the transfer - patenting, licensing, and examination - are given by such section for outsourcing.

The second type of university technology transfer department is “entrepreneur”. Unlike the first, such a department acts as a coordinator and an active participant in all stages of technology transfer, from the initial assessment of the potential value of inventions to the organization of interaction with industrial enterprises at the stage of implementation and operation of technologies.

Oregon State University's Academic Department^[17], provides a wide range of services, including the assessment of inventions against the national vision and the society needs, patent protection, marketing and licensing, prototyping and etc. In some cases,

the structure providing technology transfer includes several elements.

In addition to the technology transfer and commercialization structures established at worldwide universities and higher education research organizations, special companies are being created in a number of countries – technology agent or brokers that act as intermediaries between sellers and buyers of new technological developments. Their founders are both authorities and management (regional and municipal), and private companies^[18].

In the UK, the largest structures of this kind are the British Technology Group (BTG) and the Faraday Community Institution^[19] whose main area of activity is to facilitate the transfer of promising new ideas and developments from universities, polytechnics and various public research universities to industry through license sales. The functions of technological intermediaries between laboratories and companies are also performed by more than 190 transfer agencies worldwide under full control of the universities.

3.2 Local Situation of Patent Commercialization

According to (WIPO) “World Intellectual Property Organization”^[20]. According to the yearly report of the world intellectual property of WIPO 2018^[21] as illustrated in Fig. 2 (shows the educational sector revenue).

The WIPO report 2018, explain the educational sector revenue including the patent commercialization income, the diagram shows the level of our local market, which is .6 USD million, (i.e. less than one million).

The main advantage of patent-based indicators is that they are based on internationally comparable data available worldwide. The usefulness of patents,

however, varies across sectors, depending on whether other informal strategies are possible or not in order to guard against imitation (e.g., accumulated advance on competing companies or secrecy). Certain areas (e.g. application software) are therefore insufficiently covered by these indicators. The report is mainly indicate the full project commercialization given by different local universities that would include a full project cycle to stimulate the implementation of high-quality, country-specific research and commercialization of technologies. The project of patent commercialization consists of 5 components:

1. Developing a knowledge base for innovation, advisable to have a (science store).
2. Innovative consortia, academic and professional stockholders approved.
3. Technology consolidation and commercialization practical cycle.
4. Coordinating and strengthening of the local national innovation system.
5. Supporting the implementation of rewardable project.

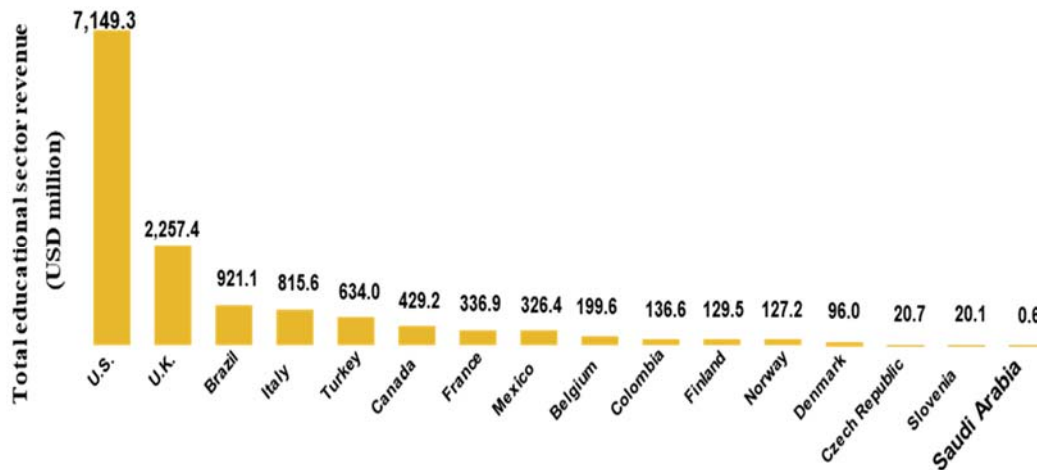


Fig. 2. Educational sector revenue (USD million), 2018.

4. FCIT Technology Transfer Unit (UTTC)

According to the Strategy of Innovative Development of the Saudi Vision 2030, the continuity of the innovation cycle in the KAU university is supposed to be ensured through the use of innovation responsible entity in the university, the most important element of which are the Unit for the Technology Transfer and Commercialization (UTTC), it will be the vehicles for innovation to the Saudi market. The paper in determining the model and strategy for the creation and development of these structures, it is necessary to take into

account the needs of the number of criteria on which the choice among different options. For this, the paper as a preliminarily study for the conceptual foundations of the UTTC, including justification of the need to create an entity, its goals and objectives, characteristics of consumers (market focus), directions and resource support of the department, criteria for evaluating its effectiveness, etc.

1) Tentatively, UTC strategy will be as follows:

- Strategic Direction.

- Development of recommendations for KAU in order to conduct and implement a effective Innovation commercialization practice.
- Supporting associated all KAU faculties patents for commercialization of scientific and technical results, with the goal of contributing to real income from research results.
- Mission, Vision and Values need a consortium and workshop to decide based on the strategic direction.

2) UTTC Strategic Objectives

The achievement of strategic goals will be carried out by solving the following tasks:

- Expansion of scientific research, transfer of advanced knowledge and technologies in the most priority areas;
- Modernization of the research topic process by introducing unique the real demand on the basis of the scientific results with the participation of employers, leading domestic and foreign professors and scientists;
- Development of interdisciplinary researches and the formation of a technology environment for the purpose of transferring missing competencies in accordance with generally accepted standards in the world;
- Expansion of international cooperation with world leading technology transfer universities and research centers within the framework of academic mobility, research and innovation projects.

5. Establish FCIT UTTC for KAU

The next subsections are describing the proposed UTTC tasks at the FCIT (Fig. 3).

5.1 Idea / Concept

UTTC going to be an important tool for improving the efficiency of the innovation process. Using the concept of UTTC and modern methods of innovative design that allow:

- Reduce the time and cost of innovative design;
- Increase the focus of investment projects on a specific economic result;
- Reduce the total investment for the implementation of innovations;
- Reduce the level of innovative and investment risks of projects.

UTTC concept confirms that business enters a new stage of innovation, when the sources of innovative potential of the company are located outside it. Practice has shown that UTTC cost about 25 times cheaper than closed innovation.

The transition to the philosophy and practice of UTTC changes and significantly expands the main approaches to business modeling of the innovation process, which with the same degree of probability can be very successful.

UTTC will work in two main driving forces. First, the best ideas are not necessarily generated by the firm's own employees. Since the owner of the company can hire people who feel and know the market very well and who help integrate external know-how into internal R&D and commercialization processes. Secondly, today in R&D and company research, they should focus on what they are doing really well and outsource what they cannot or should not do themselves.

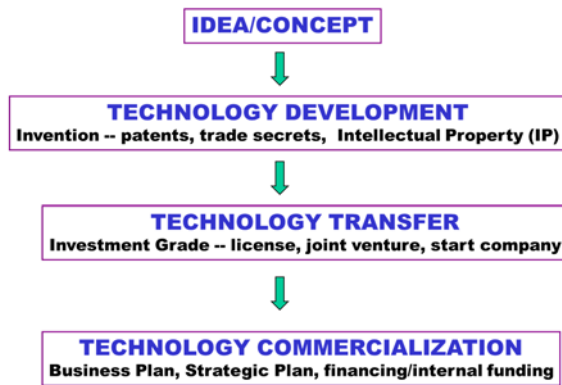


Fig. 3. FCIT UTTC Tasks.

5.2 Technology Development

The development of scientific and technological progress leads to a rethinking of the place and the role of the results of intellectual activity in the country's economy. In modern conditions, economic growth is identified exclusively with scientific and technological progress and the intellectualization of the main factors of production. Scientific and technical activities – aims to a tradition, application of new knowledge to solve technological, engineer-economic, social, humanitarian and other problems ensuring the functioning of science, technology and production as a single system.

UTCC will work to set a base and to confirm that the transfer of intellectual property rights is not provided separately, but together with other services or rights, which together allow achieving a monopoly on the production of a certain new product or the use of new t.

Basically, the need for assessing intellectual property rights arises in business. The value of an intellectual property object is based on its ability to generate income for its owner. If an object has this ability, then it also has a value that can be estimated.

Depending on the current use of the IP object and its potential, one of the UTTC main task will include the following assessment methods that can be applied^[22]:

- If the intellectual property is already used for commercial purposes, then its assessment will be based on real data on its commercial effectiveness. Efficiency indicators may include, for example, revenue from sales of goods (services) produced using the valued IP object, or cost savings in the production of goods (services) due to the use of the IP object.
- If the intellectual property is not yet used for commercial purposes, but has a reasonable potential for commercial use, then its assessment will be based on projected indicators.
- If the intellectual property is not used for commercial purposes and does not have the potential for commercial use in the foreseeable future, then its assessment is carried out by costly methods, that is, it is determined by the amount of expenses for its creation.

5.3 Technology Transfer

Technology transfer on an academic / commercial basis is carried out in the following basic forms:

- Patent agreements - a trade transaction in which the patent holder assigns his rights to use the invention to the buyer of the patent;
- Licensing agreements - a trade transaction in which the owner of intangible assets provides the other party with permission to use intellectual property rights within certain limits;
- Know-how.

The provision of technical experience and production secrets, including technological, economic, administrative, financial information, the use of which provides certain advantages. The subject of sale are non-patented inventions of commercial value;

- Engineering

The provision of technological knowledge necessary for the acquisition, installation and use of purchased or rented machinery and equipment. This includes a wide range of activities for the preparation of a feasibility study for projects, the implementation of consultations, supervision, design, testing, warranty and post-warranty services.

Non-profit technology transfer activities include exhibitions, scientific conferences, symposiums, publications exchange, etc.

5.4 Technology Commercialization

The technology commercialization has intensified significantly as part of the Faculty of Computing and Information Technology, King Abdul Aziz University in the Field of Natural Sciences in Higher Education, Basic Research. One of UTTC aims to develop a commercialized researches by creating highly professional research and educational Unit (UTTC).

UTTC tasks of technology commercialization unit include:

- Selection and evaluation of university developments with commercial potential;
- Patent and marketing research;
- Protection of various types of intellectual property and know-how;

- Adapt and prepare the license and agreements,
- Assessment and measure the contribution of intellectual.
- Management by established firms to commercialize research and development results.

5.5 UTTC Forward to the Future Big Data

Big data does not yet have an exact definition, but according to the tradition that has developed over the past few years, they include information that meets three criteria:

- It is very, very much;
- It is not just a lot, but it is growing like an avalanche, and this must be processed on the go;
- it cannot be processed by traditional methods, because it is poorly structured (random objects, media objects, etc.).

To work with "big data" and get successfully doing this (almost half of their business consists of processing Big Data for the oil industry, etc.), as well as other search engines and social networks.

5.6 Artificial Intelligence

This refers to complex software systems that not only know how to act on a program laid down by a person, but also effectively learn, and can also perform actions that were not laid down by the programmer. In this area, thousands of companies operate around the world. For example, intelligent (DSS) decision support systems for protecting the patent and researches that would include Deep machine learning algorithms, IoT and language engineering.

5.7 Distributed Registry Systems, or Block Chain

The idea of block chain technology is quite simple - it is a huge public database that operates without a centralized management. In the case of Bitcoin, for example, the so-called miners are involved in the verification of transactions - participants in the system with powerful computers that confirm the authenticity of the actions performed and then form blocks from transaction records. In the hands of these participants is a distributed database consisting of a "chain of blocks". The distributed nature of the database based on the blockchain allows you to control the reliability of transactions without the supervision of any financial regulators.

5.8 Quantum Technologies

The technology is based on the manipulation of complex quantum systems at the level of their individual components, and not just on quantum physics. So, according to this definition, a transistor is not a quantum technology, because although it is based on quantum physics, it does not control individual electrons, and quantum technologies are talking about controlled quantum particles. Examples are quantum sensors (colossal sensitivity and colossal quantum resolution), a quantum computer, ultra-precise chronometers and geo-positioning, quantum encryption (cryptography). The UTTC will be engaged in the creation of a quantum communications infrastructure that provides absolutely secure communications.

5.9 New and Portable Energy Sources

First of all, we are talking about technologies for the efficient storage and use of energy. The American company Tesla Energy produces batteries the size of a small cabinet. They can be charged at night at a cheap rate, and then the accumulated energy all day to power the equipment throughout the house. Battery production requires lithium. According to the ASI representative, scientists

are sure that its reserves will not be enough to install such a Tesla battery for each person. Therefore, one of the tasks of researchers is the search for new energy-saving materials.

5.10 New Manufacturing Technologies

These include additive technologies, digital modeling, and new materials. The advantage of additive manufacturing is the addition or layering of the material in the manufacture of complex parts, which is several times more economical than sawing or cutting. An example of additive technology is 3D printing. For additive technologies to work, you need to create an electronic model of the product. Using digital modeling and design technologies, they not only draw a three-dimensional model of the product, but also calculate what material will be required for its manufacture, what loads it will withstand, up to the choice of a supplier. Ideally, a computer should do the work of a design bureau.

5.11 Sensorics and Components of Robotics

Sensors surround us everywhere: in phones, microphones, magnetic ticket readers in the subway. Robots require sensors: anthropomorphic - for stability, industrial - to understand where the part is, where to get it, where to transfer it. In some countries, industrial robots are produced for military purposes.

5.12 Wireless Technologies

5G technology is now a priority. The idea of 5G is to allocate millimeter frequencies above 24 GHz for the needs of broadband mobile access, which will allow achieving data transfer speeds of more than 10 Gbps, that is, more than 10 times faster than connecting via fiber-optic cable. The UTTC is going taking steps to strengthen its influence in the area of 5G development.

5.13 Technologies for Managing Biological Objects

The technology is based on genetics and synthetic biology, which combine the technology of bioengineering, gene management, combining biological elements into new formations. Genetics is the science of human heredity and hereditary variability. Technologies allow reading and decoding a gene based on analyzes and complex programs. So, for example, today you can find out which foods a person has poorly absorbed or what the likelihood of cancer is.

5.14 Neuro Technologies

Neuro technology is a combination of technologies created on the basis of the principles of the functioning of the nervous system and contributing to an increase in the duration and quality of life. Advanced developments in neuro technologies are capable of increasing the productivity of human-machine systems and the productivity of mental and thought processes. The predecessor market is the market for wearable devices that transmit information over the Internet. New technologies will be developed based on the results of an intensive study of the human brain and nervous system.

6. Tentative Structure of UTTC

The structure of UCCT will be created with the aim of developing the innovative infrastructure of Faculty of Computer and Information Technology, KAU, aimed at increasing the efficiency of the commercialization of the results of scientific and technical activities.

Innovation management includes the following section/department as follows:

6.1 Intellectual Property Department

It is engaged in the identification, legal protection, accounting and introduction into civil circulation of the results of intellectual activity of KAU provided for by the Civil Code of the entities and the laws of the

Kingdom of Saudi Arabia. As part of the development of projects, the department conducts patent information research, identifying existing analogues of scientific and technological developments.

6.2 R&D Results Commercialization Department

It is engaged in the identification of competitive and commercially significant results of "patent and research store" intellectual activity, provides consulting services in the field of commercialization of intellectual property and scientific and technical products of UTTC, develop cooperation with industrial partners.

6.3 Scientific Engineering Center

It works on the principle of a single window, where the issues of project development are solved - from picking a temporary team for the task, selecting the necessary contractors for a comprehensive solution to the customer's problem (starting from the choice of technology and design and ending with the delivery of standard or specially designed equipment) to a feasibility study.

6.4 Innovative and Technological Business Incubator

To measures all tasks and to form the business teams and implement training programs aimed at enhancing the competencies of both existing business teams and individual entrepreneurs. The business incubator works with well-known local national and foreign business consultants and trainers and runs acceleration programs of an international level. A separate task of the business incubator is the creation of small innovative companies and their support when entering the local and international markets, working with investors and reducing the "mortality" of small businesses in the early stages of development

7. Conclusion

It is necessary to create a new market sector, regulated and guided by the Technology Transfer System (CTT) with state support, taking into account the practice of building such systems in developed countries (Germany, Great Britain, USA, Japan). Formation of CTT involves the creation in the public administration system of innovative development of the body responsible for technology transfer; the active use of the program-targeted method of technology transfer management, in particular the development of a regional program to create technology transfer centers at leading technical universities; the creation of new organizations (or “organizational structures” - such as networks and partnerships) to pool the resources and experience of existing organizations in order to transfer technology; the introduction of effective tools and mechanisms.

For scientific research conducted at national research universities, it is advisable not to remain innovative “raw materials”, but to turn into an innovative product, funds and entrepreneurial centers must be created within the framework of UTTC that will provide technology transfer. This research study has explained the basic elements and principles of the work of such unit.

Recommendations

1. Based on the research study, such UTTC Unit of Technology Transfer and Commercialization should be opened on the basis of universities strategy, to support different faculties and domains in the KAU, for example, on the basis faculty of Agriculture, the UTTC will be dedicated for the transfer and commercialize of agricultural technologies, the same for all scientific faculties. Through most of the

fundamental researches will find application in the production of goods and the provision of services.

2. The university always under consideration, in a sense, a non-profit transfer of innovations that is already being carried out, so UTTC would be able to materialize the efforts given by the KAU in a systematic commercial manner.
3. The research study highlighted the stages of the commercialization process; pointed to the problematic nature of the development of domestic or national market for scientific products; UTTC will give the chance to change the foreign experience into a nationalized (Saudization) of scientific developments team; caring of the commercialization process and management strategy of scientific developments of KAU.

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وحدة نقل التكنولوجيا لتسويق الملكية الفكرية

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المستخلص. تبعا لـ "رؤية 2030" كخارطة طريق للنمو الاقتصادي والتنمية، ولتحقيق تلك الرؤية ستقوم كلية الحاسبات وتقنية المعلومات بإنشاء وحدة جديدة لنقل التكنولوجيا وتسويق الملكية الفكرية. تعتمد الجامعات في تحقيق رسالتها على وظيفتين رئيسيتين هما: الأولى تعليم الطلاب ونقل المعرفة؛ والأخرى الانخراط في البحث والابتكار. وقد يكون بعض الأبحاث لتعزيز موقف الباحث من حيث الترقى، وليس لهذه الدراسات / الأبحاث قيمة تجارية عملية أبداً، كما أن الكيانات التجارية لا تعطى أهمية لمثل تلك الأبحاث لعدم القدرة على التنبؤ بالقيمة التجارية. ولكن في الوقت نفسه، فإن البحث في العديد من الجامعات له قيمة تجارية كبيرة، ويمكن للجامعات الحصول على فوائد كبيرة منه. يمكن استخدام هذه الفوائد لدعم تمويل البحوث وتعزيز السمعة في المستقبل. ونتيجة لذلك، لا يتم استخدام الإمكانيات الحالية للبحث العلمي بكفاءة كافية، وعلى الرغم من أن النشاط الابتكاري ومؤشرات التطور التكنولوجي تميل إلى النمو التدريجي، لكنها لا تزال منخفضة لبعض الجامعات والدول. ستكون وحدة نقل التكنولوجيا وتسويق الملكية الفكرية أداة للبنية التحتية المبتكرة، والتي تسمح بالتوزيع الفعال للمعلومات التكنولوجية والبحث عن شركاء لتنفيذ المشاريع التكنولوجية المبتكرة. إن التسويق عنصر أساسي في عملية الابتكار. سيتم تبني الابتكارات والاختراعات البحثية التكنولوجية في كليات جامعة الملك عبد العزيز في "الخطوات الثلاث". أولاً، تحديد الابتكارات البحثية والاختراعات التي قد تجلب فوائد تجارية ضخمة. ثانياً، وضع ودمج حقوق الملكية الفكرية المحمية للاختراعات التجارية لزيادة قيمتها التجارية المحتملة. الخطوة الثالثة هي إنشاء آلية مواتية لزيادة فرص تسويق الاختراع، مثل إنشاء نموذج شركة ناشئة من خلال تجريد الأصول وتقسيمها. بناء على أفضل الممارسات الدولية، تقدم الورقة مقترحاً لإنشاء وحدة نقل وتسويق التكنولوجيا في جامعة الملك عبد العزيز والتي ستعمل للمساعدة في العثور على شركاء لتطوير وتنفيذ تقنيات جديدة عالية التقنية، تعزز تسويق تقنيات التكنولوجيا التي تم إنشاؤها في كليات الجامعة المختلفة، ونقلها إلى الشركات. تضم وحدة نقل التكنولوجيا: 1. قسم تسويق الملكية الفكرية، 2. قسم ترخيص براءات الاختراع، 3. قسم المعلومات، 4. نشاط مبتكر للمشاركة البحثية بين الكليات المختلفة بجامعة الملك عبد العزيز.

الكلمات المفتاحية: نقل التكنولوجيا، الخبرة الأجنبية، جامعة الملك عبد الله، المنظمات العلمية، التسويق التجاري، الملكية الفكرية.