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THE NEED FOR ESTABLISHING INNOVATION AND INVENTION SUPPORT
STRUCTURES OR SERVICES IN DEVELOPING COUNTRIES

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INTRODUCTION

At the entry of the new millennium, the worldwide economic development, the creation of employment, the economic growth and the reinforcement of the industrial network could not be realized if innovation at all levels are neglected.

Innovation means at a government level, adequate policies notably to attract foreign investment, to create an innovation culture, to facilitate the integration of new technologies and to support the innovative small and medium-sized enterprises (SMEs) and creators and produce market innovations.

The strength of a country, notably for developing countries but notwithstanding the industrialized ones, strongly depends on their ability to integrate and generate innovations. In fact, innovation is one of the key factors of the creation of new industries and the revitalization of existing ones.

A recent study shows that the world is moving rapidly and found that 20 % of the actual international trade relies on new patents and predict that within the next 10 years this figure will increase to 50 %.

In a global economy, the competitiveness of industries can only rely on innovation to survive, and these innovations strongly rely on inventions in return.

It is not only large and multinational industries or the results of different national or international research and development programs that produce innovation or innovative products; SMEs and private research activities are an important part of it. In fact, the researchers and inventors working at such institutions are the main resources to generate economic growth.

With the increasing complexity of market relations in the globalization of international trade and commerce, support structures and services to facilitate the transfer of technology or knowledge from creators to industry become essential, to contribute substantially to economic development.

As we will discuss later on this Seminar, the journey from an idea or R&D results, to a marketable product or innovation is tricky, long and costly. Unfortunately, in most cases, inventions and innovations are considered high-risk investment and as such do not obtain financial support easily.

Consequently, funding necessary to develop innovation or inventions into marketable products is rare and even if this is a universal phenomenon, developing countries are more concerned with it.

CONDITIONS FOR ESTABLISHING INNOVATION AND INVENTION SUPPORT STRUCTURES OR SERVICES IN A GLOBAL APPROACH

Most of the studies in management of innovation suggest that an innovation system is characterized by environmental systems, which are the global and the close environments. These environments include essential elements that influence the ability to encourage

innovation. The *global environmental factors*, which generate a favorable environment for inventions and innovation, are:

- the state of science and technology;
- the legislative, legal, fiscal and financial environment;
- the scientific and entrepreneurial culture;
- human resources and their level of knowledge and education.

These factors could be mostly influenced by national policies. Consequently, the success for establishing a support structure facilitating the transfer of know-how, knowledge and technologies from the creators of such new technologies to industries and the society has to be considered as a governmental priority.

The *close environment* factors are characterized by the relationship between universities, financial institutions, governmental offices and industry networks among others. It is where interactions between players must be very close.

Facilitating the networking between these players and the creators is the most significant way to promote innovation and needs to be encouraged by national policies.

The *necessary interactions at both levels of the environment* are fundamental. And practically, even if you create efficient innovation and invention structures capable to valorize high technology or R&D results into marketable products or innovation, this does not guarantee success if the global environment cannot induce close environmental components that it can deal with.

In other words, national innovation support structures and services programs have to be considered as one entity.

We just described the environmental factors that we need to consider when thinking about the implementation of innovation structures and strategies. The innovation support structures and services main objective will be to increase the capacity of the society to generate inventions and innovations with the transfer of technology between the players, nationally and internationally.

WHAT IS TECHNOLOGY TRANSFER?

The US National Academy of Engineering and the German Fraunhofer Institute for System and Innovation Research both suggest, *that it would be misleading to consider the transfer of intellectual property rights as the essence of technology transfer.*

Signing of license agreements, payment of royalties, and the transfer of intellectual property are among the few elements of technology transfer. But, unpatented know-how, ideas, and suggestions often constitute information of considerable value, however difficult to measure and evaluate, and furthermore, other communicational mechanisms such as conferences, meetings, and even personal relationships among technologists make an important but largely unmeasured contribution.

Encouraging the combination of all these modes of transfer by all kinds of interactions between players in the innovation process is another key element to give good reason to promote the creation of innovation support structures.

However, we already understand that making a portrait of the prevailing global and close environment factors of the targeted country will be the first step to take to obtain a comprehensive view of it and determine the innovation and invention structures and services, that can be implemented in this country to increase its competitiveness in local, regional and international markets.

IMPLEMENTING INNOVATION AND INVENTIONS SUPPORT STRUCTURES AND SERVICES

Further to what has just been presented, we can state that assuming the leadership of an emerging environment favorable to promoting innovation is a national policy task.

But, this national task can be transformed to an efficient governmental policy only if all the economic players of a country appropriate and embrace such policy.

Therefore, innovation support structures should be considered as a public service for innovative minds and SMEs, as other public services which are offered, i.e. in the health care or the educational sectors, etc.

Such a public service would be an incentive and a reinforcement for inventors, innovators and for SMEs to invest in their open and daring ideas and transform them into products, processes and technologies, which later on would benefit the larger part of society.

MANAGING INNOVATION AND INVENTION SUPPORT STRUCTURES AND SERVICES

Usually, innovation and invention support structures and services have to develop and adopt their own type of management with planning and policies depending on the circumstances prevailing in each country.

But, generally speaking, managing an innovation support structure needs the creation of an efficient and autonomous organism approved by the national authority.

It could be a *Secretariat*, which in its operations should be subjected to the commitment of accountability to public authorities and the flexibility and adaptation capacity of an independent organism. For instance, it could be called *Secretariat for the development of new techniques and products and the valorization of intellectual property rights*.

Such organism will have the mission to advise the national authorities on the global environmental factors and the changes needed to facilitate the implementation of innovation support structures and services and to implement components; notably, innovation centers able to bridge the gap between the creators and the market.

As you can imagine, the members of this group will have to prepare a technology development action plan based on the weaknesses and strengths of the local realities. As you probably know, this plan must consider the funding to support the development phase, which could in some cases last several years.

This plan would have to be approved by all concerned parties; consequently, the first members of the *Secretariat* will be from the local authorities. Later on, these people will be assigned to monitor and provide budgetary and oversight control of the program. WIPO, and/or other international partners could provide guidance and advisory assistance.

To implement such a plan of efficient innovation structures, several steps notably the final localization and the recruitment of local and international administrators and experts has to be completed.

INNOVATION CENTER OR INNOVATION SUPPORT NETWORK

An important element of these innovation structures is an organism - or a network of organisms - which acts as the missing link on one side, between researchers, individual inventors, research centers and universities and, on the other side, SMEs, investors, industries and finally the market.

We are talking about an "innovation center": Its mission will be to assist individual inventors (including university researchers), SMEs, creators and businesses in bringing their inventions and projects to completion. The offer of services of the innovation center should permit, or facilitate, the development of their inventive and innovative ideas and assist them in commercializing a new product on the market.

As the success of an inventor depends on his knowledge of a specific technology and of business, the innovation center or innovation support network should not act for the inventor, but it must inform, support and coach him all along the process of innovation.

To realize that mission, the innovation center should offer five or six major functions, in addition to administrative services. These functions, which can be performed either with in-house staff, a specialist network or through a cooperative structure, which could be an attractive option in developing countries, are:

1. An information and promotion program: on a daily basis, the Center must be able to answer questions from inventors, researchers entrepreneurs or anyone seeking adequate information for the necessary steps that have to be taken to realize innovation or invention projects and notably on managing intellectual property rights.

This task can be shared or offered in conjunction with the national intellectual property office information programs that hopefully already exist.

2. An evaluation process program: including initial screening of submitted ideas or inventions to determine acceptability for evaluation. The center should be able to do preliminary evaluation (for example such as Quicksan in Europe), which provides expert's opinions on the strengths and the weaknesses of an invention regarding its novelty, technical feasibility and market potential.
3. A business assistance program: the center has to coach the chosen projects to the complex path of its development, including:
 - a) the market study, the technical R&D and prototypes;

- b) the intellectual property management and the filing of applications for protection of IPRs;
 - c) the commercialization and decision-making, including the support to negotiate a licensing agreement with a third party;
 - d) the preparation of the business plan;
 - e) counseling SMEs on the pre-production process and helping individual creators to find industrial partners to commercialize their invention or innovation.
4. A seminar and workshop program: as mentioned before, the capacity to innovate and increase with the growth of knowledge. The center has this important task of feeding the community with knowledge.

Unfortunately, in some cases we regret that intellectual property offices and private experts in this field identify their task as intermediaries, examiners and attorneys only.

They probably forget about their influence and leading responsibility for their country in the global economy context, which is also promoting a national strategy to protect and valorize knowledge, inventions and innovation.

The innovation center in cooperation with these experts, patent attorneys and intellectual property public relations officers should offer, to individuals as well as groups, courses and seminars on the valuation and assessment of innovation and on the management of intellectual property rights.

5. Brokering program: consists of activities designed to acquire financial support for the development and the commercialization of selected inventions supported by the Center.

Even more through a *brokerage of technologies* program, it will be possible to find partners in the industrial community, who are usually reluctant to establish direct relationships with individual inventors, but are always looking for new products and process.

The innovation center has also to prepare a long-term financing approach to assume an autonomous funding system at the end of the implementation phase of the center.

6. Spin-off incubator: in many countries the industrial structure does not always have the capacity to integrate innovations, especially those with a high content of knowledge and R&D results.

The path of start-ups and research spin-offs will help create new industry sectors with high value-added contents. In those cases the incubator helps to group those projects and share the coaching of the center, as well as the administration, and building facilities.

CONCLUSION

The main functions of innovation and invention support structures and services, including innovation centers, are to achieve a main goal, which is the valorization of inventions and innovations. Each innovation support organism has to be adapted to the economic, cultural, legal, industrial and social situation of each country.

At that point, we will be in the presence of suggestions and information, which a developing country has to deal with, to facilitate its integration in the new economic and commercial realities.

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