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# WIPO NATIONAL SEMINAR ON INNOVATION PROMOTION

organized by
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## INNOVATION PROMOTION AND COMMERCIALIZATION OF INVENTIONS AND RESEARCH RESULTS

*prepared by the International Bureau of WIPO*

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## INTRODUCTION

1. The history of humanity has taught us that knowledge and information are among the most important components of successful development. The systematic application of organized knowledge and information can generate technology and produce solutions to existing problems. Inventions represent new, non-obvious solutions to technical problems and as such they are one of the components of technology. Innovations based on new inventions and technologies have proved to be decisive factors in industrial and economic development. Inventions and related technologies are becoming more and more the objects of trade and business negotiations between corporations and between countries. Any company controlling its own inventions and technologies will enjoy competitive advantage in this highly industrialized world.

2. The support, encouragement and development of domestic technological and innovative capacities represents an important element of development policy and in many countries the patent system has served as breeding ground for numerous inventions and innovations that have been at the origin of many industries and employment.

3. Inventions and innovations however are not natural occurrences. Therefore, technological development will not take place unless some kind of dedicated strategy is initiated to stimulate its occurrence. The industrial property system was established to support such a strategy.

4. Promoting, encouraging and rewarding creative endeavor is the very *raison d'être* of the intellectual property system. This has also always been the principal mandate of WIPO. The protection of intellectual property rights only will be insufficient to make the system relevant for economic development. It is necessary that the intellectual property system is understood and used by all users: individual inventors, researchers, SMEs and R&D organizations, universities, writers, artists, performers, software programmers, etc.

5. An individual or a company will be able to benefit fully from the advantages offered by the intellectual property system, only if they understand the functioning of the system and how to use it.

## INNOVATION AND DEVELOPMENT

6. Since the early 70s many development economists affirmed that since most developing countries and their industries were lacking in technology and technological know-how, these countries would depend very much on imported technology to operate their industry and to support their development. They further indicated that in view of the lack of innovative capabilities, generating and developing original indigenous technologies would be a process too costly, too long and uncertain to be supported on feasible terms. For that reason developing countries were expected to carry on with the importation of more foreign technologies from the industrially advanced countries. In such a way it would be very difficult for such countries to achieve competitive advantage on international markets. Therefore many believed that the transfer of technology would be the solution to the problem.

And for that reason so many efforts were employed to develop and apply a system for transfer of technology on conditions affordable for developing countries.

7. Until present these efforts have not been very successful. Transfer of technology that is satisfactory to both partners can only take place between parties of equal or comparable technological level and economic strength. And without a commitment towards the application and adaptation of technology to local conditions, transferred technology would not be sustainable at the long run.

8. The development, encouragement of and support for domestic technological and innovative capacities is important as shown by the experience of many industrially advanced countries which have successfully stimulated indigenous technological development during the earlier stage of their national industrial development strategy. In these countries, the patent system has become the breeding ground for many important inventions and innovations for the industry.

9. Today policy-makers in developing countries face the challenge to introduce policies and programs, which will bring about the desired indigenous technological development. With this, the local industry will be able to reduce the burden of technology dependency and hopefully, become more competitive on the international arena.

10. Technology imported from abroad should serve as a catalyst for indigenous technological development. Local engineers, technicians and inventors will have the opportunity to learn from the operation of said imported technology. They may then modify and improve upon the technology when trying to adapt it to local conditions and materials. Through the process of natural progression, local technicians will then be able to develop and invent their own technology.

## PROMOTION OF INNOVATION AND CREATIVITY

### *Inventors' organizations*

11. From the national viewpoint, it is imprtant to have independent organizations (societies, associations, etc.) that are conscious of inventions, innovations and technological advancement. To this end, the patent system can be energized to influence and initiate the formation of invention clubs or societies at various level of the community (national, state, district, school), if such societies are not already in existence in a country.

12. Inventors' organizations represent a natural partner for the government in the implementation of science and technology in the country. For the inventors themselves, the creation of said organizations (or inventors' associations) means pooling their own resources together so that their needs and requirements can be better represented. They can also interact among themselves and share experience on research and development as well as on how to commercialize their inventions.

13. Therefore, the establishment of inventors' organizations should be encouraged and supported. The major objectives of inventors' societies could be summarized as follows:

- to encourage creative thinking and the spirit of invention;
- to promote and enhance the development and utilization of inventions;
- to provide advice and guidance to inventors in their work.

*Education*

14. Education is an indispensable element of technological creativity and innovation. Modern society is based on written communications and retrieval and use of information is a function of education.

15. National education systems must be technologically oriented and as such they should function to elevate the technical proficiency of the human resource base in the country. The aim should be to produce an adequate number of engineers and technicians of varied disciplines in order to support technological development in the country.

16. In consonant with the above, there is a need to put in place an education policy which is orientated to support and encourage creativity, including search for new technology and inventions. If necessary, the science curriculum for schools must be reviewed to keep abreast with modern teaching methods of technical subjects. In some developed countries, creative thinking and problem solving are now being taught to young children and they find these lessons interesting and exciting. Anyway, in the development of inventive skills amongst school children and college students, there is a need for synergy between the relevant education policies and the national patent system because of the latter's role in promotion and protection of new technology and innovations.

17. National education policy should aim to introduce invention societies or clubs in schools, colleges and universities. Children and youth should be trained to acquire an investigative mind and possess the attitude to find out how things work and how they can be modified and further improved. Organizing invention camps is one way to expose young people to inventions at an early age.

18. On the other hand, industries can play a leading role in encouraging inventive activity among workers. They can organize courses or workshops to train employees on innovative skills. This will help to create a more supportive environment for innovation at the workplace.

19. Finally, one should be aware that education is not restricted only to the academic training taking place in schools, colleges, or universities. The society at large should have a broader perspective of education. People should always be self-motivated to improve and upgrade their skills throughout their working life, by attending further training courses on science and technology. If in the past the education obtained in school and universities would be sufficient for the whole duration of one person's professional career, today everyone has to upgrade his education on average every five to seven years. We live in a permanently learning society.

*The working environment*

20. There are also other methods for inviting new ideas. One common method is the quality circle for employees where they themselves will strive to identify and solve problems in their own work areas. This is usually organized as a group activity.

21. To tap individual inventive effort, one can organize the suggestion box system in which useful ideas can come from the technical or even non-technical staff, e.g. on how to improve existing company products or processes. The company concerned should try to reward such ideas as an appreciation for the efforts.

22. Although the ideas or inventions coming from the above innovation methods may be small and not very significant, the total economic effect of such activities should not be under-estimated. The inventive mind of the staff is always an invaluable asset of any progressive organization.

23. A number of Governments have adopted laws or established guidelines for the handling of inventions and innovations created by employees and provisions for guaranteeing employed inventors reasonable remuneration for their inventive efforts. Many of the leading companies apply special regulations to encourage and remunerate invention and innovation among its employees.

*Financial assistance*

24. Appropriate financial assistance programs are essential at the nascent stage of development of indigenous technology so as to encourage more interest and investment in research activities in the country. Besides the annual government allocation for R&D projects, some sort of financial packages need to be put in place in order to increase participation in R&D activities by both the public and private sectors.

25. In certain countries exist programs, which provide direct financial assistance to qualified inventors in the form of grants for the purpose of acquiring patent rights as well as to start the commercialization of their inventions. Some schemes are designed to promote development of new technology for national small and medium industries. Some projects require the development of either new products or manufacturing processes, or aim at the creation of new jobs.

26. Tax concession systems are applied in some countries where industries engaged in R&D projects and generating and using innovations are given special financial incentives for doing so. Such incentives include allowances for investment used in setting up a new plant, investment in human resource training, purchase of equipment etc.

27. Another type of financial assistance program is through the provision of venture capital by certain private sector investment institutions such as the banks and financial companies. However, not all financial institutions are keen to participate in research and development projects, without some guarantees of success of the projects. Generally, the financiers are of the view that participation in new technology projects involves higher risks and uncertainty than for conventional projects (such as property development projects).

28. Therefore, greater efforts are required to persuade financial organizations to be more active in assisting R&D project development. Perhaps, the relevant authority can look into the possibility of adopting a new set of criteria used for the valuation of patents and other types intellectual property rights. After all, intellectual property right is a form of property, although intangible, different from other physical properties like land or house, but is still a very much-valued asset.

*Innovation and invention support structures*

29. In a number of countries exist innovation centers or innovation support services, which implement programs aimed at the assessment (technological and economic) of innovation and invention projects. Often the evaluation (assessment) reports of such innovation centers are accepted by financing institutions in their decision taking process concerning the financing of high-risk projects. Governments should support and encourage the establishment of such innovation centers or innovation support structures as they can provide invaluable support services to national innovators at relatively low cost.

*Social and cultural*

30. Generally speaking, in many countries, the society does not accord a high level of recognition for inventors or R&D workers who are involved in science and technology development. Blue-collared job workers do not enjoy the status usually accorded to their counterparts in technologically advanced countries. This will cause a negative impact in the society, where technology, social and cultural factors are all inter-related.

31. In the majority of developing countries, it is common to find that the research and development activities are concentrated at either the universities or public research institutions. The involvement of the private sector in R&D activities has always been minimal. In this respect, industries should not be shortsighted by indulging in immediate economic gains and sacrificing future development through R&D.

32. The mass media - newspapers, radio and television - could play a very important role to promote the public awareness of the impact of inventions and innovations on economic development and personal wealth. Magazines and newspapers, in particular, should publicize success stories of inventors so as to spur further interest on inventions and to create models to follow. Hopefully, the mass media would treat the above as a regular activity and integrate it into their corporate program.

33. The whole society should support and promote all technology innovation programs because, after all, technological progress is for the progress of the society as a whole.

## WIPO AND THE PROMOTION OF THE USE OF THE INTELLECTUAL PROPERTY SYSTEM

34. The current WIPO Program and Budget commits WIPO to further extend its programs aimed at encouraging and rewarding inventive and creative endeavor in developing countries.

35. At the last session of the WIPO Assemblies, the Member States emphasized the importance of developing the intellectual property system in such a way that could maximize economic and social benefits and take full account of a nation's current and potential intellectual property assets. In this context, the cooperation for development program will extend to broader economic and trade interest, as well as to other matters of interest and concern to developing countries, such as indigenous cultures, traditional knowledge, biodiversity, licensing and other technology-transfer arrangements, use of industrial property information for research, development and technology transfer, new or innovative approaches to alternative dispute resolution and more effective IPR enforcement mechanisms.

36. Greater possibilities for using intellectual property in industrial, social, cultural and environmental development, and the broadening user base, have accentuated calls on intellectual property offices to modernize, simplify and expand public services, and to provide access to technological, legal and other information. Today national intellectual property offices can be considered as service providers, since they offer a variety of services to a large community of users – private persons, companies, R&D organizations, other government entities, universities, etc.

37. While focusing on the long term, it is imperative to develop activities that create indigenous capacity to meet future challenges. WIPO's activities will seek to facilitate and encourage integration of the intellectual property system into national economic, cultural, technological and social development, to create sustainable institutions and in particular to support and encourage indigenous innovation and creativity to serve national development goals.

38. WIPO's cooperation for development program responds to the growing international awareness and recognition that the effective protection and proper use of IPRs contribute to economic development, manifested through successful access to global export markets, enhanced domestic competitiveness and productivity, increased creation, application and transfer of new technologies, and more effective incentives for investment in creativity and innovation.

39. Innovation is a very complex process and it is influenced and conditioned by a variety of factors and elements, such as the education system, the working environment, the economic environment, the financial system, the social and cultural environment, etc. Inventions and innovations do not just happen: they are the result of long and tedious efforts of researchers, inventors, scientists and engineers and technicians, working in R&D organizations, universities, small and large companies, in industry, etc. Every effort to influence one or another part of the innovation process must take into consideration the various elements and actors involved in it.

40. As a key element of the national infrastructure for long-term industrial, commercial and technological viability, a sound intellectual property system must link a country's innovative and productive energies with technological and commercial activities, thus promoting, in the long run, stable sustainable economic growth and human development.

WIPO's PROGRAM FOR PROMOTION OF INVENTION AND INNOVATION

41. Since the late 70s WIPO has carried out work on a number of activities concerning the promotion of inventive and innovative activity in the framework of its development cooperation program.

42. The importance of these activities led in May 1998, to the creation of the Innovation Promotion Section, which recently became the Division for Infrastructure Services and Innovation Promotion. Its objective is to develop and implement the WIPO program and activities for promotion and encouragement of inventive and innovative activities in cooperation with the WIPO Regional Bureaus and other divisions and units of the Organization.

43. These activities focus on the users of the intellectual property system in developing and countries in transition, including inventors, researchers, businessmen, investors, innovation managers, technology managers working in SMEs, R&D organizations, universities, etc. Special efforts are made to facilitate the use of the intellectual property system by disadvantaged groups such as women, youth and other members of the community who should also benefit from intellectual property protection.

44. Particular attention is given to the creation of awareness about the benefits and use of the intellectual property system. The objective is to encourage active use and management of intellectual property rights, including assessment of intellectual property rights and resources, development of inventions and technology transfer, improving conditions for development and commercialization of indigenous inventions and other intellectual property creations. For that purpose the program will support the establishment and development of national infrastructures for the support of invention and innovation, such as innovation centers, intellectual property service and information centers (e.g. with chambers of commerce and industry), etc.

45. The program will also address the need for strengthening users' organizations (NGOs), such as inventors associations or organizations of patent and trademark practitioners or agents, and encourage international cooperation among such user organizations.

46. The objective of WIPO's activities aimed at encouraging the promotion of inventive and creative activity, is to create and widen opportunities for inventors, researchers, enterprises and R&D organizations of developing countries, to offer the results of their creative work (inventions, research results, software, services, etc.), to national industries and thus to contribute to the economic and social progress, and, at the same time, to better protect and commercialize their intellectual property in the international marketplace.

47. The main objectives of the WIPO program and activities are:

- to promote protection and valuing of indigenous creations and innovations;
- to establish and strengthen user organizations;

- to offer skills and knowledge enabling users to assess the commercial and market value of inventions and others creations;
- to equip user organizations with the right information, tools, techniques and strategies for protecting and exploiting their intellectual property assets; and
- to expand and improve the quality of the public's knowledge of intellectual property.

48. It is expected that the program will produce the following results:

- wider use of the intellectual property system by users from developing countries;
- greater use of industrial property information in research and development;
- facilitation of the commercialization of inventions created in developing countries;
- stronger user organizations, in particular inventors' associations and copyright collective management societies; and
- improved public knowledge and greater integration of an informed approach to intellectual property in a wide range of economic and social sectors.

## RECENT WIPO ACTIVITIES CONCERNING PROMOTION OF INVENTION AND INNOVATION

49. Subjects related to invention and innovation, commercialization and assessment of innovations, etc. are being given ever-greater attention in WIPO seminars, workshops and meetings. Such meetings are an excellent opportunity for the exchange of ideas, experience and contacts between inventors, researchers and managers and other professional groups involved in inventive and innovative activities, namely governmental authorities, research and development institutions, industry and business, universities, etc. The programs of a number of recent WIPO meetings (in Burkina Faso, Niger, Benin, Cuba, Brazil, Argentina, Oman, Egypt, United Arab Emirates, China, India, Ukraine) and sessions of the WIPO Academy have included one or more subjects related to the promotion of inventive and innovative activities.

50. Since 1984 WIPO has regularly organized international conferences on questions of topical interest to inventors. Usually, these conferences are organized jointly with the International Federation of Inventors' Associations (IFIA) and they coincide with IFIA's General Assemblies, held every second year. The last joint WIPO-IFIA Symposium took place in Budapest, in March 1998, where more than 130 participants from over 40 countries discussed different aspects of the impact of new information technologies on inventive activities. The Hungarian Patent Office and the Association of Hungarian Inventors demonstrated the usefulness of industrial property information and the Internet for inventors and innovators in support of their development and commercialization efforts.

51. The Government of Argentina and the Association of Argentine Inventors have invited WIPO and IFIA to hold their next international conference for inventors in Buenos Aires, in September 2000.

52. In November 1998 an important WIPO Regional Seminar on Support Services for Inventors, Valuation and Commercialization of Inventions and Research Results was held in Manila, in November, in the context of the National Inventor's Week. The Seminar attracted over 80 participants from Argentina, Australia, Bosnia and Herzegovina, China, Cote d'Ivoire, Finland, Hungary, India, Indonesia, Iran, Malaysia, Republic of Korea, Singapore, Sri Lanka, Syrian Arab Republic, Switzerland, Thailand and Viet Nam. Participants included government officials, representatives of inventors' organizations and industry, as well as academics and researchers.

53. Similar regional seminars were held in May 1999, in Aleppo, Syria, for participants from Arab countries and certain countries of Europe and the CIS, and in September 1999, in Abidjan, Côte d'Ivoire, for participants from English and French speaking African countries..

54. A new feature of WIPO's Innovation Promotion Program is to provide assistance in the creation of innovation centers or innovation support services in developing countries and countries in transition. In preparation of such assistance, WIPO commissioned two studies on the practical aspects of the creation of innovation centers in developing countries, which were prepared by experts from Australia and USA, respectively.

55. Several countries have expressed their interest in benefiting from WIPO's assistance in the creation of national invention and innovation support structures or to share experience acquired at the national level. Among these are: Argentina, Brazil, Cuba, Libya, Moldova, Morocco, Madagascar, Philippines, Senegal, Tunisia and Viet Nam.

56. In supporting one or another country in the creation, development or strengthening of invention and innovation support structures, WIPO hopes that the experience gained will make for wider cooperation among developing countries on innovation-related matters. WIPO will support and facilitate the exchange and transfer of experience between innovation promotion and support structures in different countries, in particular among developing countries.

57. The oldest WIPO program for encouraging inventive and innovative activity is the WIPO Gold Medal Awards for Inventors, which were initiated in 1979. During the past 20 years, over 580 medals have been awarded to inventors from 75 countries, 46 of which were developing countries. To encourage inventive and innovative activities in Africa, WIPO has initiated in 1988, in cooperation with the OAU, the OAU-WIPO Invention Award for African Inventors. That Award has been bestowed upon the winners on the occasion of the OAU Summit sessions, held every second year.

58. WIPO encourages developing countries to organize invention and innovation competitions and exhibitions at national or regional levels. These are excellent opportunities not only for inventors and innovators to meet the public and potential partners for the development and use of their creations, but also for promoting knowledge about and the use of the intellectual property system. Last April, WIPO had an information stand at the Afro-Arab Trade Fair, organized by the OAU and the League of Arab States in Dakar, Senegal.

59. At present a new WIPO award scheme -- WIPO trophy for innovative enterprises -- is being initiated with the objective to encourage small and medium enterprises to actively use the intellectual property system in their production and commercial activities.

60. In implementing the various activities, increasing use will be made of information technologies, the IPDL (Intellectual Property Digital Libraries) and the Internet. The active use of information technology today is an indispensable feature in WIPO's activities. The Member States have agreed to invest a considerable amount of resources in building up the WIPO Global Information Network (WIPONet) in close cooperation with all national administrations - patent, trademark, copyright offices, - so that we will be able to disseminate worldwide legal, technological and business information and to attract more users of the IP system from an increased number of countries. The Internet and the Worldwide Web are valuable and profoundly indispensable facilities in the establishment, the creation and the implementation of this large-scale project known as the WIPO Net.

FUTURE ACTIVITIES

61. To assist member States in meeting the future challenges by using the creative and innovative talents of their people, and in line with the mandate and the objectives of its future program, WIPO will:

- design, develop and implement cost-effective activities with a long-term focus on creating indigenous capacity to meet future national development challenges, in particular, to enhance the management of intellectual property rights by creators, inventors, researchers and SMEs of developing countries;

- develop and implement programs and projects aimed at the creation of national and regional invention and innovation support structures, which will provide legal and technical support to inventors, researchers, R&D organizations and innovative SMEs in developing countries;

- provide assistance in setting-up national creativity and innovation promotion programs and funds;

- provide assistance in establishing structures for the assessment and valuation of inventions and research results (at the national level), their technical feasibility, market and commercialization potential;

- encourage and assist in the exploitation of intellectual property assets for national development (including identification and selection of technological strategies based on patent information, patenting strategies for SMEs, commercialization of innovations and inventions, licensing and transfer of technology, use of trademarks, geographical indications and industrial design for product development and market penetration);

- assist in establishing and strengthening user's organizations such as inventors associations or innovation centers, associations of SMEs or chambers of commerce;

- maintain contacts and develop cooperation with regional associations of inventors, with the International Federation of Inventors' Associations (IFIA), and with associations or groupings of innovation centers or similar organizations (e.g. the Association of University Technology Managers, the European Innovation Center Network, etc.);

- provide assistance to and cooperate with organizers of exhibitions of inventions and new technologies, invention competitions and creativity contests;

- develop and operate specific IP services for individual inventors, researchers and SMEs (facilitate access of inventors, researchers and SMEs in developing countries to patent information, advise on technological information services related to industrial property and available on the Internet, state-of-the-art technology, preparation of technology profiles, etc.);

- operate and further develop the WIPO Gold Medal Awards Scheme for Inventors and Innovative Enterprises;

- prepare and publish studies, analyses, directories, publicity and awareness, creating publications and other reference material on matters related to promotion and encouragement of creative, inventive and innovative activities; explore the possibility of publishing a periodical information newsletter, included on the Internet; and

- create and maintain a web page on WIPO's innovation program, including active use of the INVLINK discussion site, as a tool for better communication with inventors and innovators worldwide.

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