The Role of Intellectual Property Rights (IPRs) in Technological Development, Some Suggestions and Policy Implications from Iran's experience for other Developing Countries

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ABSTRACT

The main objective of this article is to study and analyse the role of Intellectual Property Rights (IPRs) in the technological development of developing countries in general and Iran in particular. Firstly, some of the main relevant literature of the role of IPRs in technological development has been surveyed. The performance of the IPRs system of the country and its interaction with national innovation system with some degrees of success has been discussed. Finally, some suggestions and policy implication regarding the improvement and promotion of IPRs system in Iran will be proposed. It is believed that Iran's experience of the role of Intellectual Property Rights protection has not only invaluable contribution for its own future economic and industrial development, but it may also have some policy implications and lessons for other developing countries with similar and common characteristics.

KEY WORDS

Intellectual Property Rights (IPRs), National Technological Development, Less Developed Countries (LDCs), Iran.

INTRODUCTION

The phrase “knowledge-based economy” describes the new economic environment in which the generation and management of knowledge play a predominant part in wealth creation, as compared with the traditional factors of production, namely land, labor and capital. Aptly, the 21st century is often labeled as the “century of knowledge”, as the ability to create, access and use knowledge has become, even more than before, a fundamental determinant of global competitiveness of enterprises and economies (WIPO, 2003).

The intellectual property system is one of the cornerstones of modern economic policy at the national level and a catalyst for development. It will increasingly become an important tool for sustainable development in developing countries, especially the least developed countries, in the knowledge-based society of this millennium. Therefore, understanding the legal and economic foundations of the intellectual property system is a prerequisite for comprehending its increasing importance and roll in national strategies for enhancing competitiveness and accelerating the socio-economic development (Alikhan, S. 2000)

In order to design IPRs legislation and regulations that adequately reflect their specific development objectives, developing countries must first clearly identify their national interests and needs. This will be critical in ensuring that economically disadvantaged societies make effective use of IPRs policy and participate effectively in international policy-making and standard setting (Vivas-Eugui D. and Bellmann C. 2004). But, developing countries face significant challenges for formulating an IPRs policy compatible with their production structure,
Cultural values and development needs, and for translating such policy into laws and regulations consistent with international obligations (Correa, C. 2002). Moreover, policy makers should adopt strategies for promoting IPRs protection as well as management and development of IPRs assets. These strategies are categorized in four main categories: developing national IPRs Strategy, formulating and enforcing necessary Laws, providing good infrastructures, launching proper educational and training programs, Awareness building on different aspects of IPRs and promoting maximum use of worldwide patent information.

Considering these issues, it seems that developing countries have considered designing an appropriate IPRs system as one of the technology development infrastructures, and facilitator of technology transfer process as well as an instrument for attracting direct foreign investment. In recent years, however, some developing countries have paid especial and increasing attention to science and technology field, to narrow the technology gap and, hopefully, join the creators and suppliers of new technologies. This new trend, in turn, encourages developing countries to develop and reinforce their IPRs infrastructures.

However, primary studies carried out in Iran indicate that despite the fact that protection of industrial property in Iran and compilation of legal regulations in this regard have a long history, but Iranian policy makers have primarily considered IPRs system from legal perspectives and its role in promoting technology development has been almost ignored (Goodarzi, M. 2004). Nevertheless, new efforts for promotion of technological innovations in Iran during the recent years, have forced the Iranian officials and policy makers to pay more attention to the IPRs system. Hence, it is necessary for national policy makers in Iran and other developing countries to investigate the role of IPRs system in strengthening their countries' technological capability and national innovation system.

**LITERATURE SURVEY**

There are numerous amounts of evidences that indicate the strong relationship between strengthening IPRs system and promoting technological innovation in macro level. Generally speaking, IPRs can promote an LDCs economic and technological development for many reasons. Firstly, by designing strong IPRs system, LDCs can boost inventive and innovative activities of their citizens through protecting effectively useful patents, trademarks, trade names, geographical indicators, industrial designs, integrated circuits as well as copyrights. Secondly, an efficient IP protection may help LDCs to enter developed countries' markets and also attract more FDI to their countries. Moreover, LDCs may be able to stimulate their productivity growth and create an competitive environment by adopting a strong IPRs legislation. Therefore, the stronger the IPRs system in a country, the better that country is able to promote technology diffusion by enhancing access to knowledge-intensive foreign technologies.

The key to development of the knowledge economy resides in innovation of knowledge, while the intellectual property system, in terms of property, gives the owner of an innovation exclusive rights for a certain period, so that they might recover the high amount of input and gains of innovation, to drive economic development. The establishment of a legal system of intellectual property offers the knowledge turning to the right with the legal basis. It gives full play into the value of intellectual property and maximizes the interests of the owner, thereby mobilizing in full the people’s enthusiasm to innovate. Protecting intellectual property rights is essential to fair competition, research and innovation. While the focus of competition shifts increasingly toward
invention and innovation, the costs of many creative activities rise even as it becomes much easier to copy them (Maskus, 2000).

Clearly, stronger rights will provide competitive advantages for innovative firms, allowing them to appropriate larger returns from creative activity and generating incentives for additional invention (Maskus, 2000). Therefore, successful IPRs protection is about producing effective, commercially driven results. Like any other facet of business, IPRs protection needs to demonstrate a return on investment. The best indications of a return on investment are increased market share and sales attributable to intellectual property rights protection. Intellectual property rights could play a significant role in encouraging innovation, product development, and technical change. Developing countries tend to have IPRs systems that favor information diffusion through low-cost imitation of foreign products and technologies. This policy stance suggests that prospects for domestic invention and innovation are insufficiently developed to warrant protection. However, inadequate IPRs could stifle technical change even at low levels of economic development. This is because much invention and product innovation are aimed at local markets and could benefit from domestic protection of patents, utility models, and trade secrets. (Maskus, 2000)

There are important practical implications of this analysis. First, countries with weak IPRs could be isolated from modern technologies and would be forced to develop technological knowledge from their own resources, a difficult and costly task. Second, those countries would obtain fewer spillover benefits and demonstration effects of new technologies in their economies. Third, technologies available to such nations would tend to be outdated. Finally, nations with weak IPRs would experience both limited incentives for domestic innovation and relatively few inward technology transfers (Maskus, 2000).

However, one may find some exceptional examples that contradict the above-mentioned statement. As Lall (2003) notifies, weak IPRs played a vital role in the technological development of Korea and Taiwan, the two leading Tigers. They are the best recent examples of the use of copying and reverse engineering to build competitive, technology-intensive industrial sectors with considerable innovative ‘muscle’. However, unlike many other developing countries that had weak IPRs, they were able to use the opportunities offered effectively because of investments in skill development, strong export orientation, ample inflows of foreign capital goods and strong government incentives for R&D (Lall, 2003).

Having surveyed the very recent literature of the impact of the stronger IPRs system on national technological capability of developing countries, one may generally refer to notion of national innovation system as critical reason supporting the idea. The concept of National Innovation System (NIS) has been introduced in order to meet the present complexities in the process of knowledge creation and dissemination. Since the 1980s the concept of the national innovation system (NIS) has been gaining popularity as a core conceptual framework for analysing technological change, which is considered to be an indispensable foundation of long-term economic development of a nation. One of the main sub-systems of NIS is the intellectual property Rights' system that may have a very important role in promoting technological capability of any nation. Therefore, the stronger the IPRs system in a country, the more active and successful the innovation system of that country will be. In other words, strong IPRs system in a country will help the other sub-systems of NIS to effectively interact with each other that in turn will promote the technological innovation and national innovative capability of the country.
IPRs IN IRAN

Iran is a resource-rich country that is located in a strategic area of 1.65 million square kilometres, with the Caspian sea, Turkmenistan, Armenia and Azerbaijan in the north, Turkey and Iraq to the west, the Persian Gulf and the Gulf of Oman in the south and Pakistan and Afghanistan to the East. It has a population of about 70 million people. It is one of the major oil exporting countries in the world and also has substantial gas and mineral reserves including coal, chromium, copper, iron ore, lead, manganese, zinc, and sulphur. Moreover, Iran has a relatively good transportation network, including about 4,850 km of railroads, 140,200 km of highways, more than 14 main ports, 132 ships, and 261 airports.

Iran has a fairly well-established intellectual property system among developing countries. The first patent in Iran was granted as early as in 1925. The existing law on patents was enacted in 1931. In 1957, executive regulations were added and modifications made. A year later Iran became a Member State of the Paris Convention. In 1978, the Paris Convention text was revised. But, Iran joined the revised convention only in 1998. Iran enacted legislation for copyright protection in 1969, but it did not join the Berne Convention (on copyrights). In 1980 & 2000, Iran enacted other laws to protect literary and artistic works. In 2001, Iran enacted legislation for software protection, which is said to be compatible with the International practices. A committee of experts from the legal and software sectors drafted the legislation. Under this legislation, if the software is a new invention, it can be granted a patent; otherwise it can apply for a copyright protection. In 2000, the Legal Consultative Committee was appointed to revise the IPRs laws in Iran, as per the model law given by World Intellectual Property Organisation (WIPO). This draft law, which includes protection for industrial designs and others, is placed in the Parliament for approval on a fast track (through ordinance). In September 2003, bills were to be submitted to the Parliament for accession to Patent Cooperation Treaty (PCT managed by WIPO) and to protect geographical indicators. (UNCTAD, 2005).

In Iran, the law relating to patents and trademarks comes under the Judiciary department. The department combines Patent and Trademarks Office and Registration of Companies and is headed by a Deputy head (who is also a Judge of the Supreme Court). The legislation relating to copyrights comes under the Ministry of Culture and Islamic Guidance. Currently, new legislation incorporating 16 different International Conventions on industrial property is being submitted to the Parliament. A High Coordination Committee composed of Deputy Ministers of relevant ministries as members revising the IPRs policies. These ministries include Ministry of Science, Research and Technology, Ministry of Culture and Islamic Guidance, Ministry of Industry & Mines, Ministry of Jihad & Agriculture. Such legislation would help in providing stronger protection to intellectual property by incorporating enforcement as part of the legislation. There are now at least three different courses at the Masters level on IPRs law in universities such as Tehran University and Shahid Behesthi University. Many students have started writing their theses on topics relating to IPRs. (UNCTAD, 2005).
The following table shows the degree to which policymakers concerned toward IPRs in compiling Five-Year development plans:

<table>
<thead>
<tr>
<th>Five-Year plans</th>
<th>The degree of considering IPRs in the documents of the plan</th>
<th>Clarity of special policies and strategies for improving IPRs system in the documents of the plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Five-Year plan</td>
<td>None</td>
<td>Lack of a specific policy or strategy</td>
</tr>
<tr>
<td>(1990-94)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Second Five-Year plan</td>
<td>None</td>
<td>Lack of a specific policy or strategy</td>
</tr>
<tr>
<td>(1995-1999)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Third Five-Year plan</td>
<td>Reference to the defects in Iran's IPRs regime and the necessity of solving the problems</td>
<td>Lack of a specific policy or strategy</td>
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<tr>
<td>(2000-2004)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fourth Five-Year plan</td>
<td>Clear reference to the existence of many defects in Iran's IPRs regime and the necessity of removing them during the execution years</td>
<td>Obliging the government to plan and implement a comprehensive IPRs system</td>
</tr>
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<td>(2005-2009)</td>
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Table 1. IP consideration in Iran's Development Plans (1990-2009)

As it is clear from above table, the Iranian policy-makers have recently paid more attention to strengthen national IPRs system. Despite these efforts, it is clear that the previous Five-Year development plans between enacted during the period between 1990 and 2004 (First, second and third plans) enjoy no technological macro plan and policy regarding overall IPRs strategy in the country. In other words, there has been no specific planning concerning IPRs protection in the country in that era. However, there are more recently considerable efforts in the country to join Iran (as a membership) to international conventions such as Iran's membership in World Intellectual Property Organization in the year 2001 as well as its membership in Madrid convention in 2003, and the follow-up preparations to join to PCT. As previously mentioned, it should also be noted that Iran has not joined to any international copyright agreements (Berne convention) and since Iran is pursing membership in WTO, it is necessary for Iran to join, copyright convention in order to prepare the background for accepting TRIPs agreement.

SUMMARY AND CONCLUSION

Having realized the importance of IPRs system in technological development of developing nations like Iran, policy makers in these countries should pay a very careful attention to integrate the IPRs policies to overall national technological innovation development policies of their

1. Patent Cooperation Treaty
2. World Trade Organization
3. Trade-Related Aspects of Intellectual Property Rights
countries. As Iran's experience of Intellectual Property Rights protection has showed, it can generally be said that the Iranian experience has not only invaluable contribution for its own future economic and industrial development, but it may also have some policy implications and lessons for other developing countries with similar and common characteristics.

It is showed that during recent years, policy makers in the country have paid more attention to the importance of IP in the future of Iran’s development. It also indicates that, only recently and after seventy years, the Patent and Trademark registration Act has been reviewed and revised. Nevertheless, it can be said that there is lack of coordination among main actors in the country's IPRs system within its national innovation system. This among many other things may force policy makers of the country to design and formulate comprehensive IPRs protection strategy for the country. There are some policy implications regarding Iran's most recent revision of IPRs system for other LDCs as well as some recommendations that can help improving its own IPRs system as following:

**Policy recommendations**

Due to the importance of IPRs protection as one of the necessary infrastructures for supporting and promoting innovation in society, policy makers in different countries are trying to prepare the required backgrounds for promotion and development of IPRs assets at national level. Therefore, Iranian policy makers should adopt strategies for promoting IPRs protection as well as management and development of IP assets. These strategies are categorized in four main categories (WIPO, 2003): developing national IPRs Strategy; formulating and enforcing necessary Laws; providing good infrastructures; launching proper educational and training programs; Awareness building on different aspects of IPRs; promoting maximum use of worldwide patent information. Considering these policies and in order to improve Iran’s IPRs system, the following mechanisms are suggested:

- Determining the role, status, and performances of IPRs system in Iran’s National Innovation System.

  For more informed and intelligent IPRs policy-making at national level, periodical studies should be done to determine the status and contribution of IPRs systems in support of new technology development and commercialization. Benchmarking Iranian IPRs system against other developing countries, especially the catching-ups, can be of great importance in this regard.

- Formulating a comprehensive Strategy of IPRs protection System

  In order to provide necessary backgrounds for the growth and development of all IPRs aspects, we should formulate a comprehensive strategy for IPRs protection in the future development plans of the country. This comprehensive strategy should include the following items:

  - Macro-plans for maximum awareness building about all IPRs aspects;
  - Macro-plans for encouraging the innovators in creating IP assets;
  - Macro-plans for increasing international cooperation in all IPRs aspects;
  - Macro-plans for modifying national IPRs laws;
  - Macro-plans for improving IPRs enforcement mechanisms.

- Developing special plans for promoting IP Assets:
This is possible through

- Formulating specific plans for supporting inventors and innovative enterprises
- Providing professional advisory and consultancy bodies for supporting public and private initiatives in the field of IPRs and technology commercialization
- Designing appropriate programs to prove the importance of IPRs for industries
- Establishment of specialized IP mart for providing a platform for technology transfer and commercialization
- Designing appropriate programs for supporting SMEs in protecting and managing their IP assets
- Designing specialized educational and training programs

• Improving the Organizational Structure of the Industrial Property Office

Considering the studies carried out about organizational structure of Iran’s Industrial Property Office, it is suggested that, in short term, this office be separated from Registration Office for Companies and new sections such as administrative and financial section, planning and education section, policymaking and international affairs section, appeal section, and public relations section be added to the existing organizational arrangements in the Industrial Property Office. However, in the long term, it is necessary to establish IPRs Policy Council under the supervision of legislative and executive branches of the government and create a new organization under title of "Iran’s Organization of Intellectual Property".

REFERENCES


