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Research Article

Technology-Based KMS (Knowledge Management System) For IPR (Intellectual Property Rights) Management

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ABSTRACT

Indian Industries as well as academia are going through fundamental changes. The data shows that India is lagging behind other countries as far as information dissemination is concerned. Lot of exploratory research is taking place in Indian academic institutions whereas industries are engrossed in application- based research. Both the entities (Industries and Academic institutions) have now realized the importance of mutually symbiotic relation to build a sound platform for IPR management.

The paper discusses different aspects of IT-based KMS that can be explored for effective IPR management. Such an IT- based KMS can act as a bridge for the concurrent research-oriented activities in Industry and academic institutions.

Paper intends to suggest a framework for the implementation of such a technology, in Indian context. Authors have discussed required hardware, software and management aspects for the deployment of this techno-academic innovative approach for revitalization of IPR status in Indian scenario.

Paper reveals different case studies and statistical information about IPR management in India in comparison with foreign countries and use of digital media for handling Herculean task of storing the details required to preserve IPRs.

The exploratory brains of academicians and result-oriented approach supported by monitory resources of industries can be catalyzed through IT-based KMS to gain a competitive advantage, in the era where knowledge is power and technology is an instrument.

Keywords: IPR, IT-based KMS, Industry-Institute Interaction

Introduction to the topic

After independence in 1947, India has gone through 10 five-year plans, for overall development and technology growth. Science and Technology policy was framed pretty late, i.e. in 2003 and has become major concern as far as amount of technology transfer has taken place, post-S & T policy was framed. Lot of debate is going on regarding the role of academic institutions and universities as far as generation of useful and sustainable technology and its transfer to relevant sectors of industries is considered. Patenting such technology is a real challenge in-front of academic bodies. Further, the required financial support in the form of funding as well as necessary infrastructure is an issue. Naturally, the rate of technology transfer and consequent conversion into patents in India is much less as compared to developed counties as well as some developing countries like Japan, Singapore and China. As a result, there is large variation in number of university- owned (those patents that have a university assignee) with university- invented patents (those patents that have at least one university inventor, but are not owned by the university) in India vis- à-vis in many developed and developing countries.

While universities are often regarded as holding important assets that could be leveraged for economic development, the presence of a local university may be necessary, but not sufficient, to guarantee that knowledge-based economic development takes place.(Janet Bercovitz1 Maryann Feldmann2 , Journal of Technology Transfer, 31: 175–188, 2006. _ 2005 Springer Science+Business Media, Inc. Manufactured in The Netherlands.) (Geuna, 1998, pp. 5–6). Etzkowitz (1983) has coined the phrase **entrepreneurial universities** to describe the series of changes that reflect the more active role universities have taken in promoting direct and active transfer of academic research.

Need for Research

In-spite of good amount of fundamental research taking place in Indian research institutes and Universities, negligible amount of research works gets converted into formal technology and is applied in industries in relevant areas. Government as well as private agencies are ready to provide financial as well as infrastructural assistance to such fundamental research work. But, the lack of communication amongst such entities results into delayed transfer of technology, which ultimately reduces the impact factor of research work carried out. Considering this scenario, the authors felt that IT support to through a framework can improve the results. Also, such an IT based KM system supporting eight-block framework may help the researchers keep track of current trends in research and maintain a network with research institutes and funding agencies. Legal consultants play a vital role in the entire activity. Such consultants can help in improvising the scenario through such a network.

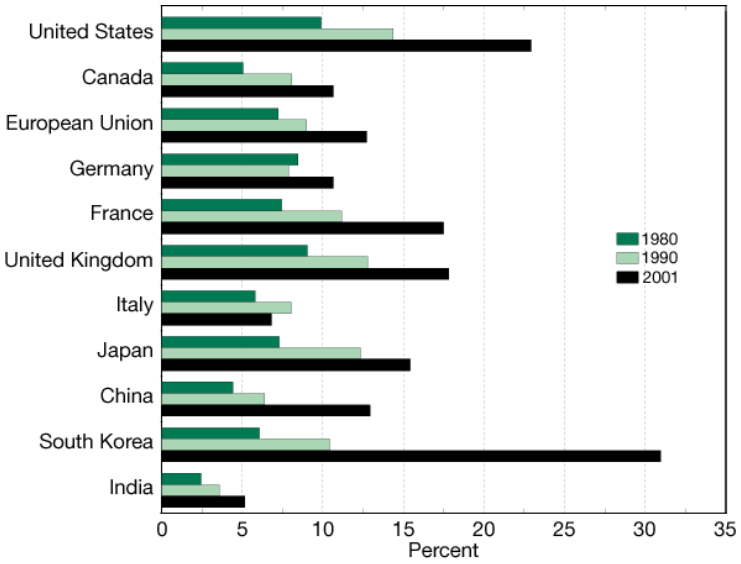
Objectives

1. To study the current scenario of IPRs in India.
2. To identify different stakeholders and activities involved in IPR management
3. Suggest a conceptual framework for IPR management in India
4. Suggest IT-based KM support for efficient management of IPR in India.

Data Collection

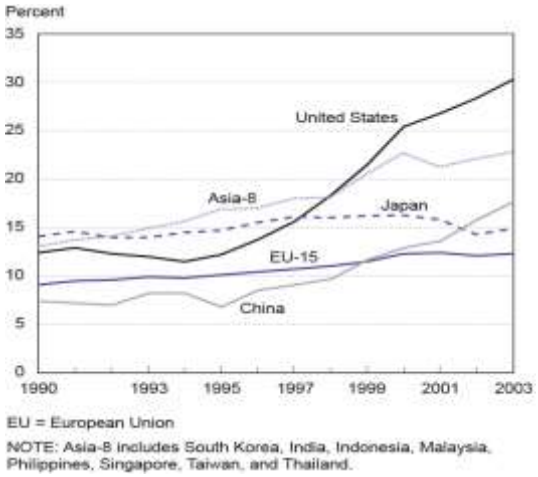
Researchers have used case study method for primary data collection. Pune University case study has been discussed in-depth for understanding the process of Technology Transfer, since Pune University is the first University in India to have its own IPR policy. Secondary data has been collected through research papers published in refereed journals. Facts about IPR status in India vis-à- vis in other countries

As it can be seen in figure, share of high technology in industrial production in India is miserable low, even in comparison with small countries like South Korea and Japan. In 2006, applicants from Japan (514,047) and the United States of America (390,815) filed the largest numbers of patent applications worldwide. A substantial number of filings also originated from the Republic of Korea (172,709), Germany (130,806) and China (128,850). – (WIPO Statistics Database, World Patent Report 2008)

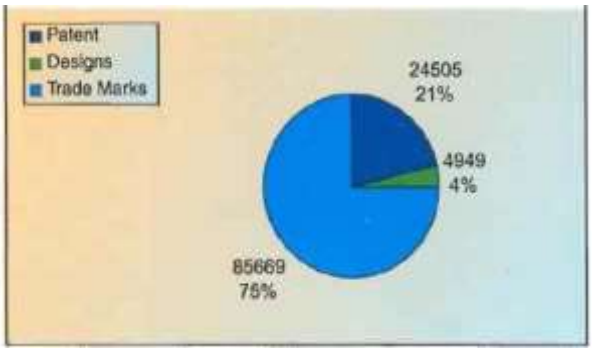


The Share of the High Technology Sector in the Total of the Industrial Production – 1980, 1990, 2001(Beatriz Borher WIPO Rio de Janeiro, May 23, 2007)

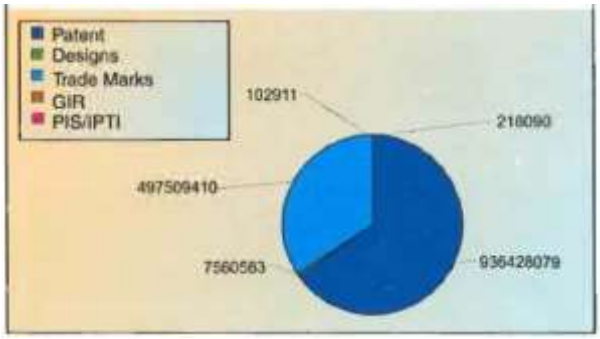
	Patents	Designs	Trademarks	G.I.
Applications Filed	24505	4949	85699	27
Examined	11569	4719	77500	16
Granted / Registered	4320	4175	18432	13



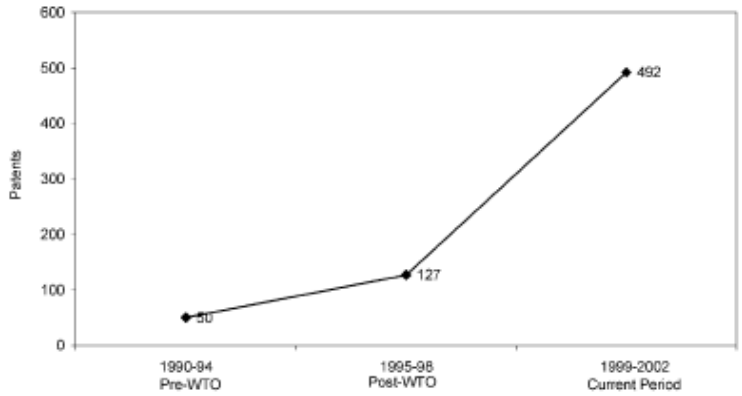
Source: National Science board, Science and Engineering Indicators, 2006((Beatriz Borher WIPO Rio de Janeiro, May 23, 2007)



Applications filed in 2005-06 (Indian Patent Office - Annual Report 2005- 06)

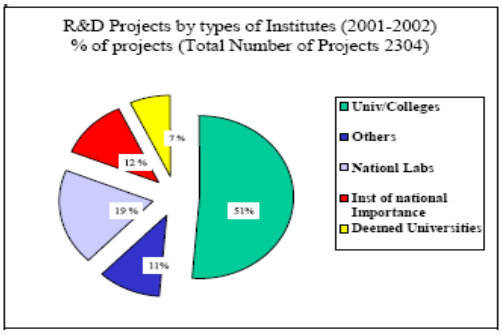


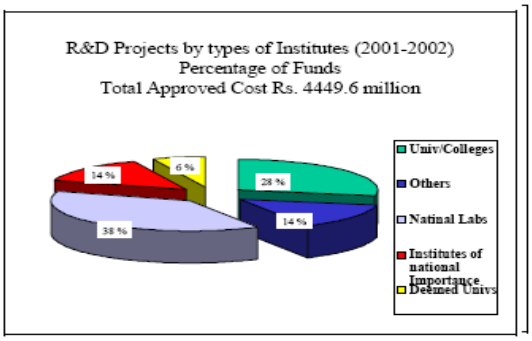
Revenue generated in Indian Rupees in 2005-06(Indian Patent Office -Annual Report 2005-06)



IPR Applications status in India (2005- (Source: Indian Patent Office - Annual Report 2005-6)

Patent activity of Indian organizations during pre/post-WTO and the period 1999–2002 in the USPTO. (United States Patent and Trademark Office) - Indian patenting activity in international and domestic patent system: Contemporary scenario ,Sujit Bhattacharya*, K. C. Garg, S. C. Sharma and Bharvi Dutt, CURRENT SCIENCE, VOL. 92, NO. 10, 25 MAY 2007 , Page 1367





Barriers to University-industry links Following are considered to be some of the barriers on University-Industry links as far as technology transfer and IPR activity is concerned.

a.Technology Transfer Offices (TTOs), industries and universities lack a common vision regarding scientific norms and environment. Industry thinks that sufficient resources are not devoted for technology transfer by universities.

b.The level of marketing and negotiation skills required for successful patenting activity is not done by the universities.

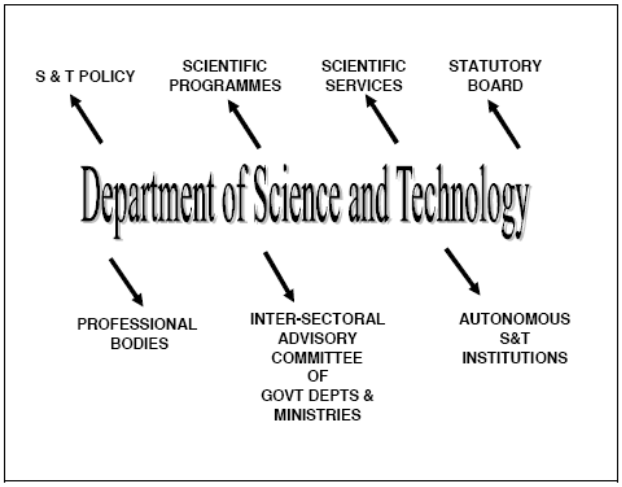
c.Industries think that universities are very bureaucratic and inflexible as far as technology transfer and patenting is concerned.

d.TTOs think that sufficient rewards are not given to university researchers.

e.Enough legal support is not available for actual technology transfer.

Economic support by funding agencies Unlike European countries, very few private agencies provide funding for scientific and technological research in India. Major amount of funding comes from government agencies like CSIR (Council of Scientific and Industrial Research) and UGC (University Grants Commission) to mention.

Science and Technology Department of India is another major stakeholder in IPR activity in India. Following figure shows different stakeholders in working of Science and Technology Department.

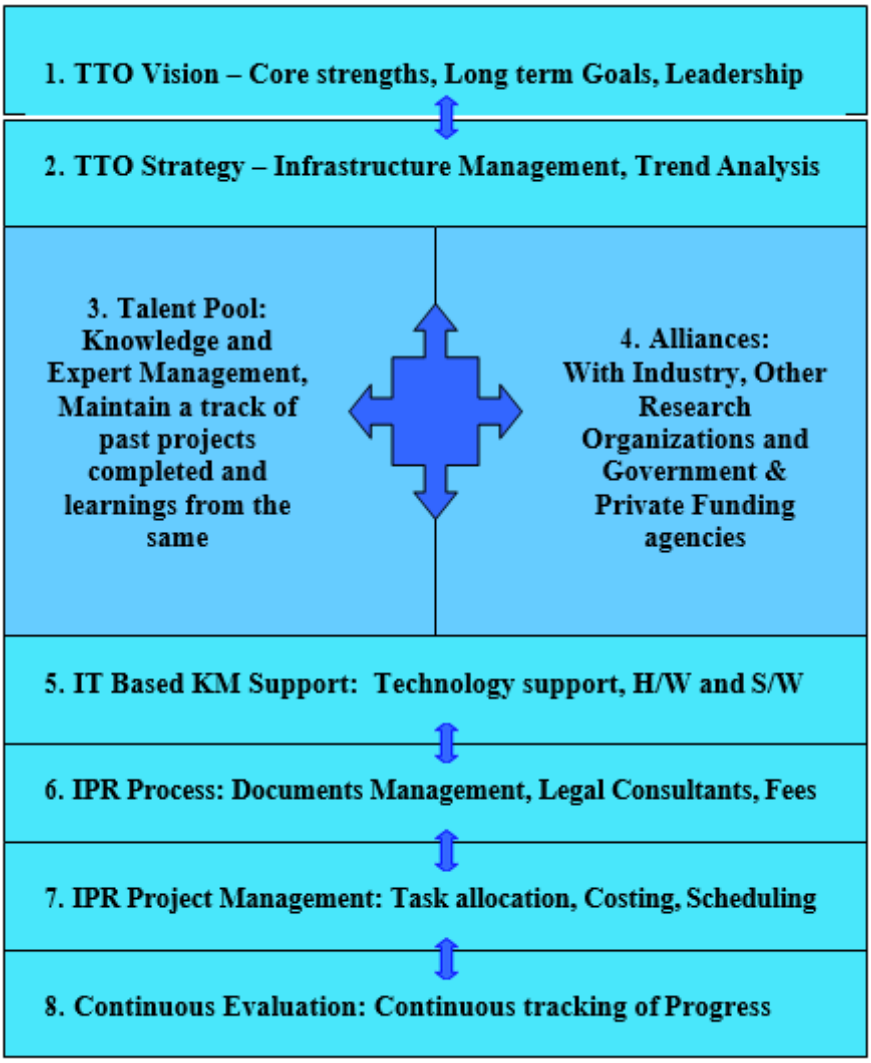


Source: Ganguli P; World Patent Information volume pages (2004) **Framework**

Relations between universities and industry are very much subject to the historical and cultural background of individual countries. In every country, universities operate under a different set of rules, practices and constraints. With some exceptions, most Asian countries have been isolated from global trade in the manufacturing and service sectors until three decades ago. According to the survey questionnaire conducted by P. Ganguli in the Indian national study,3 Indian universities are not fully aware of the importance of intellectual property rights (IPRs) and lack the resources to manage them. Indian academic institutions became aware of the importance of protecting and disseminating their knowledge through patents rather recently and the trend seems to be continuing. In 1995, only 35 applications were filed, but it rose to 96 in 2001 and 79 in 2002. Out of the more than 300 Indian universities, the number of academic institutions that filed patent applications during the last four years was in the range of 22 to 29 per year (a total of 62 over the four-year period), and this was still too small compared with the high number of educational institutions in India that engage in R&D activities (Technology Transfer, Intellectual Property And EffectiveUniversity- Industry Partnerships – WIPO report).

As a step towards facilitation for easy IPR, India's patent office maintains EKASWA database that contains all the IPR related information in India. It has 3 sections as EKASWA-A , EKASWA-B and EKASWA-C. Considering all the above facts and factors along with stakeholders in IPR implementation, we suggest following framework for the same:

Eight Building Blocks of framework for IPR Management



1. TTO Vision – Core strengths, Long term Goals, Leadership
2. TTO Strategy – Infrastructure Management, Trend Analysis
3. Talent Pool: Knowledge and Expert Management, Maintain a track of past projects completed and learnings from the same
4. Alliances: With Industry, Other Research Organizations and Government & Private Funding agencies
5. IT Based KM Support: Technology support, H/W and S/W
6. IPR Process: Documents Management, Legal Consultants, Fees
7. IPR Project Management: Task allocation, Costing, Scheduling
8. Continuous Evaluation: Continuous tracking of Progress

1.TTO Vision – This is the main responsibility of corporate management, to establish a long term vision for the TTO (Technology Transfer Office), identify the core strengths and support it by a well-designed plan so that it can be looked upon as a brand.

2.TTO Strategy – This is for establishing a long term direction and other operational strategies like HR, rewards and remuneration policies.

3.Talent Pool – Is the most important and core activity in the framework. Identifying the expertise available in the required area, keep track of projects completed and explore the learning experience in future projects and maintain such a repository of knowledge base is the essence of this block.

4.Alliances – A well created talent pool, Vision and Strategy can fail without a successful alliances. A well-established network with other research organizations, funding agencies and Industries can become a critical success factor in IPR management.

5.IT-based KM support- A well designed IT infrastructure can act as a catalyst for sustainable growth in IPR status in India. Identifying right hardware and software along with access policies is the main activity in this block. The necessary KM architecture is explained in the next section.

6.IPR Process – A good research work can lose its value without sufficient knowledge about IPR process, required document support and legal aspects. Such information can be made available through this block. IT can be extensively used for this purpose through search engines, links with legal consultants and funding agencies.

7.IPR Project Management – Considering IPR as a project, costing, scheduling and allocation of tasks become very crucial. Also, keeping track of utilization of financial resources of very important for successful IPR management.

8.Continuous evaluation – Is an activity to evaluate the success and identify the gaps in past research projects for further improvement. Such reports can act as an input to future projects for further optimization.

IT-based KM architecture to support IPR management

Information Technology that can support the above framework, especially the blocks 5-8, which can be benefited through IT based KM , made available through Web to provide ubiquitous existence of the system. Such an IT-based KM involves

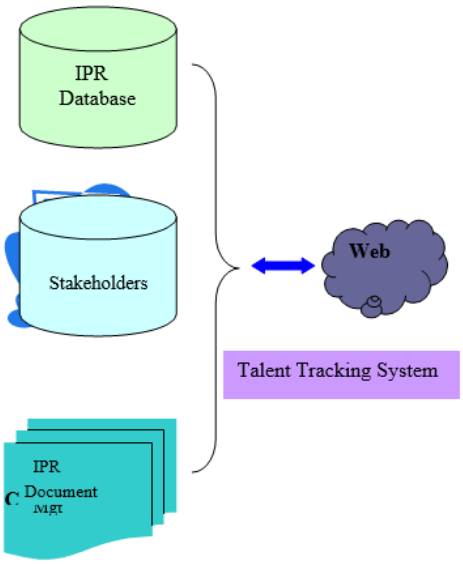
a.IPR Database - Entire data of IPRs can be made available here. Also, a link can be provided for accessing central IPR database such as EKASWA. Such a database acts as a guideline for future research projects.

b.Stakeholders – Is detailed information about all the stakeholders, their areas of interest and core strengths. Details about industry and financial supporters also need to be maintained here.IPR Document Management – Is a very important activity from the point of view of processing IPRs and its legal aspects.

c.Talent Management System – Is an inference-based KMS which is the brain of entire system. Such a system will keep on identifying research patterns and trends based on past history of projects. This will also intimate risk areas and formulate backup procedures.

d.Access control system- Will take care of user authentication and access rights to maintain integrity and confidentiality of the system.

Technology-based KMS (Knowledge Management ~~Syst~~em) for IPR (Intellectual Property Rights) management Pg – 9



Case Study of UoP

University of Pune is the first university in India to have its individual IPR policy, devised in 2003. In addition to UoP, only two institutions in India , IIT – Powai and Kharagpur have this kind of policy. To follow, the University of Pune, Chennai, Kochi, Bangalore, Allahabad and Delhi will soon be starting a course on IPR. University of Pune having the credit of first university to have its IPR policy in place, researchers collected in-depth information aboutorigin and implementation of IPR policy at UoP. Versity is first to claim IPR chair in Pune. At present Dr. Vishal Kataria is heading the IPR cell in the capacity of IPR Chair in UoP. Cell aims to have increased awareness about intellectual property rights and patents in industries, academia and public in general. World Intellectual Property Organization (WIPO) has nominated University of Pune as the **WIPO Initiative University.**

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