



Intellectual property management system: Develop and self-assess using IPM model



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ABSTRACT

The major concern in organizations, especially from developing countries, is that there is a huge gap in Intellectual Property (IP) generation and its commercialization. The key issue is that how this gap between IP generation and its commercialization can be reduced. Hence, there is a need to develop an IPM model, which can assist technology and IP managers to develop their own IPMS as well as help in self-assessment of the existing IPMS. This paper introduces an IPM model, which is easy to implement and follow and can be applied to any sector with some modifications. The model suggests 5 stages and 15 major IPM processes. The validation of the model confirmed effortless establishment of IPMS including the identification of potential IP. The IPM model also helped to reveal the gaps, if any, in the current IPMS, and facilitated strategic commercialization of organizational IP. The study followed the case study methodology.

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1. Introduction

With the development of science and technology, world has seen shifts in economy from farming to industry to knowledge. But how this knowledge can be converted into wealth is the challenge. It is through protection of knowledge. To protect this knowledge, intellectual property (IP) regimes are evolved which help in generation of IP assets. It is not just IP generation that helps in growth and development but its efficient management determines its role for wealth creation and well-being of the society. Organizations are concentrating on effective utilization of IP through robust IPM but still the organizations are struggling to manage IP efficiently. The two major functions of IPM are creation and extraction of 1) Portfolio as protective view; and 2) Portfolio as business assets view.

According to Bontis (1998), managers do not know the value of their own intellectual capital (IC). They do not know if they have people, resources, or business processes in place to make a success of a new strategy [1]. Managers do not know management

potential, creativity importance of IP, stock of IP owned by organization, and utilization of IP to build a new strategy. This is because they are devoid of such information. Organizations are operating in vacuum as they do not have appropriate methods or tools to use that would enable them to analyze their IC stocks (Bontis, 2001) [2]. IC includes human assets, relational assets, codified assets and organizational assets. IP are the codified assets (Litschka, 2006) [3]. Scholars have suggested several IPM models but they have not given directions about how IPM system can be developed and self-assessed [4]. Further, the models suggested are either applicable to particular sector or are complex to follow. Managers have not been trained and informed about what IPM might mean.

With reference to developing countries like India, IPM scenario is still improving; and is in its nascent stage. There is a dire need of IPM models which will help managers to develop and self-assess their own IPMS. It should also be noted that in India there is a lack of IP experts, and even if they are available, they are not affordable to many organizations especially Micro, Small, Medium Enterprises (MSMEs) and academic institutions, which constitute major part of IC.

Government of India's decision about liberalization of economy in the year 1991, and GATT signatory status of India pushed Indian

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organizations to realign functional departments in the wake of the new business environment. This change also provided pragmatic environment for many large multinational companies (MNCs) in India to set up global R&D centers. This positive change made Indian industry to accept and face the global competition.

India is now recognized as a hub for R&D activities for the industrial sectors, particularly relating to information technology, drugs and pharmaceutical, space research, biotechnology, entertainment and several other emerging fields. TRIPs compliant IP Laws in India coupled with strong enforcement mechanism and vibrant judicial system created best investment opportunities and conducive environment for protecting the IP rights in order to enable the industrial community to diversify its commercial activities [5].

In India, the legislative system created various laws or amended existing laws to align with international IP laws. The changes in the recent times have come through enforcement of various Acts such as, the Trademark Act, 1999; Copyrights Act, 1957; Designs Act, 2000; Protection of Plant Varieties and Farmer's Right Act, 2001; Geographical Indication of Goods (Registration and Protection) Act, 1999; Patents Act, 1970; Biological Diversity Act, 2002; Semiconductor integrated circuits layout- Design Act, 2000; and Information technology Act, 2000.

This change in scenario provided Indian organizations the opportunities to expand their market reach and compete globally. Still there is a huge difference (almost 1:4) between the patent applications filed by Indian organizations in the year 2000–01 and 2016–17 at Indian patents, designs and trademarks office.

Though Council for Scientific and Industrial Research (CSIR) and Indian Institute of Technology (IIT) are top IP filing organizations in India (Indian patents, designs and trademarks office annual report, 2011), the revenue generation through IP is not increasing at the same pace as generated IP. Similarly private organizations in India are not showing IP exploitation at that the same pace as they are generating it. So the question arises as to how much IP organizations are protecting and how much IP organizations are leveraging. The observation is that there is a huge gap in IP generation and IP commercialization. How this gap can be reduced is the key query that needs to be addressed. Hence, there is a need to check IPM process efficiency.

This article based on research focused on the electrical engineering sector as per the World Intellectual Property Organization (WIPO) classification of technology, attempts to fill this gap by answering some basic questions: (1) How can organizations develop their own IPM system (IPMS)? (2) How can organization assess own IPMS? (3) How to manage IPMS efficiently for wealth creation?

To address these issues authors proposed "IPM model", which has 5 stages and 15 IPM processes. Any organization which aspires to establish or which have a desire to strengthen the current IPMS can apply the proposed 'IPM model'. Such organizations can map the current IPMS with expected IPMS as suggested in the proposed 'IPM model'. The mapping exercise will provide the assessment of

the current IPMS of an organization. Organizations can prioritize the IPM processes out of 15 IPM processes. The organization can initiate develop the action plan, timeline for the implementation of selected IPM processes, and decide on the expected output. This procedure will help the organization in building up their IPMS and help them to manage IPMS efficiently to create wealth by commercialization of IP assets.

2. Review of literature on intellectual property management system and intellectual property management audit

Knowledge and innovation which may lead to IP generation have been seen as major drivers for economic growth. IP is not only important to 'High-Tech' firms and big corporates but for all organizations including academic and research institutions; MSMEs. Granstrand (1999) suggested the business component and the relative type of IP which organization owns [6]. This will help to appreciate that there are two extremities: i) There are organizations which own IP but they are unaware about what they own and how they can commercialize it to create wealth and ii) There are a few organizations which not only know what IP they own but use it very effectively to create wealth.

Dow Chemicals is the best example of efficient utilization of IP. Dow identified, valued, and assigned its IP to 15 major Business Units. Thereafter Dow assumed financial responsibility for its use and achieved immediate savings of USD 50 million in taxes and maintenance fees on idle patents; earnings in licensing revenues skyrocketed from USD 25 million to more than USD 125 million [7]. If we examine corporate giants like Genentech and Google, we can appreciate the role of academic institutions in building-up world giants, where a single patent triggered inception of a start-up and these start-ups eventually took shape as a giant corporate. If we compare these above cited scenarios with top academic institutions in India, it reflects that there is a huge gap between IP generation and commercialization. Table 1 gives the illustration about this scenario.

The first step for efficient IPM is 'IPM audit'. Literature on IPM audit practices followed by organizations is illustrated in Table 2.

The review clearly highlights that the subject of IPM audit is perceived differently by researchers and practitioners. It is observed that researchers have used mostly three approaches which are inventory, case study and IP analytics approach: i) IP inventory approach is taking the stock of IP owned. It may be concentrated on a single type of IP or all types of IP depending on the objective. ii) IP analytics approach is another IPM audit approach which is mainly concentrated on patents and is more of an IP analytics technique. It is more or less a technology SWOT analysis. IP analytics may also include analysis of other IP such as trademark, copyright, industrial design. iii) The most widely used approach by researchers is the case study approach.

These studies provided proprietary IPM audit checklist, technology heat map, ICU framework for the management of Intellectual Capital (IC) of university, IPM excellence audit system,

Table 1
IP Generation and commercialization by top academic and research institution in India.

	2006-07 to 2010-11	
	Indian Institute of Technology (IITB)	Council of Scientific & Industrial Research (CSIR)
Number of IP (patent/design/trademark) applications filed in India and abroad	38	553
Number of IP commercialized	14	106
License money generated (in Rs Lakhs)	28	12–15

(Source: Arumugam & Jain, 2012) [8].

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