



## Strategic Management of Intellectual Property Rights for Sustainable Competitive Advantage: A Study of Indian Chemical Industry

Hergovind Singh<sup>1†</sup>, Harsh Vardhan Samalia<sup>2</sup> and Y V R Murthy<sup>3</sup>

<sup>1</sup>Department of Management Studies, Maulana Azad National Institute of Technology, Bhopal — 462 003, Madhya Pradesh, India

<sup>2</sup>National Institute of Technical Teachers' Training and Research, Chandigarh — 160 019, Punjab India

<sup>3</sup>Maharashtra National Law University, Aurangabad — 431 005, Maharashtra, India

*Received: 19<sup>th</sup> April 2023; revised: 13<sup>th</sup> March 2024*

This paper aims to explore the role played by the management of intellectual property rights (IPR) as a key driver of business strategy in firms for attaining competitive advantage. The presented paper also proposes a strategic framework majorly suited for Indian innovation prone industries for managing IPR in their bid to outdo the competitors. This study investigates firm's strategic management of IPR through the constructs of innovation, number of IPRs obtained, utilization of IPRs and its alignment with business strategy leading to competitive advantage by either having cost advantage or differentiation advantage in the domain of Indian high-tech industry. Authors found a strong positive relationship between competitive advantage and 'IPR alignment with business strategy' which indicates that, better the alignment between intangibles assets like IPR and business strategy, more is the competitive edge help by the firm. Interestingly, being more innovative does not assure sustainable competitive advantage. Theoretically, the presented work builds up a framework for strategic leverage of intellectual property rights in order to consolidate organizations' competitive positioning in the market. The presented study shows the way strategic management of IPR can help in improving the competitive positioning of an organization as it is among one of the major factor affecting the quest of an organization to attain competitive advantage. Businesses are well advised to invest in creating a strategic pool of IPRs. This can be achieved by developing an innovative organizational culture and by treating IPRs as any other valuable strategic resources. This is among the few studies concerning management perspective of IPRs in Indian context that emphasizes on the strategic usage of the IPR which is primarily seen as a legal instrument. The presented study is distinct in nature as it advances the current extant literature related to the establishment of IPR management in high tech industries.

**Keywords:** Sustainable Competitive Advantage (SCA), Intellectual Property Rights (IPR) Management, Strategic Resource, Patents

In present knowledge-based economy, intellectual property rights or IPR (as they are commonly referred to) are playing far significant role than ever before in shaping the future of both nations and corporate world alike. The sheer force of globalization coupled with fiercely competitive and rapidly advancing technological environment are making it imperative for firms to not only review the basis of present firm level competitive advantage but at the same time keep on identifying the new avenues for sustained growth as well.

As more and more goods are witnessing the global disintegration of value chain whereby, they are experiencing greater need of distributed manufacturing/production coupled with decreased transaction costs thus resulting in eroding away of various traditional sources of competitive differentiation factors.<sup>1</sup> In current century where organizations are using

knowledge in an attempt to refurbish their competitiveness, physical assets no longer remain the sole valuable strategic resources for business enterprises as they were in the earlier century.<sup>2-4</sup>

Many experts of strategic domain agree to the fact that along with physical assets of a firm, various intangible assets like know-how, knowledge base and intellectual property shall also be included while evaluating a firm's market worth.<sup>5</sup> Knowledge as a strategic resource tends to be non-rival (i.e use by one entity does not diminish others' use). The use of knowledge created by other does not incur any marginal cost for the said user of knowledge as marginal cost for additional usage is often negligible thereby creating the problem of 'appropriating returns' from innovative efforts. On the other hand, knowledge creator has to also bear the sunk 'Research and Development' cost which further inhibits the culture of innovation.<sup>6</sup> Faster time to market and

<sup>†</sup>Corresponding author: Email: hergovind@gmail.com

creation of time lag for late movers accompanied by forging of durable links with various users and stakeholders of innovation can aid innovator in solving the problem of ‘appropriating returns’ to a great extent and one of the main instruments making it possible is that of “Intellectual Property Rights”.<sup>7</sup>

Traditionally IPR have been largely viewed from the legalistic perspective only as the word ‘right’ is associated with it.<sup>8</sup> Consequently, the focus was largely on protecting your intellectual property as strong as you can but gradually this thinking is witnessing a change as business leaders are waking up to the opportunities that strategic handling of IPR offers for both value creation and retention as well. IPRs are proving to be quite useful in sustaining the competitive edge gained through the process of innovation as they provide strategic tool to innovators in their battle against time. Start-ups and innovative enterprises need bigger capital and market to monetize their intellectual property for business expansion and growth which in turn helps scaling up of economy.<sup>9</sup> Successful organizations are the one who look forward to various ‘Non-Market’ strategies when it comes to deploying these intangible assets for leveraging the firm’s performance. This enables organizations to create and retain value at the same time by strengthening of proprietary market advantages, enhanced competitive and product leadership position along with better and efficient management of its investment in innovation.<sup>10</sup> With reference to IPR, non-market strategies are primarily concerned with how well the usage of IPR is in-line with the business philosophy of the firm as shown by many successful companies like Canon, IBM, 3M, Procter & Gamble, General Electric and Novartis to name a few.<sup>11</sup> These market leading companies see their IPR exploitation programs as one of several key business processes next to Research & Development, Mergers & Acquisitions, and business development that drive long-term growth. Managing IPRs forms an integral part of the organizational control process for measuring organizational and individual performance. IPR management acts as a tool for knowledge acquisition and also as the basis of corporate diversification and differentiation policy which provides firm with the sustained competitive advantage.<sup>12</sup> In order to boost a country’s national and economic development, the creation and application of knowledge via science and technology plays a vital role. This predominantly needs a start-up framework

in universities so as to ameliorate the IPR commercialization.<sup>13</sup>

Strategic Management for long has been beheld as the concept and process that holds together an organization and its environment in a seamless binding.<sup>14</sup> Strategic Management has been identified as development of corporate and business strategy as well as management of organization according to that strategy(s) in order to achieve and maintain a strong competitive advantage. Competitive advantage is transposable with words like distinctive competence and comparative advantage.<sup>15</sup> As the word ‘Competitive Advantage’ is a relative concept only, it is defined as “an advantage that one firm possess over a competitor or a group of competitors in a given market, strategic group or industry”.<sup>16,17</sup> Competitive advantage is also defined as an advantage that organizations gain in relation to their competitors, provides value to their customers and benefit the organization itself in both short run and long run.<sup>18</sup> One can find two major perspectives on the subject of ‘Competitive Advantage’ namely, ‘Outside-in’ approach and ‘Inside-out’ approach. Michael Porter is considered to be the main protagonist of outside-in perspective wherein he emphasized that strategic success of a firm is largely dependent on the aspect how well the concerned firm continuously adapt to the external environment while determining their strategies. Further, being in attractive markets and industries is critical as the locus of competitive advantage lies in the market place and positioning your firm as either being low-cost provider or differentiation provider.<sup>19,20</sup> However, Porter was quick to accept the importance of role played by firm’s resources.<sup>21</sup> Competitive Advantage can be attained by accruing and deploying organizational resources in an efficient manner which was also substantiated from the work done by other researchers.<sup>22</sup> Investment in firm’s assets and managerial capabilities helps the organization to build positional advantage by leveraging the unique resources valued by all stakeholders through differentiation strategy ultimately resulting in competitive advantage.<sup>15</sup> This capability based perspective focused on innovation, cost control, service quality, and business responsiveness as a means to build a competitive position that in turn can help firm in protecting its market priorities.<sup>23</sup> Entrepreneurial ecosystem and culture help promote competitive advantage wherein government’s

regulations and policies favoring entrepreneurial activities plays a major role in promoting and inculcating competitive advantage in economy.<sup>24</sup> The competitive advantage thus attained by the firms is sustainable or not has invoked a lot of interest in many researchers and practitioners of strategic management domain.

Sustainability with respect to competitive advantage is not about a particular calendar time period neither it implies that competitive advantage will continue forever but is definitely impacted by extent and possibility of competitive duplication persisting in the market.<sup>25</sup> Sustainable competitive advantage can lead a firm towards higher profitability by ensuring superior performance as compared to other players in the fray.<sup>26</sup> Sustainable innovation has become a powerful strategy for the companies to gain competitive advantage, wherein companies focus upon securing their intangible assets using intellectual property rights (filing patents, trademarks, designing rights etc.).<sup>27</sup> However, economic benefits will wane away unless the resources responsible for the advantage are short in supply<sup>28,29</sup> which was also supported by resource based view theory as well.

### Resource Based View of the Firm

Resource Based View (RBV) theory of the firm takes into cognizance the fact that any business organization is merely a collection of difficult-to-imitate competencies which are in turn the result of resources and capabilities.<sup>30-32</sup> According to RBV's lens for a firm to attain Sustainable Competitive Advantage (SCA), it's resources shall fulfill criteria of being a) valuable to the organization, b) rare or if possible unique, c) difficult to copy or imitate, and d) non-substitutable.<sup>23, 33-37</sup>

A major assumption in RBV theory is that spread of strategic resources within an industry is quite heterogeneous in nature and mobility of these resources are not of perfect nature.<sup>33,37</sup> This heterogeneous dispersal comprising of a mixture of tangible and intangible assets (firm resources) emphasizing on internal analysis is primarily responsible for the significant gap observed between the book value and market value of publicly listed firms specifically in a technological intensive sector.<sup>38-41</sup> Intangibles assets like Intellectual Property, company network and databases, firm's know-how, brand and company reputation also are responsible for the high value generated by the concerned firm,<sup>42</sup> which lays down the foundation for firm's

competitive strategies to outperform the one's having strategies based on tangible asset only.<sup>36,43-45</sup> As intangible assets do not have any ceiling on the ways in which they can be exploited by the firm in order to extract as much value as the resource holding firm can accrue by renting (for example by licensing) or by selling (for example by selling a brand) them or by using them in-house, since these intangible resources are little hard for competitor to imitate.<sup>46</sup>

Once value is extracted out of these intangible resources, they are subjected to claim by number of various other potential stakeholders for appropriation such as employees, customers, government, suppliers, and shareholders.<sup>17,47</sup> The situation concerning the same becomes more complex if the boundaries of these property rights are not properly sketched out.

### Intellectual Property Rights and Its Management

There is an established literature covering the subject of intellectual property as many economists have been able to recognize that innovation, technological change and economic growth are stimulated by the prospect of deriving exclusive profits from Intellectual Property. Technological innovation has been well in relation with FDI inflows and with that of an acceptable IPR policy, a strong law, and an industry-university association.<sup>48</sup> Intellectual Property rights promote innovation by allowing intellectual property owners to prevent others from appropriating much of the value derived from their inventions or original expression.

Intellectual Property has been defined as "Physical manifestation of original thought in compliance with statutes, specifically patent, copyright or trademark statutes"<sup>49</sup>, while it had been shown as a part of 'Structural Capital' in modified intangible assets monitor. Intellectual property rights (IPR) are the rights granted for some inventions, artistry, literary works, patent, trademarks, trade crates, industrial design, layout design and copyright oriented rights.<sup>50</sup> Intellectual property rights are majorly divided as industrial property right and copyright<sup>51</sup> wherein the industrial property right primarily comprises of patents, registered design, utility models, trade secrets, and trademarks. For this research purpose, patents, trademarks, trade secrets, and copyright are being used in their most common sense.

Intellectual Property Rights are the territorial rights whose functionality as an information interface between public and private domain knowledge creation also bring to the fore multiple role-set played

by it in the relation between a company and its strategic environment. Intellectual Property Rights can be used to sustain the competitive edge gained through the process of innovation but as complexities of the Intellectual Property system allows for a range of strategic behaviors, organizations always do not, necessarily, exercise their exclusive rights to prevent others from exploiting the innovation. The objective of managing intellectual property rights is not to enforce them strongly (though having that option is certainly valuable), but is to maximize their business value to all concerned stakeholders. Sometimes these goals are coincident, while sometimes they call for more liberal approach in dealing with them. This kind of business environment has expedited the need of seamlessly integrating the firm’s Intellectual Property rights management into its business strategy.<sup>52</sup>

Owing to the above, number of organizations now consider managing IPR as an integral part of their business strategy formulation process wherein they tend to consider them for revenue generation or for creating entry barriers by making it difficult for the competing firms to get access to critical resources by circumventing those resources *via* IPR protection.<sup>53,54,37</sup> Proper and formal IPR protection mechanisms positively impact the competitiveness of the firm and has direct relation to it. The size and innovation profile of the company intermediates the influence of IPR protection on its competitiveness.<sup>55</sup> Thus, it can be said that intellectual property rights have become very critical to companies’ quest for attaining sustainable competitive advantage.<sup>11</sup>

From the above discussion on strategic management of IPR, the following relations are hypothesized (Fig. 1):

- H<sub>1a</sub>: There is no significant relationship between ‘innovativeness’ of the firm and competitive advantage in terms of differentiation leadership.
- H<sub>1b</sub>: There is no significant relationship between ‘innovativeness’ of the firm and competitive advantage in terms of low-cost leadership.
- H<sub>2a</sub>: There is no significant relationship between ‘propensity towards obtaining IPR’ and competitive advantage in terms of differentiation leadership.
- H<sub>2b</sub>: There is no significant relationship between ‘propensity towards obtaining IPR’ and competitive advantage in terms of low-cost leadership.
- H<sub>3a</sub>: There is no significant relationship between ‘perceived IPR usage’ and competitive advantage in terms of differentiation leadership.

- H<sub>3b</sub>: There is no significant relationship between ‘perceived IPR usage’ and competitive advantage in terms of low-cost leadership.
- H<sub>4a</sub>: There is no positive relationship between ‘perceived alignment of IPRs with business strategy’ and competitive advantage terms of differentiation leadership.
- H<sub>4b</sub>: There is no positive relationship between ‘perceived alignment of IPRs with business strategy’ and competitive advantage in terms of low-cost leadership.

**Methodology**

The primary data for this study was collected with the help of a research instrument in the form of a questionnaire. This questionnaire contained items for measuring the various variables (both dependent and independent) impacting the strategic management of IPRS. Multi-items were used to measure each variable. A five-point Likert scale from strongly disagree to strongly agree was used to measure the items. Most of the items were constructed after having a focused group discussion with various experts of the field from both corporate and academia. The questionnaire is enclosed in the Appendix.

**Sample and Procedure**

The sample for the study was conveniently selected from managers, senior managers and top management officials from three highly technological industries *viz* Pharmaceutical, Tractor and Chemical.

A total of 1600 questionnaires were administered to officials of total 19 pharmaceutical, Tractor and chemical industry based firms out of which 397 in responses were received out of which 37 responses were discarded because of missing values giving us a response rate of around 22.5% for the valid responses that is considerably satisfactory.

Of all the valid respondents, only 8.7 percent indicated total working experience in the field of one to five years; 24.4 percent between six and ten years; 17.3 percent between 11 and 15 years; 14.8 percent between

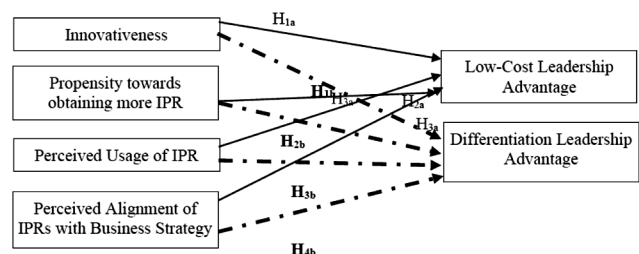


Fig. 1 — Research Model

16 and 20 years; 18.2 percent between 21 and 25 years; and 16.6 percent had more than 26 years. The samples consist of 91.5 percent male and 8.5 percent female respondents which is quite reflective of the India as a country having very less number of female workers at managerial positions especially in high-tech industries.

Cronbach's coefficient ' $\alpha$ ' is widely used to estimate the internal reliability of multi-items and its rate of 0.70 or higher is considered acceptable. Results indicated that innovativeness, propensity towards obtaining IPR, cost advantage and differentiation advantage were required to adjust their items in order to remain for further analysis. Thus, related items were corrected before further data analysis (Table 1).

### Hypothesis Testing

Hypothesis testing was carried out using regression analysis. Table 2 provides the result summary of regression analysis for three different models in which dependent variable is taken as Low Cost Advantage (CA), Differentiation Advantage (DF) and Focus Advantage (FO) for hypothesis testing respectively. Table 3 provides some more details of hypothesis testing results in form of standard coefficient, 't' values and significance. In sum, this study finds

support for hypothesis H4 in all the three regression models respectively while for hypotheses H1 and H2 it was not the same case as they were not able to find the significant level required for acceptance in at-least one model. Surprisingly, H1 was not able to find significant support in all three models. The result detail of all three regression models along with the independent and dependent variable being used in the respective model has been elaborated in Table 2 and Table 3 as given below.

### Interpretation and Discussion

One of the major contributions of this work has been in establishing that IPR are aligned with business strategy of the firm, it will indeed lead to sustainable competitive advantage in the form of either having cost, differentiation and/or focus

Table 1 — Cronbach's alpha, reliability statistics

| S. No. | Variable name                        | Cronbach's alpha | No. of items |
|--------|--------------------------------------|------------------|--------------|
| 1      | Innovation                           | 0.739            | 8            |
| 2      | Number of IPR                        | 0.7187           | 8            |
| 3      | Utilization of IPR                   | 0.912            | 8            |
| 4      | IPR Alignment with Business Strategy | 0.82             | 8            |
| 5      | Cost Advantage                       | 0.881            | 8            |
| 6      | Differentiation Advantage            | 0.93             | 5            |
| 7      | Focus Advantage                      | 0.89             | 5            |

Table 2 — Model summary

| Model | R    | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|-------|------|----------|-------------------|----------------------------|---------------|
| 1     | .79  | .625     | .622              | .5398728                   | 1.118         |
| 2     | .856 | .734     | .731              | .4985808                   | 1.215         |
| 3     | .815 | .664     | .661              | .5675932                   | 1.317         |

Table 3 — Coefficients

| Model | Independent variables | Unstandardized coefficients |           | Standardized coefficients | t     | Sig. |
|-------|-----------------------|-----------------------------|-----------|---------------------------|-------|------|
|       |                       | B                           | Std Error | Beta                      |       |      |
| 1*    | (Constant)            | .682                        | .265      |                           | 2.572 | .010 |
|       | INV                   | .114                        | .071      | .058                      | 1.618 | .101 |
|       | IPR                   | .080                        | .055      | .073                      | 1.452 | .147 |
|       | IU                    | .264                        | .068      | .329                      | 3.872 | .000 |
|       | BI                    | .278                        | .065      | .384                      | 4.305 | .000 |
| 2#.   | (Constant)            | 1.051                       | .245      |                           | 4.288 | .000 |
|       | INV                   | -.058                       | .065      | -.027                     | -.881 | .379 |
|       | IPR                   | .192                        | .051      | .160                      | 3.774 | .000 |
|       | IU                    | .151                        | .063      | .173                      | 2.409 | .016 |
|       | BI                    | .455                        | .060      | .575                      | 7.636 | .000 |
| 3^.   | (Constant)            | .198                        | .279      |                           | .710  | .478 |
|       | INV                   | .124                        | .074      | .056                      | 1.667 | .096 |
|       | IPR                   | .174                        | .058      | .143                      | 2.998 | .003 |
|       | IU                    | .131                        | .072      | .147                      | 1.830 | .068 |
|       | BI                    | .424                        | .068      | .528                      | 6.243 | .000 |

advantage for the organization. It may even enable firms to have all three at same time even though that may last only momentarily. Some unexpected results also comes to the fore in the form that though all the firms consider innovativeness to be critically important still many of them are unable to convert their efforts in this domain into financial performance. This finding is consistent with the work carried out by Dosi, Marengo and Pasquali<sup>6</sup> wherein they stated that many of the innovators are out-competed by imitators enjoying lower costs thus making returns on innovation to disappear quickly.

Second finding of the presented work reinforces the notion that firms should work in the direction of obtaining large number of IPRs over the innovation existing either inside or outside the organization. Granstrand<sup>52</sup> observed that value of Intellectual Property Rights have surpassed the value of physical capital so more the number of Intellectual Property Rights more is the value created. The same coupled with the work carried out by Barney<sup>33</sup>, Collis and Montgomery<sup>47</sup> where they talk about the resources that creates more value as a potential source for competitive advantage supports the findings of \*Dependent Variable: CL ; # Dependent Variable: DF; ^Dependent Variable: FO; this work. This is further supported by the empirical surveys carried out by Cohen *et al.*<sup>56</sup> and Levin *et al.*<sup>57</sup> wherein they conferred about cost and benefit analysis of patenting for innovating firms. This observation of the presented work is also in-line with the results of the study carried out by Hall and Zeidonis<sup>58</sup> wherein they have discussed the increase in propensity towards obtaining various forms of intellectual property rights by the successful organizations over the innovations identified by them.

The result of the presented work in-line with Rumelt's<sup>59</sup> observation that intellectual property rights can be used as isolating mechanisms coupled along with Pattison's<sup>60</sup> study regarding the aspect that patents demonstrate superior potential to enhance economic performance if utilized appropriately provides strength to the findings of this research work as well. Few empirical studies of patent effectiveness and importance if used in a proper manner carried out by Mansfield *et al.*<sup>61</sup> provided more weight age to the results of the research work under discussion.

These results are in accordance with the work done by Rivette & Kline.<sup>11</sup> Rivette and Kline<sup>11</sup> argued how IBM's aggressive intellectual property utilization

efforts boosted its annual IPR licensing royalties by 330% in the period between year 1990 to year 2000 (i.e. from \$30 million to \$1billion). Similarly, Cohen *et al.*<sup>56</sup> and Kingston<sup>62</sup> in their respective studies also looked at how firms utilize patents to build up the strongest possible negotiating position. In the same line Cohen *et al.*<sup>56</sup> stressed over the use of patents as an important signal to prevent future lawsuits.

Wagman and Scofield<sup>49</sup> reinforced the results of the presented work by their study in which they claimed that in the year 1993, some US\$23 billion was lost by US industries because of intellectual property rights infringement, which also underlined the importance of appropriate Intellectual Property Rights' utilization for the Indian companies.

Teece<sup>37</sup> suggested in his work that many companies when undertook intellectual property rights management as a part of business strategy, were able to generate better financial performance. Pitkethly<sup>53</sup> and Sullivan<sup>54</sup> also discussed in their work that IPR can be strategically used as a 'flexible entry barrier' for competitors provided IPR is aligned along with the business strategy of the firm.

The study also reveals that IPR decisions when taken in harmonization with the business strategy of the firm can impact financial performance of the tractor manufacturing companies in a big way. When IPR is made to be aligned with the business strategy of the firm, it positively impacts the way strategic decisions are taken by the firm. This result of the study is in-line with the work done by Andersen<sup>5</sup> who said that in future increasingly those companies will win that are good at strategically managing their intellectual property rights. This was also supported by Rivette and Kline<sup>11</sup> wherein they emphasized that the production and management of IPRs must become a core competence of the successful enterprises. It is also evident from various researches that, strategic use of patents by many firms. An empirical study done by Davis<sup>63</sup> reinforced the strategic use of intellectual property rights by many successful firms.

With respect to the strategic management it has been noted that cost of the product plays a major role in identifying whether an product innovation will be successful or not. Process innovations most of the times are oriented towards the aim of reducing the cost incurred by the firm in developing or marketing the concerned product. The results of this research work emphasize on the point that majority of manufacturing companies for gaining cost advantage

over their competitors look towards innovation and intellectual property rights as vital sources.

With regard to variable 'Differentiation Advantage' the same was observed by Michael Porter<sup>64</sup> in his work that to enhance competitiveness organization needs to differentiate their products from its competitors.

For the variable 'Focus Advantage' this result is in-line with the work presented by Michael Porter<sup>64</sup> in which he talked about the competitive advantage that can be gained by organizations which focuses on specific market segment.

This brings us to the result that when firm having innovative capabilities also develops capability to strategically manage Intellectual Property Rights by ensuring the proper utilization and obtainment of all necessary intellectual property rights, it will result in attainment of competitive advantage for the company. Results also indicates that if these intellectual property rights are managed in a manner so that they are in-line with the business strategy of the firm than the competitive advantage thus obtained will be sustainable as well. This result of the study is in-line with the work done by Granstrand<sup>52</sup> and Rivette & Kline<sup>11</sup>, wherein they observed that Intellectual property rights are becoming central to the performance of the firms by virtue of huge amount of untapped value that lies in them. This coupled with the work carried out by researchers of strategic management field like Barney<sup>33</sup>, Porter<sup>19</sup> and Prahalad & Hamel<sup>65</sup> reiterated the observation that this continuous creation, protection and strategic management of valuable resources and capabilities will ultimately result in attainment of Sustainable Competitive Advantage.

The attributes of IPR management (Propensity towards obtaining IPR, Usage of IPR and Business strategy alignment of IPR) were tested against the SCA comprising of defining business, innovation assessment, conducting IPR audit, analyzing external and internal factors, licensing/cross-licensing IPR, donating IPR, searching and litigating against IPR infringers, analyzing IPR portfolio, choosing new IPR protection and sustainable competitive advantage.

### **Managerial Recommendations**

Organizations shall move away from their thinking of considering intellectual property rights as a legal entity only. Companies must take into consideration the rising value and share of intangible assets in the success of various organizations in the present

knowledge economy. Due significance shall be awarded to intellectual property rights as its strategic management can act as a valuable source of competitive advantage. This underlines the importance of a more proactive approach to be adopted by filing an application for trademarks and patents as soon as they come across a commercially viable and innovative idea. From the findings it is also observed that most of the companies perceive intellectual property rights strategy as simply a matter of protection. Most of them protect their intellectual property as cost – effectively as possible, which is little more than an entry – level intellectual property rights strategy. It certainly does not take into account the potential value that could be leveraged from Intellectual Property Rights. Thus, it is recommended that organizations shall take a view in which intellectual property rights is seen as a profit center rather than a cost center which will help in leveraging to full possible extent the value of intellectual property rights.

It has been also recommended on basis of the study conducted that organizations must try to obtain as many IPRs as they can over their innovation efforts and at the same time must utilize them optimally by means of licensing, cross-licensing, generating goodwill for the company by donating dormant IPRs, blocking the competitors' development in a particular technological area and / or even using them as a collateral for the benefit of the business. Further, it is strongly recommended that companies must formulate their business strategy keeping in focus the intellectual property rights owned by them and their competitors.

On the basis of the findings of the primary survey along with the literature review conducted for this presented work, a strategic framework has been recommended for firms in order to gain leverage from intellectual property rights management (Fig. 2).

The contribution to academic body of knowledge of this work is in relation to a new level of understanding between the management of Intellectual Property Rights within the corpus of management theory and the proposal of a framework for relating the strategic importance of managing Intellectual Property Rights in order to realize competitive advantage. This piece of work also tries to explain various components of intellectual property rights management and its linkage with business strategy for attaining sustainable competitive advantage.

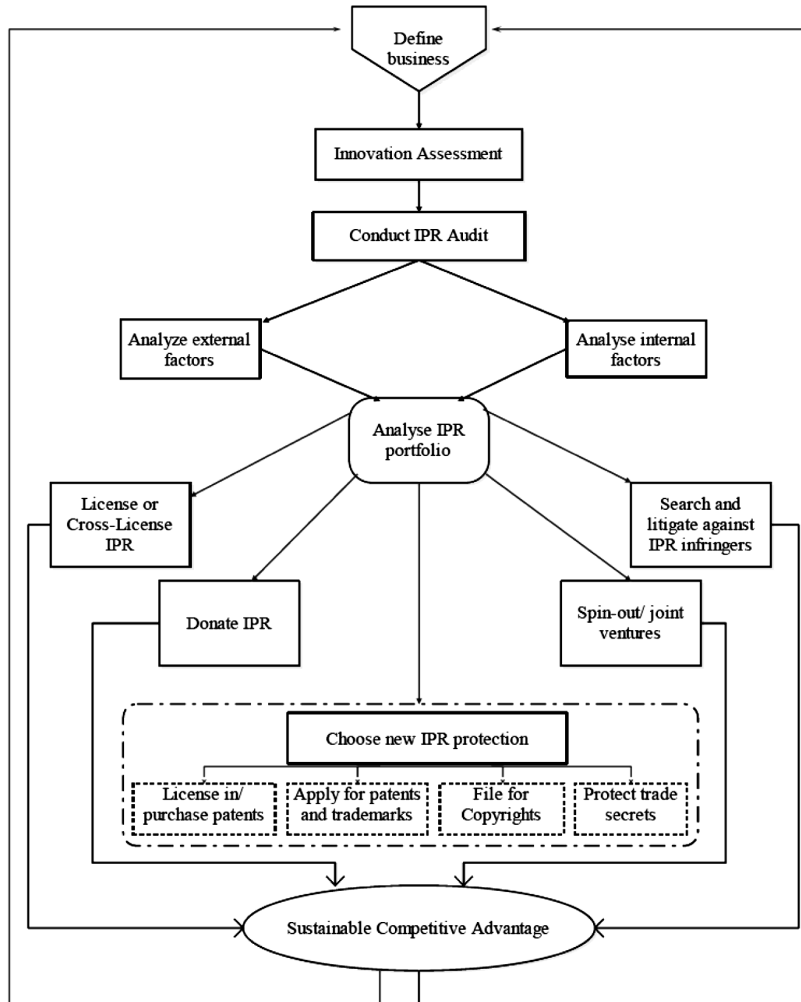


Fig. 2 — Strategic framework of intellectual property rights

**Conclusion**

Even after developing a culture of innovation, it will be difficult for organizations to survive unless they ensure returns from the resulting innovations by strategically using the IP protection. Firms shall see their Intellectual Property as a valuable intangible asset that must be exploited strategically to its fullest extent. Strategic management of intellectual property rights is of paramount importance for firms to attain sustainable competitive advantage.

This presented work of research initiated with the objectives of viewing the manner in which intellectual property rights management affects the realization of competitive advantage by companies. This work also dwelled on the aspect of formulating a framework of strategically managing intellectual property rights in order to utilize it for attaining competitive advantage.

With competitive pressures ever-increasing, very few companies will be able to afford the ignorance of

viewing intellectual property rights as a strategic asset. Better strategic decisions regarding investment in research and development, obtaining more number of intellectual property rights and enhanced utilization of intellectual property rights owned by companies keeping business strategy of the firm in consideration all the time will enable organizations to achieve cost advantage, differentiation advantage as well as focusing better on needs of the customers.

The observations thus made from this study were found to be in-line with the work carried out by Andersen<sup>5</sup>, Cohen *et al.*<sup>56</sup>, Davis<sup>63</sup> and Rivette & Kline<sup>11</sup> wherein they all underlined the importance of strategically managing intellectual property rights as well as its alignment with business strategy in order to attain competitive advantage.

A limitation of this research work is that it essentially takes perspective of a chemical based firms only, it excludes the aspect of intellectual

property rights in electronic world that is Digital Rights Management, and at the same time it also avoids interaction of Intellectual Property Rights issues with service industry. The present research work takes into cognizance only general forms of IPR namely patents, trademarks and copyrights whereby the other forms of intellectual property rights are not taken in consideration. Another important aspect which this work has distanced itself is the impact of political aspect on the value of intellectual property rights. Apparently, the industries/organizations taken for study may appear dissimilar however they are similar in nature as they all operate in same competitive market and all of them are majorly domestic players.

The present work of study aims at capturing the perception of the attributes namely innovation, number of IPR, IPR utilization and IPR's alignment with business strategy. Like any other social sciences research study the researcher has relied on perceptions of 397 respondents ranging from supervisory to managerial level. This has helped in gaining the insight into the research.

Future research on the same line can be undertaken by taking into consideration individual components of intellectual property rights namely patents, copyrights and trademarks individually and assessing their individual strategic impacts over the performance of the manufacturing firms. Another direction for future research could be to study the impact of strategic intellectual property rights management on performance of the firms in service sector. Another avenue for further research in this direction could be to evaluate the value of intellectual property rights as compared to the total strategic value generated by the firm for its customers.

## References

- 1 Houghton J & Sheehan P, A primer on the knowledge economy, CSES Working Paper No. 18, Centre for Strategic Economic Studies, Victoria University of Technology, 2000,1.
- 2 Chase R L, Knowledge management benchmarks, *Journal of Knowledge Management*, 1(1)(1997) 83.
- 3 Savage C, Fifth generation management, Butterworth-Heinemann, Boston, MA, 1996.
- 4 Sveiby K E, A knowledge-based theory of the firm to guide in strategy formulation, *Journal of Intellectual Capital*, 2 (4) 2001.
- 5 Andersen B, Technological change and the evolution of corporate innovation: The structure of patenting 1890-1990, Edward Elgar Publishing, Cheltenham, 2001.
- 6 Dosi G, Marengo L& Pasquali C, Knowledge, competition and innovation: Is strong IPR protection really needed for more and better innovations?, <http://www.mttl.org/volthirteen/dosi & Marengo & pasquali.pdf>, 26 April 2007.
- 7 Iversen E J, Fundamental and contextual issues involving the strategic use of IPRs, STEP Arbeidsnotat / Working Paper, 2000, 2.
- 8 Peng MW, Ahlstrom D, Carraher SM& Shi WS, An institution-based view of global IPR history, *Journal of International Business Studies*, 48 (2017) 893, <https://doi.org/10.1057/s41267-016-0061-9>.
- 9 Panda B & Joy S, Intellectual property rights-based debt financing to startups: Need for a changing role of Indian Banks, *Vikalpa: The Journal for Decision Makers*, 46 (3)(2021)143, <https://doi.org/10.1177/025609092111041817>.
- 10 Vega P, Exploiting Intellectual Property in high technology to create value, China-Europe International Business School, Working Draft, 21st Century Business Herald, (2004)1.
- 11 Rivette K G& David K, Discovering new value in Intellectual Property, *Harvard Business Review*, 78 (1)(2000)54.
- 12 Poltorak AI& Lerner P J, Corporate officers and directors can be liable for mismanaging Intellectual Property, *Patent Strategy & Management*, 1 (1)(2000) 1.
- 13 Shahidan N H, Abdul Latiff A S& Abdul Wahab S, Need for a university start-up framework for commercialisation of intellectual property rights (IPR): A Malaysia perspective, *Sustainable Business and Society in Emerging Economies*, 1(2)(2019)123, doi: 10.26710/sbsee.v1i2.1112.
- 14 Leibold M, Probst G & Gibbert M, Five styles of customer knowledge management and how smart companies use them to create value, *European Management Journal*, 20 (5) (2002) 459.
- 15 DayG S & Wensley R, Assessing advantage: A framework for diagnosing competitive superiority, *Journal of Marketing*, 52 (1988) 1.
- 16 Hu Y S, The international transferability of the firm's advantages, *California Management Review*, 37 (1995) 73.
- 17 Kay J, The structure of strategy, *Business Strategy Review*, 4 (1993) 17.
- 18 Lynch R, Corporate strategy, 4<sup>th</sup> Edition, Prentice Hall, 2006.
- 19 Porter ME& Millar V E, How information gives you competitive advantage, *Harvard Business Review*, 63 (4)(1985) 149.
- 20 Gilbert X & Strebler P, Developing competitive advantage, in *The Strategy Process, Concepts, Contexts, Cases*, 2<sup>nd</sup> Edition, Eds. Henry Mintzberg and James Brian Quinn, London: Prentice-Hall, 1989,82.
- 21 Foss N J, Knowledge-based approaches to the theory of the firm: Some critical comments, *Organization Science*, 7 (5) (1996)470.
- 22 Castanias R P & Helfat C E, Managerial resources and rents, *Journal of Management*, 17 (1991) 155.
- 23 HamelG & Prahalad C K, *Competing for the Future*, Harvard Business School Press, Boston, 1994.
- 24 Purbasari R, Wijaya C & Rahayu N, Entrepreneurial ecosystem and regional competitive advantage: A case study on the creative economy of Indonesia, *Advances in Social Sciences Research Journal*, 6 (6) (2019) 92, doi:10.14738/assrj.66.6652.
- 25 McGrathG, MacMillan I C & Venkataraman S, Defining and developing competence: A strategic process paradigm, *Strategic Management Journal*, 16 (5) (1995) 251.
- 26 Bharadwaj S, Varadarajan P & Fahy J, Sustainable competitive advantage in services industries: A conceptual model and research propositions, *Journal of Marketing*, 57 (1993) 83.

- 27 Castaldi C, Sustainable innovation and intellectual property rights: Friends, foes or perfect strangers?, LEM Working Paper Series. No. 2021/11, ScuolaSuperiore Sant Anna. *Laboratory of Economics and Management (LEM)*, Pisa, 2021.
- 28 Peteraf M A, The cornerstones of competitive advantage: A resource based view, *Strategic Management Journal*, 14 (3) (1993)179.
- 29 Schoemaker P J, Strategy, complexity and economic rent, *Management Science*, 36 (1990) 1178.
- 30 Barney J, Strategic factor markets: Expectations, luck, and business strategy, *Management Science*, 32 (10) (1986) 1231.
- 31 Penrose ET, The theory of the growth in the firm, Basil Blackwell, Oxford, 1959.
- 32 Wernerfelt B, A Resource-based View of the Firm, *Strategic Management Journal*, 5 (2) (1984) 171.
- 33 Barney J, Firm resources and sustained competitive advantage, *Journal of Management*, 17 (1) (1991) 99.
- 34 Barney J, Looking inside for competitive advantage, *The Academy of Management Executive*, 9 (4) (1995) 49.
- 35 Ferdinand A T, Strategic pathways toward sustainable competitive advantage, DBA Thesis, Southern Cross University, 1999.
- 36 Michalisin M D, Smith R D & Kline DM, In search of strategic assets, *International Journal of Organizational Analysis*, 5 (4) (1997) 360.
- 37 Teece D J, Pisano G & Shuen A, Dynamic capabilities and strategic management, *Strategic Management Journal*, 18 (7) (1997) 509.
- 38 Hall R, The strategic analysis of intangible resources, *Strategic Management Journal*, 13 (1992)135.
- 39 Grant R M, The resource-based theory of competitive advantage: Implications for strategy formation, *California Management Review*, 33 (3) (1991) 114.
- 40 Rumelt R P, Theory, strategy and entrepreneurship in *The Competitive Challenge*, Ed. Teece J D, Harper & Row, New York, 1987, 137.
- 41 Jeffrey RW, How sustainable is your competitive advantage, *California Management Review*, 34 (1992) 29.
- 42 Walters D, Halliday M& Glaser S, Added value, enterprise value and competitive advantage, *Management Decision*, 40 (9) (2002) 823.
- 43 Drucker P F, Post capitalist society, Harper Business, New York, 1993.
- 44 Sanderson S M, New approaches to strategy: New ways of thinking for the millennium, *Management Decision*, 36 (1) (1998) 9.
- 45 Senge P M, The fifth discipline: The art and practice of learning organisations, Doubleday, New York, 1990.
- 46 Wernerfelt B, From critical resources to corporate strategy, *Journal of General Management*, 14 (1989) 4.
- 47 Collis D J & Montgomery C A, Competing on resources: Strategy in the 1990s, *Harvard Business Review*, 73 (1995) 118.
- 48 Sy D H A, From imitation to innovation: Examining global drivers of innovation in an open model of technological change, *Ritsumeikan Journal of Asia Pacific Studies*, June 2021, [https://doi.org/10.34409/rjaps.39.01\\_106](https://doi.org/10.34409/rjaps.39.01_106).
- 49 Wagman G & Scofield S, The competitive advantage of intellectual property, *SAM Advance Management Journal*, 64 (3) (1999) 4.
- 50 Savale K S & Savale VK, Intellectual property rights (IPR), *World Journal of Pharmacy and Pharmaceutical Sciences*, 5 (6) (2018)2529, DOI- 10.20959/wjpps20166-7102.
- 51 What is intellectual property (IP)? WIPO, <https://www.wipo.int/about-ip/en/>.
- 52 Granstrand O, Strategic Management of Intellectual Property, *Chalmers University of Technology*, Sweden, 2000, 2.
- 53 Pitkethly R H, Intellectual property strategy in Japanese and UK companies: Patent licensing decisions and learning opportunities, *Research Policy*, 39 (2001) 425.
- 54 Sullivan P, Value driven intellectual capital: How to convert intangible corporate assets into market value, John Wiley & Sons, New York, 2000.
- 55 Teixeira A A C & Ferreira C, Intellectual property rights and the competitiveness of academic spin-offs, *Journal of Innovation and Knowledge*, 4 (3) (2019) 154, doi: <https://doi.org/10.1016/j.jik.2018.12.002>.
- 56 Cohen W M, Nelson R R & Walsh J P, Protecting their intellectual assets: Appropriability conditions and why U.S. manufacturing firms patent (or not), National Bureau of Economic Research, Working Paper, no. 7552, Cambridge, MA, 2000.
- 57 Levin R C, Klevorick A K, Nelson R R & Winter S G, Appropriating the returns from industrial research and development, *Brookings papers on Economic Activity*, 3 (1987)783.
- 58 Hall B & Ziedonis H R, The patent paradox revisited: An empirical study of patenting in the U.S. semiconductor industry; 1979-1995, *The Rand Journal of Economics*, 32 (2) (2001) 101.
- 59 Rumelt R P, Towards a strategic theory of the firm, in R. B. Lamb (ed.), *Competitive Strategic Management*, Prentice-Hall, NJ, 1984, 556.
- 60 Pattison M, Using intellectual property as a security, *Australian Intellectual Property Journal*, 7(3) (1996)135.
- 61 Mansfield E, Schwartz M & Wagner S, Imitation costs and patents: An empirical study, *The Economic Journal*, 91 (1981) 907.
- 62 Kingston W, Innovation needs patents reform, *Research Policy*, 30 (2001)403.
- 63 Davis L, R&D Investments, information and strategy, *Technology Analysis and Strategic Management*, 13 (3) (2001) 325.
- 64 Porter ME, Competitive Strategy, *The Free Press*, New York, 1980.
- 65 Hamel G& Prahalad C K, The core competence of the corporation, *Harvard Business Review*, 68 (3) (1990) 79.