CHAPTER-6
SUMMARY, CONCLUSIONS AND IMPLICATIONS

6.1 INTRODUCTION
The synthesis of the learning issues is discussed in this chapter in the context of dynamic business environment. The results and findings of the research study are summarized and some suggestions are made for organizations, particularly for managers who want to practice product innovation within the organizations. The support for the results/findings of the study from recent published literature is also presented. Further, significant research contributions, implications for researchers and practitioners, limitations of the study, and the possible directions for the future work are outlined.

6.2 SUMMARY OF MAJOR FINDINGS
The findings of different components of the research, i.e. questionnaire survey and case study analysis are synthesized according to the research objectives. The main research objective was to identify the determinants of product innovation for financial outcomes. Accordingly, a summary of the findings are presented here, reflecting upon the achievement of the research objectives. The study brings out that the framework for product innovation should be evolved keeping in view the project goals and the contextual factors namely product innovation factors. Based on the research findings, important areas have been identified which are discussed in the following sections.

6.2.1 Product Innovation in Automobile Sector
The study aimed at exploring the impact of product innovation on financial performance in Automobile Sector. Some of the significant findings of this part of the research are as follows:

* Part of this chapter has been published as:
• The Automobile organizations have significant difference in terms of Technology selection and Quality (through survey analysis). This is also supported by the nature of industries. The Automobile organizations leave less room for flexibility and Dependability/Delivery, since it has mostly interrelated processes and it is difficult to isolate the contribution made by an individual.

• There is almost negligible difference in terms of Intelligence Generation and Intelligence Dissemination for Automobile Industry. This is because the process of intelligence generation and dissemination, and management support is not affected by the nature of industries. It is primarily dependent on the management policy and philosophy of the organization.

In view of the above research findings, it can be safely concluded that the research objective related to the Automobile organizations has been adequately addressed in the research.

6.2.2 Relationships of Key Variables

The relationships of key research variables have been established by both the questionnaire survey and the case studies and the research findings on this front are summarized as follows:

• The case studies reveal that the product innovation plays an important role for stimulating entrepreneurial behavior within the organization.

• The case studies also show that the organization structure affects the implementation of product innovation practices. The hierarchical organization structure does not help to promote product innovation. The organization structure which provides scope for flexibility to the employees is important for successful implementation of product innovation practice.

• The case studies also show that appropriate selection of technology help to manage the risk associated with the entrepreneurial efforts.

• The case studies reveal that having appropriate performance evaluation systems i.e. financial outcomes help to stimulate product innovation behavior among the employees.
• The relationships of key research variables are, by and large, consistent in terms of regression analysis of macro and micro variables in questionnaire survey as well as case studies except in case of technology selection, and quality. The major predictor in case of macro analysis of questionnaire included Intelligence Dissemination, and Intelligence Generation. Similar findings have been reported by various researchers including Zahra (1991) and Hornsby et al. (2002). In micro analysis, it was found that variables namely, Intelligence Generation, Flexibility, Dependability/Delivery and Intelligence Dissemination emerged as enablers of product innovation Outcome from the case studies. These results are in accordance with the findings of Nonaka and Takeuchi (1995), and Zahra et al. (1999) who identified effective communication and use of rewards being critical for product innovation process.

• The regression analysis indicates that Intelligence Dissemination and Intelligence Generation are two major predictors of Innovativeness. Intelligence Generation and Intelligence Dissemination are critical for Innovativeness. This has been corroborated by other researchers (Kanter, 1983; Pinchot, 1985). These authors emphasized on open communication for fostering information sharing and empowerment has been proffered as a critical element for innovation.

• Structural equation modelling analysis has allowed a more rigorous examination of the interrelationships between the direct measures of the financial Outcomes and the hypothesized constructs of product innovation. Structural equation modelling has further identified the simultaneous impact of product innovation including Intelligence Dissemination, Intelligence Generation, Technology Selection, Quality, Flexibility, Dependability/Delivery, Marketing support of the product and Linking product-process innovation (in the order of importance).

6.3 VALIDATED CONCEPTUAL FRAMEWORK

The validated relationships at macro level helped in the development of the validated conceptual framework as envisaged in the objective of the research. The objective has been probed in depth at the micro level as well and a validated framework exhibiting relationships among micro variables has also been developed, which can safely be
treated as the validated model brought out by this research. The key findings related to validated conceptual framework are as follows:

- The validated conceptual framework generated by questionnaire survey has been corroborated by the case studies to a great extent. The variations in questionnaire survey are corroborated by micro level analysis of questionnaire survey.

- Although the Intelligence Dissemination, Intelligence Generation, Technology Selection, Quality, Flexibility, Dependability/ Delivery, Marketing support of the product and Linking product-process innovation (in the order of importance) are the major drivers (findings from case studies and survey analysis).

- Although Intelligence Generation doesn’t affect New Business Creation directly, but it has indirect relation with the product innovation Outcomes.

- Based on our study, the findings suggest that wherever modernization is under the action, it usually terminates with getting superior results. However, lack of time period may lead people to put extra efforts and get extra outputs and even able to generate more innovation, really affects them, in common, to act more innovative. Our research recommends that factors of product innovation impacts creativity in different forms based on whether the ecological system permits people to determine on their tasks, brings a feel of essential necessity about the work in hand. Our research states that the extra knowledge and affability they get; the more probable they were able to act creatively. Researchers have strong belief that creativeness comes from the making of big number of co-workers in the mental process, followed by the choice of mergers that may be specifically alluring and helpful. The innovative act leads to product innovation activities that affect the financial achievements in a positive way. Our study also recommends that low time pressure does not automatically boosts innovative thinking- but that it can do so when persons are motivated to gain, to play with concepts, and make something really novel. For many firms, the excellent solution to improve product creativity is to coherent targets at all phases of the firms that are realistic and anxiously decided, escaping the efficient partially affects the companies decision-making.
The above research findings, reflecting the achievement of research objectives to a great extent, led to the generation of some important recommendations, which have been partly tested in case studies.

### 6.4 IMPLICATIONS OF RESEARCH

This research has several important implications. From an academic point of view, the recent study gives a significant experimental route towards knowing the factors of product innovation. As earlier observed, the research in this field has been principally regulative in which most scientists have made major plans which need experimental exam, or are dependent on finite analyses of case study.

This study presents an experimental analysis that focuses the important product innovation leaders that are probably to affect financial results. This determination apparently separates this study from earlier research that focus with more concluded appraisals of firms’ acceptance to start product innovation tasks with passion.

The results can be used to steer further research in product innovation. The validated model includes Intelligence Dissemination, Intelligence Generation, Technology Selection, Quality, Flexibility, Dependability/ Delivery, Marketing support of the product and Linking product-process innovation. As compared to results published by Gunday et. al (2011) and Hornsby (2002), the findings of this study emphasizes on the importance of intelligence generation and dissemination as important predictors of corporate entrepreneurship which has not been included in earlier studies. Thus, the major writings in this area can therefore be used to guide further research into product innovation by focusing on the role of these factors uncovered in this study. These findings contribute to the theory of intelligence generation proposed by Nonaka and Toyama (2002). Further research may be taken up to explore the relationship of this variable and the financial outcomes of product innovation.

This study adds to the existing literature by identifying the role of intelligence generation and dissemination and highlight importance of future research with it. It is the perceptual aspect that may become most important for future research. The future research may include these factors to understand the influence of these two variables.
namely, intelligence generation and dissemination with financial outcomes.

The results also indicate that before implementing any kind of change management initiatives including entrepreneurial change, the organizations are likely to analyze the determinants of product innovation for stimulating such behavior. Further research efforts should aim at developing on this theory to measure the individual elements of Intelligence Dissemination, Intelligence Generation, Technology Selection, Quality, Flexibility, Dependability/ Delivery, Marketing support of the product and Linking product-process innovation and its relationship with financial outcomes. Such a tool can be of prime importance to the organizations which can help the organizations to identify the elements to create appropriate environment for encouraging product innovation activities (Jawaroski and Kohli, 1993).

The case study results reveal that the structure, and systems plays important role in implementing product innovation practice. Future researchers may focus on identifying the different types of structure which help to implement various practices of product innovation. Also the researchers may study the various systems which stimulate product innovation behavior within the organization. The future researchers may also study the impact of structure and systems on financial outcomes of product innovation.

6.4.1 Implications for Practitioners

The tool refined in this research also has realistic conclusions for executives. For instance, the instrument can be used as an appraisal instrument for assessing firms’ practice needs in venture capital and creativity. This kind of tool may further help the organizations to understand if they have the necessary internal environment to initiate product innovation. The results can help the organizations to identify the gaps. This tool can therefore be used as a diagnostic tool for product innovation. Lot of firms have started such plans in current period to search fields that needs focus to motivate business related activities (Hornsby, 2002; Kuratko and Montagno,1989). The outcomes of one experimental test shows that a coaching plan is developed to improve product innovation significantly impact thoughts of the surroundings by executives (Kuratko et al., 1990). Thus, the tool used in this research can be used as
an investigative tool for identifying whether the organization has the necessary environment for initiating product innovation activities and the training needs to motivate the employees for product innovation. This research has also the practical implications in terms of managing change within the organization. The tool can be used to identify the preparedness of the organizations to adopt entrepreneurial change. The present study also contributes towards the theory of entrepreneurial revitalization of the organization to gain competitive advantage (Volberda, 1998).

The research findings related to organizational structure would help the managers to design proper structure for implementing product innovation. The various processes and systems which help to implementing product innovation would guide the mangers to design the right kind of systems which promote product innovation.

6.5 MAJOR RECOMMENDATIONS

Findings of the questionnaire survey as well as case studies have been reflected upon and some major recommendations have been generated in order to help the organizations understand the internal environmental factors necessary for stimulating financial Outcomes. The recommendations have emanated out of various components of research and are tagged with specific macro/micro variables and relevant research component.

• Designing right kind of organizational structure and processes and systems to implement product innovation.

• Introduction of an effective Intelligence Dissemination process is recommended in order to implement product innovation within organizations (Intelligence Dissemination – product innovation Outcomes).

• Intelligence Generation should also be encouraged within the organization to know the needs of the users. More emphasis on inter-departmental collaboration and cross functional teams should be there. The effort should be directed towards harnessing the collaborative expertise of the employees within the organization.

• Quality of the product should be superior to enable the optimum utilization of
resources. This should be supported by management to make it more effective. Nevertheless, there should also be proper monitoring systems to control the resources allocated towards various product innovation activities. The employees could be made accountable towards their activities.

- It is recommended that the organization should have speedly delivery system since it has emerged as a major driver, which acts as a pivot variable to influence the financial outcomes. These important inter relationships show that to have better financial outcomes, management should support these activities by providing organizational flexibility which can further stimulate risk-taking.

- To implement product innovation, the management should have strong marketing support for good ideas, which will motivate them.

- Flexibility in production plans and organizational boundaries has emerged as major enablers. Thus, to have proper implementation of product innovation, the organizations should have proper technology selection and linking product-process innovation in place.

It is recommended that the organization should have proper organization structure and systems to facilitate the intelligence dissemination, which has emerged as major driver of product innovation.

- Due to its greater degree of technical, product, and market uncertainties, new business creation needs, higher degree of cross functional coordination and a greater sense of urgency. The business unit organization structure is more costly due to duplication of resources, but better suited to new business creation than either the functional or the matrix organization. Due to its dedicated cross-functional resources and clear accountability for results provide the required level of coordination, focus, and speed. In spite of this, its higher cost might not be suited for mature businesses. It generally pays to separate the start-up and growth businesses from mature businesses.

- In other instances, where self-sufficient business unit is not recommended includes situations where recent organizational change has happened. This is
because frequent reorganizations hamper new business creation. Such type of self sufficient business unit is also not beneficial if some sharing of functional resources is required.

- Although structural solutions are readily implemented, but it is best not to engage in a search for ‘ideal’ organization for new business creation. In spite of availability of choices, the best results may be achieved by focusing on neglected task of developing the competencies of the people and capability to work within and across boundaries through proper education, training, coaching, and mentoring.

- The organization will do better if it focuses on creating conditions that encourage competent and committed people to volunteer to lead new business initiatives. These volunteers should be allowed to recruit other believers who have the necessary skills, and the team must have sufficient autonomy and resources to proceed.

- The two basic approaches through which people can be motivated to undertake new business creation includes motivation by increasing the individual’s perception of rewards from new business creation, relative to its perceived risks. One of the methodologies is to offer financial incentives commensurate with the higher personal risk. But with a caution that this should be perceived as fair for its success. But studies suggest that use of incentives may lead to resentment among other members of the organization.

- The other approach which works best in such situations include offering plenty of recognition and career advancement as reward, and reduce the perception of personal risk considerable. This can be achieved by creating a mistake tolerant management culture. The perception of risk may be reduced through becoming ‘bodyguards’ of the intrapreneurs by lending them personal support to the people involved.

- The organization must provide sufficient resources and autonomy to decide which risks to take and how quickly to move within decided parameters.
6.6 SIGNIFICANT RESEARCH CONTRIBUTIONS

The study provided some new evidence on the relationship between product innovation and its determinants. The analysis indicated that intelligence dissemination (ID), intelligence Generation (IG), Dependability (D) and Flexibility (F) were some of the most important drivers of product innovation. The predictors of innovations include intelligence dissemination, intelligence generation and dependability. This shows that for innovations to succeed, it is important to have proper processes for intelligence generation and dissemination. The study suggests that innovations require work discretion to succeed. However, the study suggests that it is more important for product innovation to be supported by management for the venture to succeed. This further validates the necessity of having proper processes for dissemination of information at all levels, emphasizes on having proper management support and work discretion for successful new venture creation. The findings have contributed towards the existing theory of product innovation by extending the previous research (Adams, W. & Jeanrenaud, S., 2008; Alpkan, L. et al., 2010; Battisti, G. & Stoneman, P., 2010). The positive nature of the relationship points out the fact that the employees should be given the autonomy in terms of abilities and selection of venture ideas for encouraging product innovation. Also, it is important to have management support in terms of financial support for product innovation activities.

The hugely aggressive and changing surrounding present in many businesses pressurizing many firms’ to accept an entrepreneurial action, which is searching rival’s benefit through creativity on a continuous basis. The recent discussion is more on ‘how’ of venture capital and the current research recommend some of the argumentative steps to follow. This needs the senior executive group to make an organization structure that determines the consideration of particular persons working on creativity as an significant and known actions and facilitates and empower team and companies actions towards entrepreneurial results. The group will also use exact procedures to have information seen in the creativity procedure and move in a sense that facilitates assimilation of information. Regulatory aspects of entrepreneurship are important for surviving of aggressive firms’.
The significant research contributions with respect to financial outcomes are discussed as follows:

- In order to investigate the internal organizational factors that encourage product innovation, an empirical analysis has been conducted.
- The learnings from the questionnaire survey study and the case studies have been synthesized where a number of important findings have been reported, which provide a guiding framework for implementation of product innovation approach.
- A ‘Product Innovation Model’ has been evolved, which may be used as guiding framework by the firms and managers intending to use the product innovation approach.
- Inter relationships have been identified and complementary nature of certain firm level macro strategies has been established. This would guide the managers in evolving and properly implementing the product innovation strategies at firm level.
- This research corroborates to the study by registering the presence of an basic set of firms’ determinants that should be seen in enhancing firms’ actions within an firm. The five factors recognized by Hornsby et al. (2000) through CEAI (CE Assessment Instrument) were management support, work discretion/autonomy, rewards/reinforcement, time availability, and organizational flexible boundary which represent a parsimonious description of the internal organizational factors that influence entrepreneurial activity within established companies. These five factors accounted for 46 per cent variance in the corporate entrepreneurial activities (Hornsby et al., 2002). The inclusion of two factors, i.e. risk-taking propensity and intelligence generation and dissemination explained the variance of 76 per cent (Bhardwaj et al., 2006).
- The current research provides an important empirical step towards understanding the internal factors that stimulate product innovation. As previously noted, the literature in this area has been primarily normative. This study presents an empirical analysis that emphasizes the key internal factors that impact financial
outcomes. This focus clearly distinguishes this research from previous studies that tend to be concerned with more generalized assessments of organizations’ readiness to initiate product innovation efforts.

- This highlights the importance of future research with the current measurement instrument. It is the intuitive element that may become very significant for further study. The tools made in this research also has realistic conclusion for executives. For instance, the altered measurement scale can be used as a judgment tool for appraising companies coaching needs in entrepreneurship and creativity. Many firms have started such plans in current years to search fields that require consideration to motivate entrepreneurial and risky tasks (Kuratko and Montagno, 1989; McWilliams, 1993). The outcomes of one experimental test states that a coaching plan is developed to improve innovation significantly impacts thought of the surroundings by executives (Kuratko et al., 1990). Thus, the tools used in this research can be used as an examination instrument for searching whether the firm has the required surrounding for starting product innovation tasks and the coaching requirement to boosts the executives for product innovation.

### 6.7 LIMITATIONS OF THE STUDY

The limitations of the study are given as follows:

- Strict random sampling has not been used for the questionnaire study. Further, purposive sampling has been used for the pilot study and case studies.

- Questionnaire design and data collection is based on the assumption that various product innovation strategies can be formulated and implemented in stand-alone manner. However, the research findings have brought out that various product innovation strategies are complementary and presence of critical organizational drivers are important for financial Outcomes. The results also establish the inter relationship.
More number of case studies in automobile industry can be undertaken to understand the impact of product innovation in wider aspects. The variables such as technology selection and quality can be studied in details in future research. Moreover, the role of intelligence Dissemination and Intelligence generation can be explored further.

As most of the organizations were not willing to disclose the actual quantified data relating to the specific product innovation activities in terms of total number of products/services/markets identified, the product innovation outcomes has been measured in qualitative terms through financial outcomes in comparison with likely outcomes of product innovation approach where these internal variables are not available.

The external environmental factors such as technological dynamism and market potential have not been included in the empirical study.

Corporate level strategies can be taken up for further research, which has not been included in this model.

The current study limits its evaluation of product innovation on Intelligence generation Intelligence dissemination Technology selection Flexibility Dependability/ Delivery Quality Marketing Support of the Product and Product-Process Innovation

The current study is constrained in terms of the financial performance evaluation on Intelligence generation Intelligence dissemination Technology selection Flexibility Dependability/ Delivery Quality Marketing Support of the Product and Product-Process Innovation.

There are many inquiries that needs more depth study: the research just found the role of technology selection and capabilities such as intelligence generation, dissemination, flexibility, quality and marketing support and production process in innovation success, the determinants being on the origins of innovation in ways of internal determinants. Other determinants, for instance, external determinants (chain competence, social network) also play a significant role in
firms’ creativity process, although, these determinants were not involved in our concept. Apart from this, we did not acknowledge about the surrounding determinants such as related to market, related to industry or ecological factors. There is proof that market place technology changes can reduce the affect of technology action and capabilities as well as impact a firms’ capabilities growth. By taking these outside and mediating factors, we can make a wider concept, which would permit more awareness into the system that leads creativity success and enhance firms’ achievements.

- The study only confined to automobile sector and selected few companies dealing in passenger cars and precisely NCR. So results may vary if these constraints are not considered.

### 6.8 STUDY IS RELEVANT TO WHOM

The study is relevant in the following ways:

- Business organizations that intend to implement or adopt product innovation approach. The ‘product innovation Model’, which has been evolved in this research, can serve as guiding framework for implementing the product innovation. The inter relationships explained through interpretive matrix can be useful in understanding the impact on financial outcomes. It may also be useful in understanding the various processes for implementing product innovation within the organization.

- Researchers and academicians pursuing product innovation research. The results can be used to steer further research into product innovation activities.

### 6.9 SUGGESTIONS FOR FURTHER WORK

The suggestions for future work are given below:

- An empirical study may be carried out taking into account the inter-strategy influence relationships and requirements of inter-strategy support, as brought out in this study.
• Study on product innovation approach may be carried in select organizations that may be willing to share actual quantified data in terms of financial outcomes.

• Further study can be taken up by testing exact bonuses and benefits, plenty of time period given to executives to practice creative concepts and the extent of firms’ backing, scientists will be able to more certainly know the amount of determinants that affect executive’s efforts for product innovation activities.

• Further study works into firms’ entrepreneurial surroundings requires providing extra focus to the eight internal determinants not explored earlier, especially, the role of intelligence dissemination and intelligence generation in stimulating financial outcomes.

• Future research can also incorporate external environment as a major variable to understand its impact on product innovation activities within the organizations.

• Moreover, the corporate level strategies including the vision for product innovation and leadership can also be an important contribution towards product innovation research.

The fields for more study are stated subsequently approx to the factors and results side, correspondingly, of the concept. Additional study is required to clear the relations between the existence of major aspects or features in an firms’ situation and parties (such as middle-level executives) plans to practice innovation. Significant additions in these fields have come from the study of Ginsberg and Hay (1994), Hornsby et al. (2002), Hornsby and Kuratko (2003), Quinn (1985), and others, yet important study inquiries left. Additionally, these results are just example of the form of consequences that results from entrepreneurial actions. A small and moderate percentage of firms’ can exactly suit to display vast entrepreneurial actions within the positions of their employees (Morris and Kuratko, 2002). While previous studies on particular aspects of the theoretical concept has stated few important linkages (i.e. organizational ancestors and self-reported results, Hornsby and Kuratko, 2003), more study should be taken to further outline the tasks of all manager levels in the product innovation activities.

While this research recommends the presence of group of determinants required for
novel starting of a business, more study stating the linkages to such extent as the number of concepts generated in an firm; time period needed for concepts; and employee interest to move beyond firms’ borders. Moreover, while this research has started an significant inspection, description and distillation of these determinants, it is required to additionally back the linkages between the amounts of individual novel business actions. For instance, scientists may relate this situation’s three faces to financial measurements of firm achievements. While firms’ start novel business starting efforts for many logics, finally, top executives demands efforts for novel business concepts to enhance the firms’ financial health. Subsequently, further scientists could learn the links between new business creation phases and financial achievement measurements. At last, more studies into whether or not such elements as industry form and civilization play a significant role in the companies’ entrepreneurial rulers is required. In short, this research provides experimental proof regarding the presence of internal leaders who are expected to improve new business creation within automotive business. The research outcomes and expected situation offer a base for making a trustworthy and exact amount of the company’s internal leaders for new business creation for automotive business.

6.10 CONCLUDING REMARKS

The major aim of this research was to investigate the important internal organizational determinants that prompt product innovation and made a instrument that measures these determinants. To achieve this objective, the research collected data from 423 managers in 4 organizations. Outcomes from the investigation can therefore assist to define internal organizational determinants phase of impacts and finalize the base for better environment to enhance entrepreneurial activities. The role of organizational factors for stimulating product innovation has been discussed. After identifying different organizational factors from literature, a discussion has been followed by an empirical study conducted to identify the impact of product innovation on financial performance. The outcomes of the research and their affects for further study and executives action have been stated in detail.
This study has established that in the context of the fast changing needs of the customers, the adoption of product innovation is very important. The presence of internal organizational drivers/factors is critical for financial outcomes. A product innovation model has been evolved, which may be used by organizations to assess the presence of necessary and critical internal factors for stimulating product innovation activities within the organization. This framework can further be enriched by subsequent studies. There are several factors reinforcing relationships once they have been established. In this study financial performance has been related to the components of product innovation and it has been found the product innovation has a positive impact on the financial performance. So the automobile sector cannot neglect the product innovation as it is very essential for the overall success of the organization. All the business earnestly work for improvement of the financial performance so, product innovation is one of the key element to improve the financial performance.